

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Crown Electrokinetics Corp.

(Exact name of registrant as specified in its charter)

Delaware	238150	47-5423944
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

**1110 NE Circle Blvd.
Corvallis, Oregon 97330
(213) 600-4250**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Douglas Croxall
Chief Executive Officer
1110 NE Circle Blvd.
Corvallis, Oregon 97330
(213) 660-4250**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Please send copies of all communications to:

**M. Ali Panjwani, Esq.
Pryor Cashman LLP
7 Times Square
New York, New York 10036
(212) 421-4100**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer <input type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input checked="" type="checkbox"/>	Smaller reporting company <input checked="" type="checkbox"/>
	Emerging growth company <input checked="" type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS

SUBJECT TO COMPLETION DATED FEBRUARY 5, 2024

200,000,000 Shares

CROWN ELECTROKINETICS CORP.

This prospectus relates to the resale, from time to time, by Keystone Capital Partners, LLC (“Keystone Capital Partners” or the “Selling Stockholder”) of up to 200,000,000 shares of our common stock, par value \$0.0001 per share (“Common Stock”). All share numbers herein are adjusted for the one-for-sixty (1:60) reverse stock split of our Common Stock that we effectuated with an effective time of 11:59 p.m. Eastern Time on August 14, 2023 (the “Reverse Stock Split”). Our Common Stock began trading on Nasdaq on a split-adjusted basis beginning on August 15, 2023.

The shares of Common Stock to which this prospectus relates consist of shares that have been or may be issued to the Selling Stockholder pursuant to a common stock purchase agreement between us and the Selling Stockholder dated July 20, 2023 (the “Purchase Agreement”).

We are not selling any securities under this prospectus and we will not receive any proceeds from the sale of the shares by the Selling Stockholder. However, the Purchase Agreement provides that we may sell up to an aggregate of \$50,000,000 of our Common Stock to the Selling Stockholder, which we have sold \$4,736,446 of our Common Stock to the Selling Stockholder to date, and we may receive proceeds of up to an additional \$45,263,554 from the sale of the shares of Common Stock to the Selling Stockholder under the Purchase Agreement, from time to time in our discretion after the date the registration statement that includes this prospectus is declared effective and after satisfaction of other conditions in the Purchase Agreement. In addition, we have committed to issue additional shares of Common Stock to the Selling Stockholder with an aggregate value of \$440,000, which assuming a price of \$0.123 per share (which represents the closing price of our Common Stock on Nasdaq on February 2, 2024), would equal 3,577,236 shares of Common Stock (the “Commitment Shares”).

The Selling Stockholder is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act. The Selling Stockholder may sell the shares of Common Stock described in this prospectus in a number of different ways and at varying prices. See “*Plan of Distribution*” for more information about how the Selling Stockholder may sell the shares of Common Stock being registered pursuant to this prospectus.

We will pay the expenses of registering the shares of Common Stock offered by this prospectus, but all selling and other expenses incurred by the Selling Stockholder will be paid by the Selling Stockholder. The Selling Stockholder may sell our shares of Common Stock offered by this prospectus from time to time on terms to be determined at the time of sale through ordinary brokerage transactions or through any other means described in this prospectus under “*Plan of Distribution*.” The prices at which the Selling Stockholder may sell shares will be determined by the prevailing market price for our Common Stock or in negotiated transactions.

Our Common Stock is listed on The Nasdaq Capital Market (“Nasdaq”) under the symbol “CRKN.” The last reported closing price for our Common Stock on Nasdaq on February 2, 2024 was \$0.123 per share.

Investing in our securities involves a high degree of risk. See “*Risk Factors*” beginning on page 19 of this prospectus to read about factors you should consider before investing in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of the disclosures in the prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2024

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ABOUT THIS PROSPECTUS

The registration statement on Form S-1 of which this prospectus forms a part and that we have filed with the U.S. Securities and Exchange Commission (the “SEC”), includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus and the related exhibits filed with the SEC, together with the additional information described under the heading “*Where You Can Find More Information.*”

You should rely only on the information contained in this prospectus and the related exhibits, any prospectus supplement or amendment thereto, or to which we have referred you, before making your investment decision. Neither we, nor the selling stockholder named herein (the “Selling Stockholder”), nor any financial advisor engaged by us or the Selling Stockholder in connection with this offering, have authorized anyone to provide you with additional information or information different from that contained in this prospectus. Neither the delivery of this prospectus nor the sale of our securities means that the information contained in this prospectus is correct after the date of this prospectus.

You should not assume that the information contained in this prospectus, any prospectus supplement or amendments thereto, as well as information we have previously filed with the SEC, is accurate as of any date other than the date on the front cover of the applicable document. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The Selling Stockholder is not offering to sell or seeking offers to purchase these securities in any jurisdiction where the offer or sale is not permitted. Neither we nor the Selling Stockholder have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the jurisdiction of the United States who come into possession of this prospectus are required to inform themselves about and to observe any restrictions relating to this offering and the distribution of this prospectus applicable to that jurisdiction.

No person is authorized in connection with this prospectus to give any information or to make any representations about us, the securities offered hereby or any matter discussed in this prospectus, other than the information and representations contained in this prospectus. If any other information or representation is given or made, such information or representation may not be relied upon as having been authorized by us. To the extent there is a conflict between the information contained in this prospectus and any prospectus supplement having a later date, the statement in the prospectus supplement having the later date modifies or supersedes the earlier statement.

If required, each time the Selling Stockholder offers shares of Common Stock, we will provide you with, in addition to this prospectus, a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize the Selling Stockholder to use one or more free writing prospectuses to be provided to you that may contain material information relating to that offering. We may also use a prospectus supplement and any related free writing prospectus to add, update or change any of the information contained in this prospectus or in documents we have incorporated by reference. This prospectus, together with any applicable prospectus supplements, any related free writing prospectuses and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus, the statements made in this prospectus will be deemed modified or superseded by those made in a prospectus supplement. Please carefully read both this prospectus and any prospectus supplement together with the additional information described below under the section entitled “*Incorporation of Certain Information by Reference*” before buying any of the securities offered.

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Unless the context otherwise requires, the terms “Crown,” “the Company,” “we,” “us” and “our” refer to Crown Electrokinetics Corp.

Unless otherwise indicated, information contained in this prospectus or incorporated by reference herein concerning our industry and the markets in which we operate is based on information from independent industry and research organizations, other third-party sources (including industry publications, surveys and forecasts), and management estimates. Management estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as data from our internal research, and are based on assumptions made by us upon reviewing such data and our knowledge of such industry and markets, which we believe to be reasonable. Although we believe the data from these third-party sources is reliable, we have not independently verified any third-party information. In addition, projections, assumptions and estimates of the future performance of the industry in which we operate and our future performance are necessarily subject to uncertainty and risk due to a variety of factors, including those described in “*Risk Factors*” and “*Special Note Regarding Forward-Looking Statements*.” These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

RISK FACTOR SUMMARY

Below is a summary of the principal factors that make an investment in our securities speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, can be found under the heading "Risk Factors" and should be carefully considered, together with other information included in this prospectus.

Risks Related to Our Business

- We will require additional funding to sustain our ongoing operations and to continue our research and development activities.
- We have a history of operating losses.
- We may not generate sufficient cash flows to cover our operating expenses.
- We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.
- We do not directly manufacture products using Electrokinetic technology. We currently rely upon the activities of our partners and their customers in order to be profitable.
- Electrokinetic products face intense competition, which could affect our ability to increase our revenues.
- Declining production of automobiles and real estate could harm our business.
- We are dependent on key personnel.
- We are dependent on electrokinetic technology.
- Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.
- The extent to which the COVID-19 outbreak impacts our business, results of operations and financial condition will depend on future developments, which cannot be predicted.
- Our future growth and success is dependent upon the real estate industry's willingness to adopt smart glass and specifically our products, especially in the smart glass market which we are targeting with DynamicTint™.
- Our new products and services may not be successful.
- If we are unable to establish and maintain confidence in our long-term business prospects among business customers, analysts and within our industries, then our financial condition, operating results, and business prospects may suffer materially.
- Our operating and financial results forecast relies in large part upon assumptions and analyses developed by us. If these assumptions or analyses prove to be incorrect, our actual operating results may be materially different from our forecasted results.
- Disruption of supply or shortage of materials, in particular for glass, could harm our business.
- Increases in cost of materials could harm our business.
- We may be unable to meet our growing production demand, product sales, delivery plans and servicing needs, or accurately project and manage this growth nationwide or internationally, which could harm our business and prospects.
- We rely on complex machinery for our operations, and production involves a significant degree of risk and uncertainty in terms of operational performance and costs.
- If our products fail to perform as expected our ability to develop, market and sell our products and services could be harmed.

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- We may choose to or be compelled to undertake product recalls or take other similar actions, which could adversely affect our brand image and financial performance.
- We must successfully maintain and upgrade our information technology systems.
- We rely on certain third-party providers of licensed software and services integral to the operations of our business.
- Any unauthorized control or manipulation of our products' systems could result in loss of confidence in us and our products and harm our business.
- If our security controls are breached or unauthorized or inadvertent access to business customers' information or other data are otherwise obtained, our services may be perceived as insecure, we may lose existing business customers or fail to attract new business customers, our business may be harmed, and we may incur significant liabilities.
- Our products and our website, systems, and data we maintain may be subject to intentional disruption, other security incidents, or alleged violations of laws, regulations, or other obligations relating to data handling that could result in liability and adversely impact our reputation and future sales.
- Our products and services are subject to substantial regulations, which are evolving, and unfavorable changes or failure by us to comply with these regulations could substantially harm its business and operating results.
- We are subject to various government regulations that could impose substantial costs upon us and negatively impact our ability to operate our manufacturing facility.
- Many of our products must comply with local building codes and ordinances, and failure of our products to comply with such codes and ordinances may have an adverse effect on its business.
- Compliance with the regulations of the OSHA can be costly, and non-compliance with such requirements may result in potentially significant monetary penalties, operational delays, negative publicity and adverse effect on our financial condition.
- We are subject to labor and employment laws and regulations, which could increase our costs and restrict our operations in the future.
- We may fail to obtain or maintain necessary licenses or otherwise fail to comply with applicable laws and regulations.
- We are subject to requirements relating to environmental and safety regulations and environmental remediation matters which could adversely affect its business, results of operation and reputation.
- Our insurance strategy may not be adequate to protect us from all business risks.
- Our current and future warranty reserves may be insufficient to cover future warranty claims which could adversely affect our financial performance.
- Our business may be adversely affected by any disruptions caused by union activities.
- Adverse developments in the credit markets may impair our ability to secure debt financing.
- Loss of a major customer could result in a decrease in our future sales and earnings.
- If we are unable to achieve our targeted manufacturing costs for our products, our financial condition and operating results will suffer.
- We are exposed to fluctuations in currency exchange rates, which could affect our financial results.
- We are subject to collection risks.
- Future transactions could pose risks.

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- Crown Fiber Optics is dependent on the communications industry and may be susceptible to the risks associated with it, which could materially adversely affect its business, financial position or results of operations.
- Any failure of Crown Fiber Optics' physical infrastructure or services could lead to significant costs and disruptions.

Risks Related to Owning Our Common Stock

- If the trading price of our Common Stock fails to comply with the continued listing requirements of the NASDAQ Capital Market, we would face possible delisting, which would result in a limited public market for our Common Stock and make obtaining future debt or equity financing more difficult for us.
- If our shares of Common Stock become subject to the penny stock rules, it would become more difficult to trade our shares.
- Our stock price may be volatile, which could result in substantial losses to investors and litigation.
- Our certificate of incorporation and bylaws, and certain provisions of Delaware corporate law, contain provisions that could delay or prevent a change in control even if the change in control would be beneficial to our stockholders.
- If equity research analysts do not publish research or reports about our business, or if they issue unfavorable commentary or downgrade our Common Stock, the market price of our Common Stock will likely decline.
- We do not anticipate paying any dividends on our Common Stock for the foreseeable future.
- If we fail to develop and maintain proper and effective internal control over financial reporting, our ability to produce timely and accurate financial statements, comply with applicable laws and regulations, or access the capital markets could be impaired.
- We are an "emerging growth company" as defined in the JOBS Act and a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended, or the Exchange Act, and are able to avail itself of reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies, which could make our Common Stock less attractive to investors and adversely affect the market price of our Common Stock in the future.
- We are required by Section 404 of the Sarbanes-Oxley Act to evaluate the effectiveness of its internal control over financial reporting. If we are unable to achieve and maintain effective internal controls, our operating results and financial condition could be harmed.

Risks Related to this Offering

- It is not possible to predict the actual number of shares we will sell under the Purchase Agreement to the Selling Stockholder, or the actual gross proceeds resulting from those sales.
- Investors who buy shares at different times will likely pay different prices..
- We may require additional financing to sustain our operations and without it we may not be able to continue operations.
- Sales of our Common Stock to the Selling Stockholder may cause substantial dilution to our existing stockholders, the sale of the shares of our Common Stock acquired by the Selling Stockholder could cause the price of our Common Stock to decline, and the actual number of shares we will issue under the Purchase Agreement, at any one time or in total, is uncertain.
- Future sales and issuances of our Common Stock or other securities might result in significant dilution and could cause the price of our Common Stock to decline.
- Management will have broad discretion as to the use of the proceeds from the offering, and uses may not improve our financial condition or market value.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including the information set forth under the headings “Risk Factors” as included elsewhere in this prospectus and our financial statements and the related notes and the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations”, in our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023, and September 30, 2023, all of which are incorporated by reference herein.

Our Company

Business Overview

We develop and sell optical switching film that can be embedded between sheets of glass or applied to the surface of glass, or other rigid substrates such as acrylic, to electronically control opacity (“DynamicTint™”). Originally developed by Hewlett-Packard (“HP”), our technology allows a transition between clear and dark in seconds and can be applied to a wide array of windows, including commercial buildings, automotive sunroofs, and residential skylights and windows. At the core of our proprietary and patent-protected technology is a thin film that is powered by electrically charged pigment which can reduce heat gain replacing common window tints but also providing a more sustainable alternative to blinds and other traditional window treatments. We partner with leading glass and film manufacturers for mass production and distribution of DynamicTint.

Electrokinetic Film Technology

Our electrokinetic (EK) technology was derived from proprietary ink and microfluidic technology developed at HP. Electrokinetic refers to the movement of particles within a fluid under the influence of an electric field. Our EK film technology utilizes nanometer-sized pigment particles that are electrically charged and suspended in a liquid that is sandwiched between two clear substrates that are coated with a transparent conductor oxide (TCO) film. *Figure 1.* In a non-energized state, the suspended pigment particles are distributed uniformly between the plastic films, and will absorb, transmit, or reflect light depending on the properties of the suspended pigment (dark state). When the proper electrical signal is applied to the conductive TCO layers, an electrical field is created, and the charged pigment particles collect in micro-embossed holes in a layer of polymer resin covering the transparent conductor surface. As the charged pigment particles are collected, the fluid becomes highly transparent (clear state). By applying a different electrical signal, the pigment can be dispersed back into the fluid to achieve the desired color density or opaqueness.

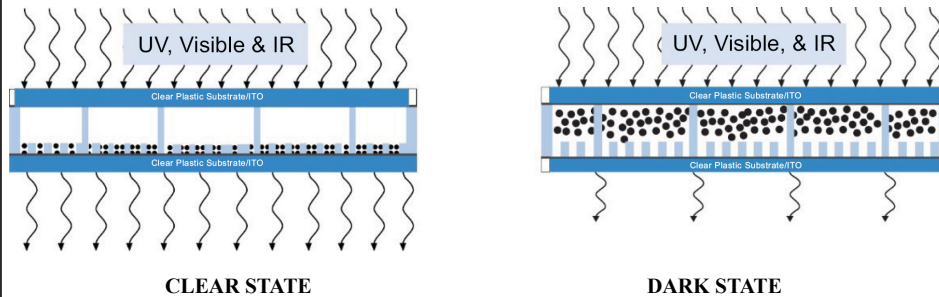


Figure 1. Schematic cross-section of electrokinetic film in clear and dark states.

Highlights

- **Clear Polyethylene Terephthalate (PET) Substrates** — Same material as window tinting films.
- **Transparent Conductor on PET** — Indium Tin Oxide (ITO) — same as most touch screens.
- **Electronic Ink** — Nanoparticles suspended in a fluid which absorb light.
- **Energy Source** — Nanoparticles are controlled through DC low voltage applied to the ITO conductor material which is powered by a lithium-ion battery that is charged with a solar cell strip, no hard-wiring necessary.

Our plastic films are manufactured using industry standard roll-to-roll (R2R) processing equipment. We believe our R2R processing will have an inherently lower manufacturing cost compared to sheet-based processing methods used for other smart window technologies like electrochromic glass. There are three basic steps to making our film using R2R equipment.

- 1) **Deposition:** R2R TCO deposition on clear polyethylene terephthalate (PET) plastic film using vacuum sputtering of indium-tin oxide (ITO). The ITO on PET film can be provided by a number of suppliers. Millions of square feet of ITO on PET are currently provided for nearly all capacitance-based display touch screens.
- 2) **Embossing:** R2R embossing of UV-curable resin in a proprietary and patent protected 3-D pattern for ink pigment control and containment on one of the two plastic films. An example of the embossed pattern is shown in *Figure 2*. The R2R embossing process can be completed by various plastic film companies. Crown has the capability to accomplish the coating and embossing steps within its current facility in addition to working with manufacturing partners.

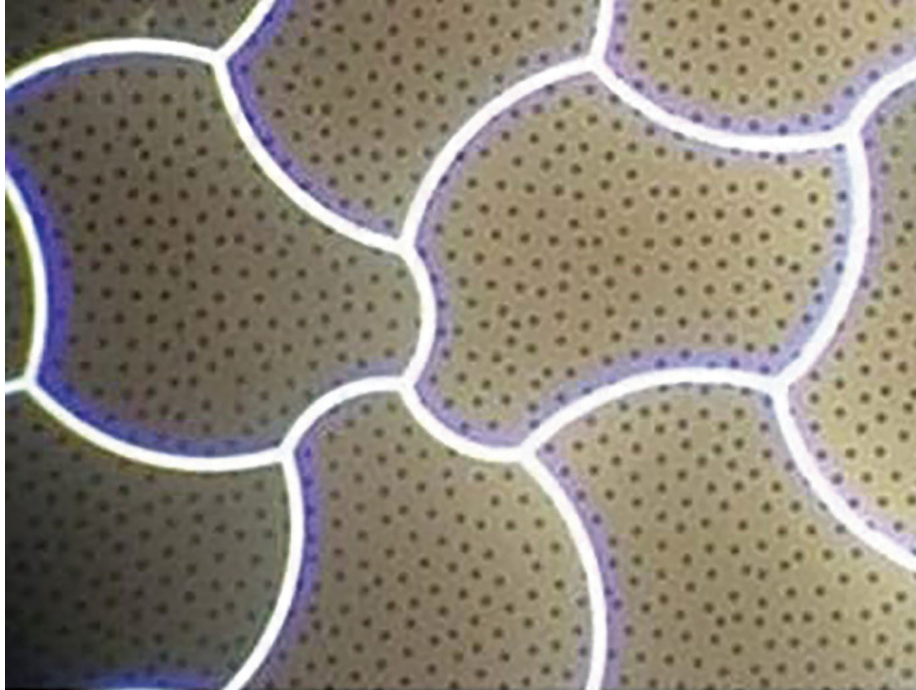


Figure 2. Microscopic Optical Image of Embossed Film

- 3) **Lamination:** The final R2R process laminates the two layers of PET together with the proprietary and patent protected pigment-containing fluid contained by the wall structure shown by the white areas in *Figure 2*. The wall area has adhesion to the upper layer of PET with ITO film thereby sealing the fluid between the two plastic layers. The fluid contains nanometer-sized pigment particles that are charged electrically and suspended in the fluid.

We believe that DynamicTint™ has the following distinct advantages over existing optical electronic film technologies:

- **Neutral Color** — Pigment is designed to be color neutral and will not affect the hue of what is viewed through the window in any clear, dark or tinted state.
- **Speed** — Transition time is typically a few seconds.
- **Affordability** — Roll-to-Roll film manufacturing using relatively inexpensive materials.
- **Low Energy Requirements** — Film is low voltage and can be powered with a small battery charged by a solar cell strip or wired to an existing electrical infrastructure including a LAN line.
- **Retro-Fit** — Film can be applied in a Smart Window Insert (“Inserts”), which can be placed within existing window frames, eliminating the needs for both window treatments or to replace single pane windows with dual pane windows.
- **Sustainable** — Reduces energy used to heat or cool a room via HVAC systems and can use renewable energy to transition the film.

Smart Window Insert powered by DynamicTint™

Our first product will be the Smart Window Insert powered by DynamicTint™ which is specifically designed for retrofitting in the domestic and international commercial real estate install base. Our DynamicTint™ can be laminated to other surfaces like heat-treated glass or acrylic and the laminated sheet can be assembled in Smart Window Inserts that can be placed into the interior side of the window frame providing the dynamic tinting capability as well as additional insulation and sound proofing to the existing windows (*Figure 3*).

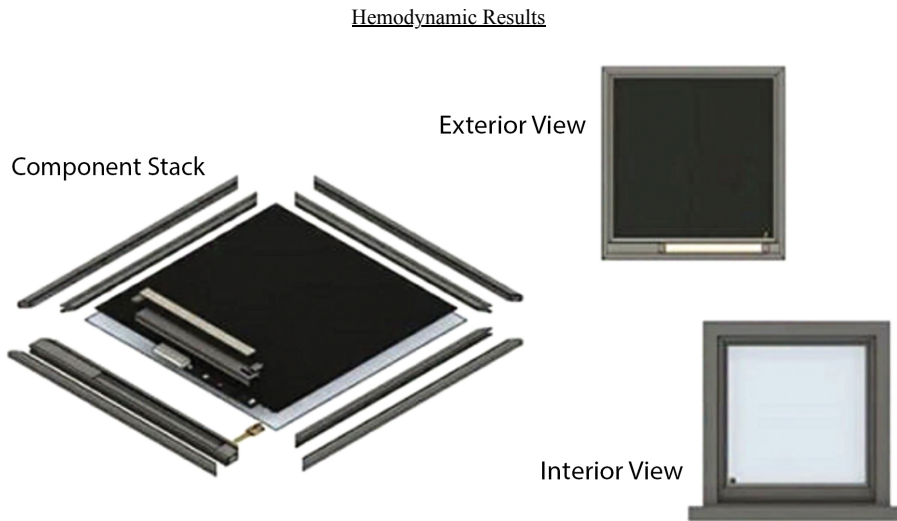


Figure 3. Window Insert with EK Film

The Insert is a custom-sized panel comprised of a rigid substrate (thin glass or acrylic) with a silicon compliant edge seal that allows for the insert to securely fit into the interior side of the window frame.

Some of the Insert's features include:

- **Solar-powered** — eliminating the need to hardwire it into the building's electrical system
- **Wirelessly enabled** — facilitating communication with all the other installed inserts and integration with the building's management software system
- **Sensor equipped** — enabling the Insert to auto-sense the intensity of exterior light and interior ambient light
- **Software enabled** — can be managed via programmed macros, dynamically managed by the building, or user-controlled within an office
- **Data collection** — allowing optimization of the Inserts/curtain wall energy performance.
- **Lease vs Purchase** — Creative and flexible financing allows for customers to lease Inserts on a long-term basis and avoid large capital expenditures

We believe our Smart Window Inserts can be easily installed into commercial buildings, residential windows, skylights, and windows within garage doors. In commercial buildings, our Smart Window Inserts can be used to convert existing single pane windows into dual pane windows. We believe there is a significant opportunity to provide Smart Window Inserts to commercial building owners who are looking to eliminate window blinds, gain energy efficiency, and reduce carbon emissions.

Sustainability

We are aware that working towards building a sustainable future is a common goal shared by many. Companies such as Walmart (NYSE: WMT), Amazon (NASDAQ: AMZN) and Apple (NASDAQ: AAPL) are now publishing sustainability pledges, and we are seeing a trend of pledging to make their workplaces more environmentally friendly.

Our patented technology provides a solution that helps address many sustainability issues such as:

- **Reducing waste** — as opposed to replacing single pane window units with newly manufactured dual pane windows, we allow building owners to install our retrofit DynamicTint Insert into existing single pane window frames thereby creating a dual pane window;
- **Reducing energy** — Our Insert reduces HVAC energy consumption by reducing the need for constantly cooling and heating a room, reducing the customer's carbon emissions. Initial field testing suggests HVAC energy savings of up to 26% could potentially result from the installation of Smart Window Inserts. According to FacilitiesNet (<https://www.facilitiesnet.com/windows/exteriors/article/Smart-Window-Benefit-Energy-Savings-Reduced-Glare-17280>), the ability to control the amount of heat entering a building reduces the heat load of the building which in turn reduces your HVAC usage;
- **Using renewable energy** — Our Smart Window Insert is low voltage and low wattage and can be powered by a solar strip that captures the sun's energy and is integrated into the Insert itself thereby eliminating the need to hardwire the Insert to the home or building's electrical system.

Another benefit of DynamicTint is being able to optimize daylight usage, thereby reducing the usage of lights. A study done by Project Drawdown (<https://www.drawdown.org/solutions/dynamic-glass>) projected that if 30 – 50% of commercial building spaces install dynamic glass, the potential climate-weighted energy efficiency from cooling is estimated at 9% and lighting at 9% — depending on local climate, building location and window orientation. This can result in 0.3 – 0.5 gigatons of emissions reductions from decreased energy use.

At Crown, we are committed to building a product that can be self-sufficient and does not require an additional power source or hard wiring into the electrical system of a residential home or commercial building. This ensures that as we reduce a building's energy consumption, we are not adding to it and are working towards being carbon neutral.

Intellectual Property

On January 31, 2016, we entered into an IP agreement with HP to acquire a research license to determine the feasibility of incorporating HP’s electrokinetic display technology in our products. On February 4, 2021, we entered into entered into a fourth amendment to the agreement with HP. Pursuant to such amendment, among other items, the parties agreed to amend the list of patent and patent applications, which includes two additional patents (the “HP Patents”) that are assignable to us by HP upon the exercise of our option to acquire the HP Patents (the “Option”). In connection with our exercise of the Option, we paid HP an aggregate amount equal to One Million Five Hundred Fifty Thousand Dollars (\$1,550,000) on February 9, 2021. From the date of the exercise of the Option until January 1, 2030, we agreed to pay to HP a royalty fee based on the cumulative gross revenue received by us from the HP Patents as follows:

Time Window	Lifetime Cumulative Gross Revenue	Royalty Rate
Prior to December 31, 2029	\$Less than \$70,000,000	0.00%
	\$70,000,000 – \$500,000,000	1.25%
	\$500,000,000 and beyond	1.00%
January 1, 2030 onward		0.00%

We entered into a Patent Assignment Agreement with International Business Machines Corporation (“IBM”) to acquire an ownership interest in assigned patents. As consideration for the patents, we paid \$264,000 (including legal fees of approximately \$38,000) on July 23, 2021.

In addition, we have current patent applications in the United States and other countries that if granted, would add three additional patents to its portfolio. Our United States patents expire at various dates from March 26, 2028 through March 10, 2036.

A 2022 appraisal of our intellectual property by one of the preeminent third-party IP-valuation firms indicated a total valuation of approximately \$94 million, consisting of \$35 million relating to patents (limited to the US office building market, supplying its Smart Window Insert) and \$59 million for trade secrets.

We believe that its EK technology is adequately protected by its patent position and by its proprietary technological know-how. However, the validity of our patents has never been contested in any litigation. We also possess know-how and relies on trade secrets and nondisclosure agreements to protect its technology. We require any employee, consultant, or licensee having access to its confidential information to execute an agreement whereby such person agrees to keep such information confidential.

Crown-Owned Patents

Country	Filing Date	Publication No.	Title
USA	28-Jan-19	11174328	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
China	28-Jan-19	CN111918894A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Europe	28-Jan-19	3752867	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Japan	28-Jan-19	JP 2021514422A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Korea	28-Jan-19	KR 20200122333A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
WO	28-Jan-19	WO 2019/160675	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS

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Country	Filing Date	Publication No.	Title
USA	16-Feb-18		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	13-Jan-20	2020-0225552	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
WO	13-Jan-20	WO2020/150166	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	16-Jan-19		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
EPO	23-Jun-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
CN	8-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
Korea	5-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
JP	15-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	7-Jul-16	10377909	INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
USA	22-Nov-10	8179590	ELECTRO-OPTICAL DISPLAY
USA	29-Jul-10	8054535	ELECTROPHORETIC DISPLAY DEVICE
USA	23-Aug-17	10852615*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
EPO	2-Dec-15	3256903*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
EPO	2-Dec-15	3250962*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	23-Aug-17	10656493*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
USA	30-Nov-20	2021-0108463*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
WO	2-Dec-15	WO2016/089957*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
WO	2-Dec-15	WO2016/089974*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	18-Dec-14	9567995	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	18-Aug-15	9816501	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	9-Mar-18	10926859	SMART WINDOW ACTIVATION TO PREVENT LASER DISTURBANCE
USA	10-May-18	10935818	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
USA	26-Oct-16	10106018	AUTOMATED WINDSHIELD GLARE ELIMINATION ASSISTANT
USA	2-Sep-16	10144275	ENVIRONMENTAL CONTROL IN VEHICLES

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Country	Filing Date	Publication No.	Title
GB	2-May-19	2586760	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
CN	2-May-19	CN111936331A	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
DE	2-May-19	112019000749	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
JP	2-May-19		EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
PCT	2-May-19	WO2019/215544**	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
USA	11-Oct-21	11578150	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	29-Mar-22		SELF-ALIGNING MASTER AREA MULTIPLICATION FOR CONTINUOUS EMBOSsing
USA	11-Sep-22		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	22-Jul-14		INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY (recently assigned to Crown)
USA	10-Feb-23		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
PCT	23-Feb-23		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
<p>* Co-owned with University of Cincinnati</p> <p>* Inactive</p>			

In-Licensed Patents

Patent No.	Country	Patent Date	Publication No.	Status	Title
8,183,757	USA	22-May-12		Issued	DISPLAY ELEMENT
8,184,357	USA	22-May-12		Issued	DISPLAY ELEMENT
8,331,014	USA	11-Dec-12		Issued	PIGMENT-BASED INKS
8,384,659	USA	26-Feb-13		Issued	DISPLAY ELEMENT INCLUDING ELECTRODES AND A FLUID WITH COLORANT PARTICLES
8,432,598	USA	30-Apr-13		Issued	TRANSPARENT CONDUCTOR STRUCTURE
8,896,906	USA	25-Nov-14		Issued	INKS INCLUDING BLOCK COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
8,018,642	USA	13-Sep-2011		Issued	ELECTRO-OPTICAL DISPLAY

Business Model

We intend to manufacture our patented EK Technology under the name DynamicTint™. We intend to generate revenue by selling our Smart Window Inserts powered by DynamicTint™ to our customers.

Our first product will be the Smart Window Insert powered by DynamicTint™ for retrofitting in commercial buildings. Our Smart Window Inserts will allow the building owner to quickly convert a single pane window unit to a dual pane window unit. Our Inserts will act as the “second pane” and will allow the building owner to enjoy all the benefits of a dual pane window without having to replace their existing single pane windows.

Our customers will be able to buy and own their Smart Window Inserts but also, at some stage, have the option to enter long-term leases of the Inserts with us. Additional applications we are exploring with potential customers of our DynamicTint include:

- Smart Window Inserts for retrofitting of commercial buildings in markets outside the United States.
- Smart Window Inserts for retrofitting of multi-family buildings.
- Residential homes: residential windows, garage door windows, windows contained in and surrounding residential front doors as well as residential skylights.
- Automotive: sunroofs.

As our DynamicTint technology requires very little energy to effect that transition from clear to dark state, a rechargeable battery coupled with a built-in solar cell eliminates the need to hardwire the inserts to the building electrical system. We believe that the potential retrofit market for its Smart Window Inserts is significantly large. Each unit will have wireless communication capability for control of the film and communication with the building HVAC system.

We have also developed a working prototype of an insert for the residential skylight, which allows a homeowner to control the amount of light entering the room. Our DynamicTint Insert does not require the homeowner to replace their skylight as it conveniently fits into the existing frame. Our skylight insert will allow a homeowner (through a Bluetooth connection or RF controller) to adjust the level of desired tint easily and quickly, thereby controlling the amount of light and heat entering the room. The DynamicTint Skylight Insert will be powered by a rechargeable lithium battery and built-in solar cell thereby eliminating the need to wire the insert to the home’s electrical system.

Partners and Customers

On March 25, 2022, we executed a Master Supply Agreement (the “BDN MSA”) with Brandywine Operating Partnerships L.P. to install its Smart Window Inserts powered by DynamicTint™ in Brandywine office buildings. The BDN MSA provides the master terms and conditions under which purchase orders will be executed for us to supply units to retrofit windows at certain locations.

On December 27, 2021, we executed a Master Supply Agreement (the “HPP MSA”) with Hudson Pacific Properties L.P. for the installation of our energy saving Smart Window Inserts in several office properties across its West Coast portfolio. The HPP MSA provides the master terms and conditions under which purchase orders will be executed for us to supply units to retrofit windows at certain locations.

Prior to this, on September 27, 2021, we had entered into a Master Supply Agreement with MetroSpaces Inc., our first commercial customer, install its Smart Window Inserts in MetroSpaces’ 70,000 square-foot Houston, Texas office building.

In the future, we may enter into multiple specific transactions with our customers by executing purchase orders for additional buildings.

Additionally, discussions with multiple other building owners to buy our Smart Window Inserts are progressing as the regulatory and consumer pressure to reduce the level of energy consumption and carbon emissions continues to build.

Purchase Orders

On August 12, 2022, we entered into two Purchase Orders (PO’s) with Hudson Pacific Properties, L.P. (“Hudson”) for the purchase of our Smart Window Inserts™ (“Inserts”). Hudson is a unique provider of end-to-end real estate solutions for tech and media tenants. The PO’s have a value of \$85,450 and represent the first orders we received prior to the launch of our Inserts. Delivery and installation are expected to begin in Q3 2023.

On August 12, 2022, as additional consideration for the PO’s, we issued a warrant to Hudson to purchase 300,000 shares of our Common Stock at \$0.75 per share. The warrant has a five year life and expires on August 12, 2027.

Manufacturing

We are developing its manufacturing capabilities to meet anticipated demand for the Smart Window Insert at our facilities located in Corvallis, Oregon, for film production, and Salem, Oregon, for Smart Window Insert manufacturing.

We plan to produce its EK film at its facilities in Corvallis using its existing roll to roll (the “R2R”) embossing equipment. We intend to perform all other film manufacturing processes at our Corvallis facility upon receipt of additional manufacturing equipment currently ordered and awaiting delivery.

Our Smart Window Inserts will be produced at our Salem facility, where EK film will be laminated to glass, and then assembled into a frame. The inserts electronic components will also be integrated into the insert and the final assembled inserts will be packaged for shipment from Salem to our customers’ buildings.

The completion of our facilities in Corvallis and Salem marks our transition to being completely self-sufficient in manufacturing our products, eliminating any dependency on contract manufacturers or partners.

Commercial Office Building Market

Commercial buildings have gotten larger in the United States as their floorspace continues to grow faster than the number of commercial buildings, according to preliminary results from the U.S. Energy Information Administration’s (EIA) 2018 *Commercial Buildings Energy Consumption Survey* (CBECS). CBECS estimates that 5.9 million U.S. commercial buildings contained a total of 97 billion square feet as of 2018. The number of commercial buildings increased by 6%, and commercial square footage increased by 11% since the CBECS was last conducted in 2012.

Smart Glass Industry Trends

We believe there are favorable converging global trends in the major near-term markets for “smart glass” products. Key factors driving the growth of the smart glass market are the growing demand for smart glass for energy savings for existing commercial and residential buildings. Added to this trend are government mandates and legislation for energy-efficient construction of both commercial and residential buildings. There is a growing opportunity for smart windows in the transportation industry including automobiles, commercial trucks, buses, and passenger rail cars.

In both public and private sectors across the world, there are substantial efforts targeted toward the promotion and use of energy efficient smart glass materials, including those used in automobiles, windows and other architectural glazings.

In September 2020, Markets and Markets issued *Smart Glass Market with COVID-19 Impact by Technology (Suspended Particle Display, Electrochromic, Liquid Crystal), Application (Architecture, Transportation, Consumer Electronics), and Geography — Global Forecast to 2025*. The smart glass market size is expected to grow from \$3.8 billion in 2020 to \$6.8 billion by 2025, at a CAGR of 12.1% during the forecast period. The growth of the smart glass industry is driven by factors, such as the growing adoption of smart glass in automotive application and, declining prices for electrochromic material. Other major driving factors for smart glass adoption include supportive government mandates and legislation on energy efficiency. Governing bodies of various countries are increasingly encouraging the use of these energy-efficient products.

Smart glass has inherent energy-saving and auto-dimming properties, which reduces its maintenance cost. As a result, the perceived benefits of these glass products are more than the incurred investments.

We believe that the smart glass industry is in the initial phase of growth and that DynamicTint™ may have commercial applicability in many products where variable light-control is desired.

Our Technology

DynamicTint™ combines many of the favorable properties of the other smart window technologies. It has fast-switching time and unlike electrochromic (EC) technology, modulation in light level is not area dependent and the film is neutral in color in all settings. Unlike Suspended Particles Devices (SPD) and Polymer Dispersed Liquid Crystal (PDLC) technology, EK film does not need high voltage alternating current to power the film. Because of the low power requirements, EK films can be powered with batteries or combined with small area solar cells, allowing retrofit to existing windows. Furthermore, in the future, EK film could be made with other colorants and it is possible with modification to the design to use two colorants in the same film, which has been demonstrated in the recent past under a research project at the University of Cincinnati. Below is a table outlining some of the typical properties of each technology.

Other Smart Glass Technologies

Variable light transmission technologies can be classified into two basic types: “active” technologies that can be controlled electrically by the user either automatically or manually, and “passive” technologies that can only react to ambient environmental conditions such as changes in lighting or temperature. Most of the technologies are “active”. One type that is passive is thermochromic technology where a rise in temperature will darken the film applied to glass.

We believe that our DynamicTint has certain performance advantages over other “smart glass” technologies and that pricing and product performance are the two main factors critical to the adoption of smart glass products. Because the non-EK smart glass technologies listed below do not have published, consistent pricing or cost data that can be relied upon, we cannot accurately report our price position relative to these other technologies. In terms of product performance, we believe that DynamicTint offers numerous advantages over other smart glass technologies, as discussed below.

Technology	Can Retrofit	Power Usage	Can Tint to Black	Solar or Battery Powered	Tint Transition Speed	Light Transmission
DynamicTint™ (Electrokinetic)	P	<0.01 W/M2	P	P	approx. 4 sec	3.0% – 70% or 0.4% – 50%
Electrochromic (EC)	↑	0.3 – 2 W/M2 (30X EK)	↑	↑	5 – 40 min	<1% – 58%
Suspended Polymers in Particles (SPD)⁽¹⁾	↑	1.1 W/M2 at 100V/50hz (110X EK)	↑	↑	<3 sec	0.8% – 55%
Polymer Dispersed Liquid Crystal (PDLC)	↑	5 – 20 W/M2 (500X EK)	↑	↑	1 – 3 sec	~80%

Ref. (1): SPD Film — LCF-1103DHA90 Showa Denko Material Co.

Electrochromic Glass

Electrochromic (EC) glass technology has been used as a light absorbing technology for rear view mirrors in automobiles for decades, and more recently for large-scale windows. However, the EC technology developed for windows is based on a different set of materials that are directly deposited on the heat-treated glass panels. All of the current EC companies use tungsten oxide as the main component involved in the color transition from clear to blue. Because of the nature of the chemical transition of tungsten oxide, EC film does not absorb as much of the blue light, so remaining light will have a strong blue hue both in the room and when looking through the window. The speed of the switching time from dark to light vice versa is directly related to the size of the window area and the electrode design which brings electrical current to the EC material to start the chemical transition. EC technology is basically a battery-like material that requires “charging and discharging”. The time to charge/discharge the EC material in a large window can take up to 40 minutes to change form the dark state to the clear state at nominal temperatures. Also, during switching of the EC film, there can be non-uniform areas which can vary in level of tint from center to edge. The larger the area of the window, the more non-uniform during the change of state. Longer switching time can minimize the non-uniform areas. The EC materials are typically vacuum deposited directly on “defect-free” glass. The typical investment required for a large window electrochromic factory can run into the hundreds of millions of dollars, due to the large-scale vacuum equipment required, low particulate cleanroom required, and the relatively slow speed of deposition for all the various layers. Halio, formerly Kinestral Technologies, is using a chemical liquid deposition technique to replace some of the vacuum deposition steps to lower the capital investment needed for manufacturing.

Suspended Particle Glass (SPD)

SPD is a film that has suspended long and narrow particles in an encapsulated liquid polymer film with layers of ITO on either side to allow generation of an alternating current electrical field to twist the particles from a random state to a near vertical state perpendicular to the ITO plane. In the vertical state light passes through the film and in the random state the light is absorbed by the particles. The color of the film is blue since the particles used in the film do not absorb blue light as well as other colors of sunlight. No other types of particles have been created for this type of device. The film responds quickly to the electrical field, however, requires constant high AC voltage to hold the clear state. The film is manufactured on plastic and uses roll-to-roll (R2R) equipment processing. Also, because the particles are aligned when in the clear state, the film has a limited viewing angle much like older liquid-crystal displays. When viewed at a side angle, the film will appear darker. The current market for SPD has been mainly automobile sunroofs where the viewing angle of the passengers is relatively fixed at nearly perpendicular angle to the SPD film.

Polymer-Dispersed Liquid Crystal (PDLC) Film

PDLC requires an AC electric field like the SPD film described above to achieve a clear state. However, the liquid-crystal based film can only scatter light in the power-off state, therefore, most of the incoming light is transmitted through the film (~80%). Typically, the PDLC film is used for interior windows or doors to create privacy. PDLC has similar manufacturing methods using R2R equipment and plastic film with ITO conductor to the SPD film. The film is available from many Far East manufacturing companies with some able to make ~150 cm width film. The quality of the film can vary based on the manufacturing company. The film was invented at Kent State University in the 1980's and the patents have expired.

Competition

Several smart glass competitors have an operating history, including:

- SAGE Electrochromic, Inc., a wholly owned subsidiary of Saint-Gobain, which develops and manufactures electrochromic glass;
- View Glass [NASDAQ: VIEW] and Halio, formerly Kinestral Technologies, manufacture electrochromic glass at their purpose-built manufacturing facilities and both are headquartered in California; and
- Research Frontiers, Inc. [NASDAQ: REFR] licenses an electronically controlled tinted film, utilizing SPD technology, to various companies.

We expect that other competitors will emerge in the future.

Research and Development

We have been using a 6” width R2R equipment capable of handling the deposition, embossing and lamination steps of the manufacturing process for research and development. We will utilize the 12” width film for the first-generation Smart Window Insert. Larger scale manufacturing is planned at a minimum of 36” width film to address markets including appropriately sized commercial building window inserts, larger format skylights inserts, and many automobile sunroofs. Thereafter, we will develop capability to manufacture DynamicTint film of at least 72” width capability. This will allow us to address the vast majority of window sizes for most applications.

As a result of our research and development efforts, we believe that our EK technology is now, or with additional development will become, usable in a number of commercial products. Such products may include one or more of the following fields: “smart” windows, doors, skylights and partitions; self-dimmable automotive sunroofs, windows, sun visors, and mirrors.

We have devoted most of our financial resources to research and development activities with the goal of producing commercially viable EK products and has developed working samples of our EK technology.

Our main goals in research and development include:

- developing wider ranges of light transmission,
- reducing the voltage required to operate DynamicTint™,
- obtaining data and developing improved materials regarding environmental stability and longevity, and
- quantifying the degree of energy savings expected by users of our technology.

Crown Fiber Optics

On January 3, 2023, we acquired substantially all of the assets (the “Asset Acquisition”) of Amerigen 7 LLC (“Amerigen”), which was engaged in the business of construction of 5G fiber optics infrastructure, for cash consideration of approximately \$0.65 million. The Asset Acquisition included approximately 12 employees, customer contracts, and certain operating liabilities. On December 20, 2022, we incorporated our wholly-owned subsidiary Crown Fiber Optics Corp. (“Crown Fiber Optics”) in Delaware, to own and operate the business acquired from Amerigen.

We are a new entrant in providing contracting services to the fiber optics and telecommunications infrastructure industry throughout the United States. Since our entrance into the construction of fiber optic networks, we have expanded our scope and service offerings organically and through one acquisition. Today, we are focused on providing construction services to the fiber optic industry. We are focused on adding management depth to expand our industry knowledge, to develop strong customer relationships, and to hire and retain a skilled workforce.

Crown Fiber Optics supplies telecommunications providers with a comprehensive portfolio of specialty services, including program management; planning; engineering and design; aerial, and underground fiber construction.

Construction, Maintenance, and Installation Services. Crown Fiber Optics provides a range of construction, maintenance, and installation services, including the placement and splicing of fiber, copper, and coaxial cables. Crown Fiber Optics excavates trenches to place these cables; places related structures, such as poles, anchors, conduits, manholes, cabinets, and closures; places drop lines from main distribution lines to a consumer’s home or business; and maintains and removes these facilities. Crown Fiber Optics provides these services for both telephone companies, internet service providers and cable multiple system operators in connection with the deployment, expansion, or maintenance of new and existing networks. Crown Fiber Optics can also provide tower construction, lines and antenna installation, foundation and equipment pad construction, small cell site placement for wireless carriers, and equipment installation and material fabrication and site testing services. In addition, Crown Fiber Optics provides underground facility locating services for telecommunications providers. Crown Fiber Optics’ underground facility locating services include locating telephone, cable television, power, water, sewer, and gas lines.

Fiber Optics Business Strategy

Capitalize on Long-Term Growth Drivers. Crown Fiber Optics is positioned to benefit from the increased demand for network telecommunications bandwidth that is necessary to ensure reliable video, voice, and data services. Developments in consumer and business applications within the telecommunications industry, including advanced digital and video service offerings, continue to increase demand for greater wireline and wireless network capacity and reliability. Telecommunications network operators are increasingly deploying fiber optic cable technology deeper into their networks and closer to consumers and businesses in order to respond to consumer demand, competitive realities, and public policy support. Additionally, wireless carriers are upgrading their networks and contemplating next generation mobile solutions in response to the significant demand for wireless broadband, driven by the proliferation of smart phones, mobile data devices and other advances in technology. Increasing wireless data traffic and emerging wireless technologies are United States. Furthermore, significant consolidation and merger activity among telecommunications providers could also provide increased demand for our services as networks are integrated.

Selectively Increase Market Share. We believe Crown Fiber Optics' reputation for providing high quality services and the ability to provide those services nationally creates opportunities to expand market share. Crown Fiber Optics' operating structure and multiple points of contact within customer organizations positions it favorably to win new opportunities and maintain strong relationships with its customers.

Crown Fiber Optics recently purchased five micro trenchers to gain a strategic advantage over other companies competing in our market. Micro trenching is a technique to place fiber optic cables underground and is gaining acceptance across multiple markets. Micro trenchers are difficult to obtain as the demand for the equipment is significant. Crown Fiber Optics has a commitment from our equipment vendor for an additional 15 micro trenchers. We believe this advantage will allow it to gain market share and market advantage over our competitors.

Pursue Selective Acquisitions. Crown Fiber Optics may pursue acquisitions that are operationally and financially beneficial as they provide incremental revenue, geographic diversification, and complement existing operations. We generally target companies for acquisition that have defensible leadership positions in their market niches, the opportunity to generate profitability that meets or exceeds industry averages, proven operating histories, sound management and certain clearly identifiable cost synergies.

Fiber Optics Customer Relationships

Crown Fiber Optics has recently established relationships with many leading telecommunications providers, including telephone companies, cable multiple system operators, wireless carriers, and telecommunication equipment and infrastructure providers. Crown Fiber Optics' customer base is primarily concentrated in the Arizona region. We believe that a substantial portion of Crown Fiber Optics' total contract revenues and operating income will continue to be generated from a concentrated group of customers and that the identity and proportion of contract revenues arising from work for top customers will fluctuate.

Crown Fiber Optics performs a significant amount of our services under master service agreements and other contracts that contain customer-specified service requirements. These agreements include discrete pricing for individual tasks. Crown Fiber Optics generally possesses multiple agreements with each of its significant customers. To the extent that such agreements specify exclusivity, there are often exceptions, including the ability of the customer to issue work orders valued above a specified dollar amount to other service providers, the performance of work with the customer's own employees, and the use of other service providers when jointly placing facilities with another utility. In most cases, a customer may terminate an agreement for convenience. Historically, multi-year master service agreements have been awarded primarily through a competitive bidding process; however, occasionally we are able to negotiate extensions to these agreements. Crown Fiber Optics provides the remainder of its services pursuant to contracts for specific projects. These contracts may be long-term (with terms greater than one year) or short-term (with terms less than one year) and often include customary retainage provisions under which the customer may withhold 5% to 10% of the invoiced amounts pending project completion and closeout.

Fiber Optics Cyclicalities and Seasonality

The cyclical nature of the industry Crown Fiber Optics serves affects demand for its services. The capital expenditure and maintenance budgets of Crown Fiber Optics' customers, and the related timing of approvals and seasonal spending patterns, influence its contract revenues and results of operations. Factors affecting Crown Fiber Optics' customers and their capital expenditure budgets include, but are not limited to, overall economic conditions, including the cost of capital, the introduction of new technologies, the customers' debt levels and capital structures, our customers' financial performance, and the customers' positioning and strategic plans. Other factors that may affect Crown Fiber Optics' customers and their capital expenditure budgets include new regulations or regulatory actions impacting the customers' businesses, merger or acquisition activity involving the customers, and the physical maintenance needs of the customers' infrastructure.

Crown Fiber Optics' operations exhibit seasonality and may be impacted by adverse weather changes as it performs a significant portion of work outdoors. Consequently, adverse weather, which is more likely to occur with greater frequency, severity, and duration during the winter, as well as reduced daylight hours, impact Crown Fiber Optics' operations during the fiscal quarters ending in December and March. Additionally, extreme weather conditions such as major or extended winter storms, droughts and tornados, and natural disasters, such as floods, hurricanes, tropical storms, whether as a result of climate change or otherwise, could also impact the demand for our services, or impact our ability to perform our services.

Fiber Optics Competition

The specialty contracting services industry in which we operate is highly fragmented and includes a large number of participants. Crown Fiber Optics competes with several large multinational corporations and numerous regional and privately owned companies. In addition, a portion of Crown Fiber Optics' customers directly perform many of the same services that it provides. Relatively few barriers to entry exist in the markets in which Crown Fiber Optics' operate. As a result, any organization that has adequate financial resources, access to technical expertise, and the necessary equipment may become a competitor and the degree to which an existing competitor participates in the markets that Crown Fiber Optics operates may increase rapidly. The principal competitive factors for Crown Fiber Optics' services include geographic presence, quality of service, worker and general public safety, price, breadth of service offerings, and industry reputation. Crown Fiber Optics believes that it compares favorably to its competitors when evaluated against these factors.

Fiber Optics Subcontractors and Materials

Crown Fiber Optics may contract with subcontractors to perform a significant amount of its work and to manage fluctuations in work volumes and to reduce the amount it expend on fixed assets and working capital. These subcontractors are typically small, privately owned companies that provide their own employees, vehicles, tools and insurance coverage. No individual subcontractor is financially significant to us.

For a majority of the contract services Crown Fiber Optics performs, it is provided the majority of the required materials by its customers. Because Crown Fiber Optics' customers retain the financial and performance risk associated with materials they provide, we do not include the costs associated with those materials in our contract revenues or costs of earned revenues. Under contracts that require Crown Fiber Optics to supply part or all of the required materials, it typically does not depend upon any one source for those materials.

Risk Management and Insurance

Claims arising in Crown Fiber Optics' business generally include workers' compensation claims, various general liability and damage claims, and claims related to motor vehicle collisions, including personal injury and property damage. For claims within our insurance program, we retain the risk of loss, up to certain limits, for matters related to automobile liability, general liability (including damages associated with underground facility locating services), workers' compensation, and employee group health. Additionally, within our aggregate coverage limits and above our base layer of third-party insurance coverage, we have retained the risk of loss at certain levels of exposure. We carefully monitor claims and actively participate with our insurers and our third-party claims administrator in determining claims estimates and adjustments. We accrue the estimated costs of claims as liabilities and include estimates for

claims incurred but not reported. Due to fluctuations in our loss experience from year to year, insurance accruals have varied and can affect our operating margins. Our business could be materially and adversely affected if we experience an increase of insurance claims at certain amounts, or in excess of our coverage limits.

Regulation

Crown Fiber Optics is subject to various federal, state, and local government regulations, including laws and regulations relating to environmental protection, work-place safety, and other business requirements.

Environmental. A significant portion of the work Crown Fiber Optics performs is associated with the underground networks of its customers and it often operates in close proximity to pipelines or underground storage tanks that may contain hazardous substances. Crown Fiber Optics could be subject to potential material liabilities in the event it fails to comply with environmental laws or regulations or if it causes or is responsible for the release of hazardous substances or causes other environmental damages. In addition, failure to comply with environmental laws and regulations could result in significant costs including remediation costs, fines, third-party claims for property damage, loss of use, or personal injury, and, in extreme cases, criminal sanctions.

Workplace Safety. Crown Fiber Optics is subject to the requirements of the federal Occupational Safety and Health Act (“OSHA”) and comparable state statutes that regulate the protection of the health and safety of workers. The failure to comply with OSHA or other workplace safety requirements could result in significant liabilities, fines, penalties, or other enforcement actions and affect our ability to perform the services that we have been contracted to provide to our customers.

Business. Crown Fiber Optics is subject to a number of state and federal laws and regulations, including those related to utility oversight contractor licensing and the operation of Crown Fiber Optic’ fleet. If Crown Fiber Optics is not in compliance with these laws and regulations, it may be unable to perform services for its customers and may also be subject to fines, penalties, and the suspension or revocation of our licenses.

Crown Electrokinetics Employees and Human Capital

We have 46 employees; 38 of the employees are construction, technical and operational personnel, and the rest perform business development, finance, marketing, investor relations, and administrative functions. Our employees have extensive industrial experience in leading technology, ink-based manufacturing and 5G construction companies. We believe that our success is dependent upon, among other things, the services of our senior management, the loss of which could have a material adverse effect upon our prospects. None of our employees are represented by a labor union or covered by a collective bargaining agreement.

As we continue to grow, we will add additional construction, manufacturing engineering, marketing, and administrative personnel.

Corporate Information

Our primary business location is the R&D and Manufacturing facility located at 1110 NE Circle Blvd., Corvallis, OR 97330. We also have an office located at 11601 Wilshire Blvd., Suite 2240, Los Angeles, CA 90025 and a yard located at 12600 S 182nd Pl #10, Gilbert, AZ 85296. Our telephone number is +1 (213) 660-4250, our e-mail address is info@crownek.com, and our Internet website addresses are www.crownek.com and www.crown-fiberoptics.com. We were incorporated in the State of Delaware on April 20, 2015.

Reverse Stock Split

On August 11, 2023, our stockholders approved a proposal at our special meeting of stockholders (the “Special Meeting”) further amending our Amended and Restated Certificate of Incorporation, as amended (the “Certificate of Incorporation”), to effect a reverse stock split of our Common Stock at a ratio between one-for-two (1:2) and one-for-sixty (1:60), without reducing the authorized number of our shares of Common Stock. Following the Special Meeting, our Board of Directors approved a final split ratio of one-for-sixty (1:60). Following such approval, on August 11, 2023, we filed an amendment to the Certificate of Incorporation with the Secretary of State of the State of Delaware to effect the reverse stock split, with an effective time of 11:59 p.m. Eastern Time on August 14, 2023

(the “Reverse Stock Split”). Our Common Stock began trading on Nasdaq on a split-adjusted basis beginning on August 15, 2023. Unless otherwise noted, all share and per share information relating to our Common Stock in this prospectus has been adjusted to reflect the 1-for-60 Reverse Stock Split.

Properties

On March 8, 2016, we entered into a lease agreement with Oregon State University, to lease 1,700 square feet of office and laboratory space located at HP Campus Building 11, 1110 NE Circle Blvd, Corvallis, Oregon, for approximately \$400 monthly. On July 1, 2016, we entered into the first amendment to the lease agreement which increased the monthly lease expense to approximately \$1,200. On October 1, 2017, we entered into a sublease agreement, which provides for additional office space and the monthly lease payment increased to approximately \$1,800. The lease expired on June 30, 2018 and we extended the lease through June 30, 2019. The monthly lease payment increased to approximately \$4,500 for the months ended June 30, 2018 through November 30, 2018, and increased to approximately \$7,550 for the months ended December 31, 2018 through June 30, 2019. On July 1, 2019, we entered into the fourth amendment to our lease with Oregon State University, which extends the lease expiration date to June 30, 2022. On July 1, 2020, we entered into the fifth amendment to our lease with Oregon State University which adjusts the Operating Expense Reimbursement payment due dates from monthly to quarterly, with the payments due in advance on the first of July, October, January and April. Effective July 1, 2020, the quarterly operating expense will be \$23,097. On September 1, 2021, we entered into the seventh amendment which expanded the lease to include approximately 703 square feet of lab space, 576 square feet of cubicle space, 1096 square feet of Highbay lab space, and 376 square feet of High bay storage space in a building commonly known as Building 11. Effective September 1, 2021, the quarterly operating expense will be \$31,647 covering all utility and facility tooling costs. On January 24, 2022, we entered into the eighth amendment which expands the lease to include approximately 703 square feet of lab space, 768 square feet of cubicle space, 2,088 square feet of Highbay lab space, and 376 square feet of High bay storage space in a building commonly known as Building 11. Effective January 24, 2022, the quarterly operating expense will be \$44,252 covering all utility and facility tooling costs. The sublease expires June 30, 2025. On January 20, 2023, we entered into the ninth amendment to our lease with Oregon State University which reduces the amount of cubicle space from 768 square feet to 288 square feet. Effective January 20, 2023 the quarterly operating expense will be \$41,323 covering all utility and facility tooling costs.

On March 4, 2021, we entered into a lease agreement with Hudson 11601 Wilshire, LLC, to lease 3,500 square feet of office space located in Los Angeles, California. The lease term is 39 months and expires on June 30, 2024. The monthly lease expense is as follows:

- Months 1 – 12 — \$18,375
- Months 13 – 24 — \$19,018
- Months 25 – 36 — \$19,683
- Months 37 – 39 — \$20,372

We paid a security deposit totaling \$20,373 at lease inception date.

On May 4, 2021, we entered into a lease agreement with HP Inc. to lease office and lab space located in Corvallis, Oregon. The lease term is 5 years and the lease commencement date is April 1, 2021. The monthly lease expense is \$7,388 and increases by 3% on each anniversary of the lease commencement date. We will pay a security deposit totaling \$8,315. We have the option to extend the lease for an additional 5 years. On January 26, 2022, we entered into the first amendment to our lease with HP Inc., which amends the lease commencement date to January 26, 2022 and the lease expiration date to January 31, 2027.

On October 16, 2023, we entered into a lease agreement with Burnham 182, LLC. to lease yard space located in Phoenix, Arizona. The lease term is 3 years and the lease commencement date is November 1, 2023. The monthly lease expense is \$9,321. We will pay a security deposit totaling \$31,450.

We believe that our facilities are adequate to meet our needs for the immediate future and that, should it be needed, we will be able to secure additional space to accommodate the expansion of our operations.

Legal Proceedings

From time to time, we are also involved in various other claims and legal actions that arise in the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we do not believe that the ultimate resolution of these actions will have a material adverse effect on our financial position, results of operations, liquidity or capital resources.

Future litigation may be necessary to defend ourselves and our partners by determining the scope, enforceability and validity of third party proprietary rights or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on s because of defense and settlement costs, diversion of management resources and other factors.

THE OFFERING

Shares of Common Stock offered by us	Up to 200,000,000 shares of our Common Stock, consisting of Common Stock to the Selling Stockholder with an aggregate value of \$440,000, which assuming a price of \$0.123 per share (which represents the closing price of our Common Stock on Nasdaq on February 2, 2024), would equal 3,577,236 shares of Common Stock (the “Commitment Shares”), and shares of Common Stock that we may sell to the Selling Stockholder, from time to time at our sole discretion, pursuant to the Purchase Agreement, described below.
Common Stock outstanding ⁽¹⁾	30,868,347 shares
Common Stock outstanding after this offering ⁽¹⁾	230,868,347 shares of Common Stock.
Use of proceeds	We will not receive any proceeds from the sale by the Selling Stockholder of the shares of Common Stock being offered by this prospectus. However, we may receive gross proceeds of up to \$45,263,554 from the sale of our Common Stock to the Selling Stockholder under the Purchase Agreement. We will not receive any cash proceeds from the issuance of the Commitment Shares to the Selling Stockholder under the Purchase Agreement. We intend to use any proceeds from the Selling Stockholder that we receive under the Purchase Agreement for working capital, strategic and general corporate purposes. See “ <i>Use of Proceeds</i> ” on page 48 for more information.
Risk factors	An investment in our securities is highly speculative and involves substantial risk. Please carefully consider the risks described under the heading “ <i>Risk Factors</i> ” on page 19 and other information included and incorporated by reference in this prospectus for a discussion of factors to consider before deciding to invest in the securities offered hereby. Additional risks and uncertainties not presently known to us or that we currently deem to be immaterial may also impair our business and operations.
Transfer agent and registrar	The registrar and transfer agent for our Common Stock is VStock Transfer, LLC, located at 18 Lafayette Place Woodmere, New York 11598.
Nasdaq symbol and trading	Our Common Stock is listed on Nasdaq under the symbol “CRKN.”

(1) Unless otherwise indicated, all references in this prospectus to the number of shares of our Common Stock outstanding and the number of shares of our Common Stock to be outstanding after this offering is based on 30,868,347 shares outstanding as of February 2, 2024, excludes:

- 157,779 shares of Common Stock issuable upon the exercise of options of which 143,325 have vested at a weighted average exercise price of \$168.04 per share as of September 30, 2023;
- 1,715,095 shares of Common Stock issuable upon the exercise of warrants of which 1,715,095 are exercisable at a weighted average exercise price of \$19.44 per share as of September 30, 2023;
- 750,000 shares of Common Stock issuable upon the exercise of Series E preferred stock warrants that are exercisable at a weighted average exercise price of \$30.00 per share as of September 30, 2023;
- 7,139 shares of Common Stock issuable upon the vesting of restricted stock units of which 3,344 have vested;
- 745,531 shares of Common Stock issuable upon the conversion of 251 shares of Series A Preferred Stock, 1,443 shares of Series B Preferred Stock, 500,576 shares of Series C Preferred Stock, 4,448 shares of Series F Preferred Stock, 653 shares of Series F-1 Preferred Stock, and 1,153 shares of Series F-2 Preferred Stock;
- 200,205 shares of Common Stock issuable to settle commitment shares as of September 30, 2023.

RISK FACTORS

An investment in any securities offered pursuant to this prospectus and any applicable prospectus supplement is speculative and involves a high degree of risk. You should carefully consider the risks described below, as well as the other information contained in this prospectus, including the risk factors and other information contained in any applicable prospectus supplement, and our financial statements and the related notes and the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations," in our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023, and September 30, 2023 all of which are incorporated by reference herein before deciding whether to invest in our securities. If any of the risks actually occur, our business, results of operations, financial condition, and prospects could be materially adversely affected, the trading price of our Common Stock could decline significantly, and you might lose all or part of your investment.

Risks Related to Our Business

Source and Need for Capital.

As we take steps in the commercialization and marketing of our technology or respond to potential opportunities and/or adverse events, our working capital needs may change. We anticipate that if our cash and cash equivalents are insufficient to satisfy our liquidity requirements, we will require additional funding to sustain our ongoing operations and to continue our research and development activities.

We have funded most of our activities through sales of our securities to investors. Our eventual success and generation of positive cash flow will be dependent upon the extent of commercialization of products using our technology. We can give no assurances that we will generate sufficient cash flows in the future (through sales of our Common Stock, exercise of options and warrants, royalty fees, or otherwise) to satisfy our liquidity requirements or sustain future operations, or that additional funding, if required, will be available when needed or, if available, on favorable terms.

History of Operating Losses.

We have experienced net losses from operations, and we may continue to incur net losses from operations in the future. We have incurred substantial costs and expenses in researching and developing our electrokinetic technology. As of September 30, 2023, we had a cumulative net loss of \$107.7 million since our inception. Our net loss was approximately \$2.9 million for the three months ended September 30, 2023 and \$19.7 million for the nine months ended September 30, 2023. Our net loss was approximately \$3.1 million for the three months ended September 30, 2022 and \$12.2 million for the nine months ended September 30, 2022.

We expect to continue to incur losses from operations and negative cash flows, which raise substantial doubt about our ability to continue as a Going Concern.

We anticipate incurring additional losses until such time, if ever, that we can obtain marketing approval to sell, and then generate significant sales, of our technology that is currently in development. Substantial additional financing will be needed by us to fund our operations and to develop and commercialize our technology. These factors raise substantial doubt about our ability to continue as a going concern.

We will seek to obtain additional capital through the sale of debt or equity financings or other arrangements to fund operations; however, there can be no assurance that we will be able to raise needed capital under acceptable terms, if at all. The sale of additional equity may dilute existing stockholders and newly issued shares may contain senior rights and preferences compared to currently outstanding shares of Common Stock. Issued debt securities may contain covenants and limit our ability to pay dividends or make other distributions to stockholders. If we are unable to obtain such additional financing, future operations would need to be scaled back or discontinued. Due to the uncertainty in our ability to raise capital, we believe that there is substantial doubt in our ability to continue as a going concern.

We may not generate sufficient cash flows to cover our operating expenses.

As noted above, we have incurred recurring losses since inception and expect to continue to incur losses as a result of costs and expenses related to our research and continued development of our technology and our corporate general and administrative expenses. Our limited capital resources and operations to date have been substantially funded

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through sales of our securities. As of September 30, 2023, we had working capital of approximately \$0.1 million, cash of approximately \$2.1 million, shareholders' equity of approximately \$9.3 million and an accumulated deficit of approximately \$107.7 million. In the event that we are unable to generate sufficient cash from our operating activities or raise additional funds, we may be required to delay, reduce or severely curtail our operations or otherwise impede our on-going business efforts, which could have a material adverse effect on our business, operating results, financial condition and long-term prospects.

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our Common Stock. Payment of dividends on our Common Stock is within the discretion of our Board of Directors and will depend upon our future earnings, capital requirements, financial condition and other relevant factors. We do not anticipate declaring or paying any cash dividends on our Common Stock in the foreseeable future.

We currently rely upon our vendors to provide elements of the manufacturing tooling.

We currently depend upon the activities of our vendors to provide certain tooling elements of our manufacturing process. We do not have full control over their processes which may mean risks in the form of delivery timing and quality of tooling components.

Electrokinetic products face intense competition, which could affect our ability to increase our revenues.

The market for electrokinetic products is intensely competitive and we expect competition to increase in the future. We compete based on the functionality and the quality of our product. Many of our current and potential competitors have significantly greater financial, technical, marketing and other resources than we have. In addition, many of our competitors have well-established relationships with our current and potential customers and have extensive knowledge of our industry. If our competitors develop new technologies or new products, improve the functionality or quality of their current products, or reduce their prices, and if we are unable to respond to such competitive developments quickly either because our research and development efforts do not keep pace with our competitors or because of our lack of financial resources, we may be unable to compete effectively.

Declining production of automobiles and real estate could harm our business.

Our commercialization efforts could be negatively impacted if the global production of automobiles and real estate construction declines significantly. If such commercialization is reduced, our revenues, results of operations and financial condition could be negatively impacted.

We are dependent on key personnel.

Our continued success will depend, to a significant extent, on the services of our directors, executive management team, key personnel and certain key scientists. If one or more of these individuals were to leave the company, there is no guarantee that we could replace them with qualified individuals in a timely or economically satisfactory manner or at all. The loss or unavailability of any or all of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which would have a material adverse effect on our business, results of operations and financial conditions.

Dependence on electrokinetic technology.

Because electrokinetic technology is the only technology we work with, our success depends upon the viability of electrokinetic technology which has yet to be fully proven. We have not fully ascertained the performance and long-term reliability of our technology, and therefore there is no guarantee that our technology will be successfully incorporated into all of the products which we are targeting for use of electrokinetic technology. We expect that different product applications for electrokinetic technology will have different performance and reliability specifications. We expect that our licensees will primarily be responsible for reliability testing, but that we may also continue to do reliability testing so that we can more effectively focus our research and development efforts toward constantly improving the performance characteristics and reliability of products using electrokinetic technology.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

Our intellectual property, particularly our proprietary rights in our electrokinetic technology, is critical to our success. We have acquired various patents, and filed other patent applications, for various applications and aspects of our electrokinetic technology. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons generally applicable to patents and their granting and enforcement. In addition, the costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may be expensive. Our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could harm our ability to generate revenues and, as a result, our business and operations.

The extent to which the coronavirus (“COVID-19”) outbreak impacts our business, results of operations and financial condition will depend on future developments, which cannot be predicted.

The COVID-19 pandemic has caused us to modify our business practices (including employee travel, employee work locations, and cancellation of physical participation in meetings, events and conferences), and we may take further actions as may be required by government authorities or that we determine are in the best interests of our employees, customers and business partners. There is no certainty that such measures will be sufficient to mitigate the risks posed by the virus or otherwise be satisfactory to government authorities.

The extent to which COVID-19 impacts our business, results of operations and financial condition will depend on future developments, which are uncertain and cannot be predicted, including, but not limited to, the duration and spread of the outbreak, its severity, the actions to contain the virus or treat its impact, and how quickly and to what extent normal economic and operating conditions can resume. Even after the coronavirus outbreak has subsided, we may continue to experience materially adverse impacts to our business as a result of its global economic impact, including any recession that has occurred or may occur in the future.

Our future growth and success is dependent upon the real estate industry’s willingness to adopt smart glass and specifically our products, especially in the smart glass market which we are targeting with DynamicTint™.

Our growth is highly dependent upon the adoption of smart glass by the real estate industry. Although we anticipate growing demand for our products, there is no guarantee of such future demand, or that our products will remain competitive in the market.

If the market for smart glass in general and our products in particular do not develop as we expect, or develop more slowly than we expect, or if demand for our products decreases in our markets, our business, prospects, financial condition and operating results could be harmed. The market for our products could be affected by numerous factors, such as:

- perceptions about smart glass features, quality, safety, performance and cost;
- competition, including from other types of smart glass or traditional glass;
- the cost premium of smart glass in contrast to traditional glass;
- government regulations and economic incentives;
- reduced construction activity, including as a result of the short and long-term effect of COVID-19; and
- concerns about our future viability.

Our new products and services may not be successful.

We announced our first smart glass product in 2020 and we anticipate launching additional products and services in the future. Existing and new products and services we may launch in the future may not be well received by our business customers, may not help us to generate new business customers, may adversely affect the attrition rate of existing business customers, may increase our business customer acquisition costs and may increase the costs to service our business customers. Any profits we may generate from these or other new products or services may

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be lower than profits generated from our other products and services and may not be sufficient for us to recoup our development or business customer acquisition costs incurred. New products and services may also have lower gross margins, particularly to the extent that they do not fully utilize our existing infrastructure. In addition, new products and services may require increased operational expenses or business customer acquisition costs and present new and difficult technological and intellectual property challenges that may subject us to claims or complaints if business customers experience service disruptions or failures or other quality issues. To the extent our new products and services are not successful, it could have a material adverse effect on our business, financial condition, cash flows or results of operations.

If we are unable to establish and maintain confidence in our long-term business prospects among business customers, analysts and within our industries, then our financial condition, operating results, and business prospects may suffer materially.

Business customers may be less likely to purchase our products if they are not convinced that our business will succeed or that our service and support and other operations will continue in the long term. Similarly, suppliers and other third parties will be less likely to invest time and resources in developing business relationships with us if they are not convinced that its business will succeed. Accordingly, in order to build and maintain its business, we must maintain confidence among business customers, suppliers, analysts, ratings agencies and other parties in our long-term financial viability and business prospects. Maintaining such confidence may be complicated by certain factors, such as our limited operating history, negative press, business customer unfamiliarity with our products, any delays in scaling manufacturing, delivery and service operations to meet demand, competition and uncertainty regarding the future of smart glass or our other products and services, our quarterly production and sales performance compared with market expectations, and any other negative publicity related to us. Many of these factors are largely outside our control, and any negative perceptions about our long-term business prospects, even if exaggerated or unfounded, such as speculation regarding the sufficiency or stability of our management team, could harm our business and make it more difficult to raise additional funds if needed.

Our operating and financial results forecast relies in large part upon assumptions and analyses developed by us. If these assumptions or analyses prove to be incorrect, our actual operating results may be materially different from our forecasted results.

Our projected financial and operating information reflect current estimates of future performance. Whether actual operating and financial results and business developments will be consistent with our expectations and assumptions as reflected in our forecasts depends on a number of factors, many of which are outside our control, including, but not limited to:

- market acceptance of our products;
- success and timing of development activity;
- competition, including from established and future competitors;
- our ability to manage our growth;
- our ability to satisfy the manufacturing and production demands associated with customer orders;
- whether we can manage relationships with key suppliers;
- our ability to retain existing key management, integrate recent hires and attract, retain and motivate qualified personnel; and
- the overall strength and stability of domestic and international economies.

Unfavorable changes in any of these or other factors, most of which are beyond our control, could materially and adversely affect our business, results of operations and financial results.

Disruption of supply or shortage of materials, in particular for glass, could harm our business.

Our business is dependent on the continued supply of certain materials, including glass, acrylic, as well as other chemicals such as indium tin oxide, certain pigments and polyethylene for use in our products, and we may experience a sustained interruption in the supply or shortage of such materials. Any such supply interruption or shortage could materially and negatively impact our business, prospects, financial condition and operating results. The available supply may be unstable, depending on market conditions and global demand for these materials and could adversely affect our business and operating results.

Increases in cost of materials could harm our business.

Certain materials necessary to produce our products, including glass, acrylic, as well as other chemicals such as indium tin oxide, certain pigments and polyethylene, are sourced from a limited number of suppliers. Any disruption in the supply of materials from such suppliers could disrupt production of our products until such time as a different supplier is fully qualified. As a result, we may experience an increase in costs or inability to meet customer demand. Furthermore, shortages or increased demand of such materials and other economic conditions may cause us to experience significant increases in freight charges and the cost of materials. Substantial increases in the prices for our materials or prices charged to us would increase our operating costs and could reduce our margins if we cannot recoup the increased costs through increased product prices. Any attempts to increase product prices in response to increased material costs could result in cancellations of product orders and reservations and therefore materially and adversely affect our brand, image, business, prospects and operating results.

We may be unable to meet our growing production demand, product sales, delivery plans and servicing needs, or accurately project and manage this growth nationwide or internationally, which could harm our business and prospects.

In the past, we've experienced, and we may experience in the future, delays or other complications in the design, manufacture, launch, and production ramp of our products, including DynamicTint™ or may not realize our manufacturing cost targets, which could harm our brand, business, prospects, financial condition and operating results. Our manufacturing facility may require significant cash investments and management resources for these plans, and we may not meet our expectations with respect to additional sales of our products. In addition, we've introduced in the past, and we may introduce in the future, new manufacturing technologies, techniques and processes. There is no guarantee that we will be able to successfully and timely introduce and scale any such new processes or features.

Our production plans for our products are based on many key assumptions, including:

- **Ability to utilize manufacturing capacity to achieve the planned production yield.** We assume that we will be able to sustain and further expand our high-volume production and our products at our Corvallis and Salem facilities, including with the introduction of new product features, without exceeding our projected costs and on our projected timeline; and
- **Suppliers' ability to support our needs.** We assume that we will be able to maintain suppliers for the necessary components on terms and conditions that are acceptable to us and that we will be able to obtain high-quality components on a timely basis and in the necessary quantities to support high-volume production.

If one or both of the foregoing assumptions turns out to be incorrect, our ability to meet our projections, including for production, on time and at volumes and prices that are profitable, the demand for and deliveries of our products, as well as our business, prospects, operating results and financial condition, may be materially and adversely impacted.

Concurrent with developing, launching and ramping our products, our success will depend on our ability to continue to significantly increase our sales, deliveries, and servicing, while allocating our available resources among multiple products simultaneously. Although we have a plan for selling and delivering increased volumes of our products, we have limited experience developing, manufacturing, selling, servicing and allocating our available resources at the scale to which we expect to grow. If we are unable to realize our plans, our brand, business, prospects, financial condition and operating results could be materially damaged.

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We continuously evaluate, and as appropriate evolve, our operations and product offerings in order to maximize our reach and optimize our costs. However, there is no guarantee that each step in our evolving strategy will be perceived as intended by developers, tenants, and the construction industry. Likewise, as we develop and grow our products and services in North America, and possibly worldwide, our success will depend on our ability to correctly forecast demand in different markets.

We may also face difficulties meeting our sales and delivery goals in both existing markets as well as new markets into which we expand. There is no assurance that we will be able to ramp our business to meet our sales and delivery targets in North America or even globally, or that our projections on which such targets are based will prove accurate. This ongoing expansion in North America and potentially internationally, which includes planned entry into markets in which we have limited or no experience selling, delivering, and servicing our products at scale, and which may pose legal, regulatory, labor, cultural and political challenges that we have not previously encountered, may not have the desired effect of increasing sales and expanding our brand presence to the degree we are anticipating. Moreover, we may not be successful in managing our national and future international operations if we are unable to avoid cost overruns and other unexpected operating costs, adapt our products and conduct our operations to meet local requirements and regulations, implement required local infrastructure, systems and processes, and find and hire as needed additional sales, service, construction and administrative personnel. If we fail to manage our growth effectively, it could result in negative publicity and damage to our brand and have a material adverse effect on our business, prospects, financial condition and operating results.

We rely on complex machinery for our operations, and production involves a significant degree of risk and uncertainty in terms of operational performance and costs.

We rely heavily on complex machinery for our operations and the production of our products that suffers unexpected malfunctions from time to time and requires repairs and spare parts to resume operations, which may not be available when needed. Unexpected malfunctions of our production equipment may significantly affect intended operational efficiency. In addition, the operational performance and costs associated with this equipment can be difficult to predict and may be influenced by factors outside of our control, such as, but not limited to, failures by suppliers to deliver necessary machinery components in a timely manner and at prices and volumes acceptable to us, which could have a material adverse effect on our operational performance, cash flows, financial condition or prospects.

If our products fail to perform as expected, our ability to develop, market and sell our products and services could be harmed.

If our products contain defects in design and manufacture that cause them not to perform as expected or that require repair, or certain features of our products take longer than expected to become enabled or are legally restricted, our ability to develop, sell, and service our products could be harmed. Although we attempt to remedy any issues we observe in our products as effectively and rapidly as possible, such efforts may not be timely, may hamper production or may not be to the satisfaction of our business customers. While we perform extensive internal testing on the products we manufacture, we currently have a limited frame of reference by which to evaluate detailed long-term quality, reliability, durability and performance characteristics of our products. There can be no assurance that we will be able to detect and fix any defects in our products prior to their sale to business customers.

Our inability to provide products or services in a timely manner, legal restrictions on product features, or defects in our products or services, including products and services of third parties that we incorporate into our offerings, could adversely affect our reputation, result in delivery delays, product recalls, product liability claims, and significant warranty and other expenses, and subject us to claims or litigation. In addition, our inability to meet business customers' expectations with respect to our products or services could increase attrition rates or affect our ability to generate new business customers and thereby have a material adverse effect on our business, financial condition, cash flow or results of operations.

We may choose to or be compelled to undertake product recalls or take other similar actions, which could adversely affect our brand image and financial performance.

Any product recall with respect to our products may result in adverse publicity, damage our brand and adversely affect our business, prospects, operating results and financial condition. In the future, we may at various times, voluntarily or involuntarily, initiate a recall if any of our products prove to be defective or noncompliant with applicable laws

and regulations. Such recalls, whether voluntary or involuntary or caused by systems or components engineered or manufactured by us or our suppliers, could involve significant expense and could adversely affect our brand image in our target markets, as well as our business, prospects, financial condition and results of operations.

We must successfully maintain and upgrade our information technology systems.

We rely on various information technology systems to manage our operations, including general, non-proprietary information technology systems in our facility and proprietary information technology systems in our products. As necessary, we implement modifications and upgrades to these systems, and replace certain of our legacy systems with successor systems with new functionality.

The technology and capital equipment we employ may become old or obsolete, which could require significant capital expenditures for upkeep and upgrade over time. Our products and services interact with the hardware and software technology of systems and devices located at our business customers' property. We may be required to implement new technologies or adapt existing technologies in response to changing market conditions, business customer preferences, industry standards or inability to secure necessary intellectual property licenses, which could require significant capital expenditures. Our inability to adapt to changing technologies, market conditions or subscriber preferences in a timely manner could have a material adverse effect on our business, financial condition, cash flows or results of operations.

There are inherent costs and risks associated with modifying or changing these systems and implementing new systems, including potential disruption of our internal control structure, substantial capital expenditures, additional administration and operating expenses, retention of sufficiently skilled personnel to implement and operate the new systems, demands on management time and other risks and costs of delays or difficulties in transitioning to new systems or of integrating new systems into our current systems. While management seeks to identify and remediate issues, we can provide no assurance that our identification and remediation efforts will be successful or that we will not encounter additional issues as we complete the implementation of these and other systems. In addition, our information technology system implementations may not result in productivity improvements at a level that outweighs the costs of implementation, or at all. The implementation of new information technology systems may also cause disruptions in our business operations and have an adverse effect on our business, cash flows and operations.

We rely on certain third-party providers of licensed software and services integral to the operations of our business.

Certain aspects of the operation of our business may depend on third-party software and service providers. With regard to licensed software technology, we may become dependent upon the ability of third parties to maintain, enhance or develop their software and services on a timely and cost-effective basis, to meet industry technological standards and innovations to deliver software and services that are free of defects or security vulnerabilities, and to ensure their software and services are free from disruptions or interruptions. Further, these third-party services and software licenses may not always be available to us on commercially reasonable terms or at all.

If the third-party software or services become obsolete, fail to function properly, are incompatible with future versions of our products or services, or are defective or otherwise fail to address our needs, there is no assurance that we would be able to replace the functionality provided by any future third-party software or services with software or services from alternative providers. Any of these factors could have a material adverse effect on our financial condition, cash flows or results of operations.

Any unauthorized control or manipulation of our products' systems could result in loss of confidence in us and our products and harm our business.

Our products contain complex information technology systems. We have designed, implemented and tested security measures intended to prevent unauthorized access to our information technology networks, our products and our systems. However, hackers may attempt to gain unauthorized access to modify, alter and use such networks, products and systems to gain control of, or to change, our products' functionality, user interface and performance characteristics, or to gain access to data stored in or generated by our products. We encourage reporting of potential vulnerabilities in the security of our products via our security vulnerability reporting policy, and we aim to remedy any reported and verified vulnerability. However, there can be no assurance that vulnerabilities will not be exploited in the future before they can be identified, or that our remediation efforts are or will be successful.

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Any unauthorized access to or control of our products or their systems or any loss of data could result in legal claims or proceedings. In addition, regardless of their veracity, reports of unauthorized access to our products, their systems or data, as well as other factors that may result in the perception that our products, their systems or data are capable of being “hacked,” could negatively affect our brand and harm our business, prospects, financial condition and operating results.

If our security controls are breached or unauthorized or inadvertent access to business customers’ information or other data are otherwise obtained, our services may be perceived as insecure, we may lose existing business customers or fail to attract new business customers, our business may be harmed, and we may incur significant liabilities.

Our future products may involve the collection, storage, transmission and processing of personal, payment, credit and other confidential and private information of our business customers, and may in certain cases permit access to our business customers’ property or help secure them. Such future products that may present privacy and data risks may be subject to privacy and data protection laws and regulations. We also maintain and process other confidential and proprietary information in our business, including our employees’ and contractors’ personal information and confidential business information. We rely on proprietary and commercially available systems, software, tools and monitoring to protect against unauthorized use or access of the information we process and maintain. Our services and the networks and information systems we utilize in our business are at risk for breaches as a result of third-party action, employee, vendor or partner error, malfeasance, or other factors. For example, we may experience instances of our employees, contractors and other third parties improperly accessing our and/or our business customers’ systems and information in violation of our internal policies and procedures.

Criminals and other nefarious actors may use increasingly sophisticated methods, including cyberattacks, phishing, social engineering and other illicit acts to capture, access or alter various types of information, to engage in illegal activities such as fraud and identity theft, and to expose and exploit potential security and privacy vulnerabilities in corporate systems and websites. Unauthorized intrusion into the portions of our systems and networks and data storage devices that process and store business customers’ confidential and private information, the loss of such information or the deployment of malware or other harmful code to our services or our networks or systems may result in negative consequences, including the actual or alleged malfunction of our products or services. In addition, third parties, including our partners and vendors, could also be sources of security risks to us in the event of a failure of their own security systems and infrastructure. The threats we face continue to evolve and are difficult to predict due to advances in computer capabilities, new discoveries in the field of cryptography and new and sophisticated methods used by criminals. There can be no assurances that our defensive measures will prevent cyber-attacks or that we will discover network or system intrusions or other breaches on a timely basis or at all. We cannot be certain that we will not suffer a compromise or breach of the technology protecting the systems or networks that house or access our products and services or on which our or our partners or vendors process or store personal information or other sensitive information or data, or that any such incident will not be believed or reported to have occurred. Any such actual or perceived compromises or breaches to systems, or unauthorized access to, or acquisition or loss of, data, whether suffered by us, our partners or vendors or other third parties, whether as a result of employee error or malfeasance or otherwise, could harm our business. They could, for example, cause interruptions in operations, loss of data, loss of confidence in our services and products and damage to our reputation and could limit the adoption of our services and products. They could also subject us to costs, regulatory investigations and orders, litigation, contract damages, indemnity demands and other liabilities and materially and adversely affect our business customer base, sales, revenue, and profits. Any of these could, in turn, have a material adverse impact on our business, financial condition, cash flows or results of operations.

Further, if a high profile security breach occurs with respect to another provider of smart glass, our existing and potential business customers may lose trust in the security of our services or in smart glass generally, which could adversely impact our ability to retain existing business customers or attract new ones. Even in the absence of any security breach, business customers’ concerns about security, privacy or data protection may deter them from using our service. Our insurance policies covering errors and omissions and certain security and privacy damages and claim expenses may not be sufficient to compensate for all potential liability. Although we maintain cyber liability insurance, we cannot be certain that our insurance coverage will be adequate for liabilities actually incurred or that insurance will continue to be available to us on economically reasonable terms, or at all.

Our products and our website, systems, and data we maintain may be subject to intentional disruption, other security incidents, or alleged violations of laws, regulations, or other obligations relating to data handling that could result in liability and adversely impact our reputation and future sales.

We may face significant challenges with respect to information security and maintaining the security and integrity of our systems and other systems used in our business, as well as with respect to the data stored on or processed by these systems. Advances in technology, an increased level of sophistication, and an increased level of expertise of hackers, new discoveries in the field of cryptography or others can result in a compromise or breach of the systems used in its business or of security measures used in our business to protect confidential information, personal information, and other data.

The availability and effectiveness of our products, and our ability to conduct our business and operations, depend on the continued operation of information technology and communications systems, some of which we have yet to develop or otherwise obtain the ability to use. Systems used in our business, including data centers and other information technology systems, will be vulnerable to damage or interruption. Such systems could also be subject to break-ins, sabotage and intentional acts of vandalism, as well as disruptions and security incidents as a result of non-technical issues, including intentional or inadvertent acts or omissions by employees, service providers, or others. We anticipate using outsourced service providers to help provide certain services, and any such outsourced service providers face similar security and system disruption risks as us. Some of the systems used in our business will not be fully redundant, and our disaster recovery planning cannot account for all eventualities. Any data security incidents or other disruptions to any data centers or other systems used in our business could result in lengthy interruptions in our service.

Our products and services are subject to substantial regulations, which are evolving, and unfavorable changes or failure by us to comply with these regulations could substantially harm its business and operating results.

Smart glass is subject to substantial regulation under international, federal, state, and local laws. We incur significant costs in complying with these regulations and may be required to incur additional costs to comply with any changes to such regulations, and any failures to comply could result in significant expenses, delays, or fines. We may become subject to laws and regulations applicable to the supply, manufacture, import, sale and service of smart glass internationally. For example, in countries outside of the U.S., we may be required to meet standards relating to safety that are often materially different from requirements in the U.S., thus resulting in additional investment into the products and systems to ensure regulatory compliance in those countries. This process may include official review and certification of our products by foreign regulatory agencies prior to market entry, as well as compliance with foreign reporting and recall management systems requirements.

We are subject to various government regulations that could impose substantial costs upon us and negatively impact our ability to operate our manufacturing facility.

As a manufacturing company, including with respect to its facility in Corvallis, Oregon, we are and will be subject to complex environmental, manufacturing, health and safety laws and regulations, including laws relating to the use, handling, storage, recycling, disposal and human exposure to hazardous materials. The costs of compliance, including remediating contamination if any is found on our properties and any changes to our operations mandated by new or amended laws, may be significant. We may also face unexpected delays in obtaining permits and approvals required by such laws in connection with its manufacturing facility, which would hinder our operation of this and future facilities. Such costs and delays may adversely impact our business prospects and operating results. Furthermore, any violations of these laws may result in substantial fines and penalties, remediation costs, third party damages, or a suspension or cessation of our operations. We may also be subject to anti-corruption, anti-bribery, anti-money laundering, financial and economic sanctions, and similar laws. Non-compliance with such laws can subject us to administrative, civil, and criminal fines and penalties, collateral consequences, remedial measures and legal expenses, all of which could adversely affect our business, results of operations, financial condition and reputation.

There may be laws in jurisdictions we have not yet entered or laws we are unaware of in jurisdictions we have entered that may restrict our sales or other business practices. The laws in this area can be complex, difficult to interpret and may change over time. Continued regulatory limitations and other obstacles that may interfere with our ability to commercialize our products could have a negative and material impact on our business, prospects, financial condition, and results of operations.

Many of our products must comply with local building codes and ordinances, and failure of our products to comply with such codes and ordinances may have an adverse effect on its business.

Many of our products must comply with local building codes and ordinances. Building codes may also affect the products our customers are allowed to use, and, consequently, changes in building codes may also affect the sale of our products. These codes and ordinances are subject to future government review and interpretation. If our products fail to comply with such local building codes or ordinances, our ability to market and sell such products would be impaired. Also, should these codes and ordinances be amended or expanded, or should new laws and regulations be enacted, we could incur additional costs or become subject to requirements or restrictions that require us to modify our products or adversely affect our ability to market and sell our products. If our products do not adequately or quickly adapt to building standards, we may lose market share to competitors, which would adversely affect our business, results of operation, financial condition, and cash flows. Furthermore, failure of our products to comply with such codes or ordinances could subject it to negative publicity or damage its reputation.

Compliance with the regulations of the U.S. Occupational Safety and Health Administration (“OSHA”) can be costly, and non-compliance with such requirements may result in potentially significant monetary penalties, operational delays, negative publicity and adverse effect on our financial condition.

Our operations are subject to regulation under OSHA and other state and local laws and regulations. OSHA establishes certain employer responsibilities, including maintenance of a workplace free of recognized hazards likely to cause death or serious injury, compliance with standards promulgated by the applicable regulatory authorities and various recordkeeping, disclosure and procedural requirements. Changes to OSHA requirements, or stricter interpretation or enforcement of existing laws or regulations, could result in increased costs. If we fail to comply with applicable OSHA regulations, even if no work-related serious injury or death occurs, we may be subject to civil or criminal enforcement and be required to pay substantial penalties, incur significant capital expenditures or suspend or limit operations. Any such accidents, citations, violations, injuries or failure to comply with industry best practices may subject us to adverse publicity, damage our reputation and competitive position and adversely affect our business.

We have incurred, and we will continue to incur, capital and operating expenditures and other costs in the ordinary course of business in complying with OSHA and other state, local and foreign laws and regulations. While we have invested, and we will continue to invest, substantial resources in worker health and safety programs, there can be no assurance that we will avoid significant liability exposure. Personal injury claims for damages, including for bodily injury or loss of life, could result in substantial costs and liabilities, which could materially and adversely affect our financial condition, results of operations or cash flows. In addition, if our safety record were to substantially deteriorate, or if we suffered substantial penalties or criminal prosecution for violation of health and safety regulations, business customers could cancel existing contracts and not award future business to us, which could materially adversely affect our liquidity, cash flows and results of operations.

We are subject to labor and employment laws and regulations, which could increase our costs and restrict our operations in the future.

Our business is subject to a variety of employment laws and regulations and may become subject to additional requirements in the future. Although we believe we are in material compliance with applicable employment laws and regulations, in the event of a change in requirements, we may be required to modify our operations or to utilize resources to maintain compliance with such laws and regulations. Moreover, we may be subject to various employment-related claims, such as individual or class actions or government enforcement actions relating to alleged employment discrimination, employee classification and related withholding, wage-hour disputes, labor standards or healthcare and benefit issues. Our failure to comply with applicable employment laws and regulations and related legal actions against us may affect our ability to compete or have a material adverse effect on our business, financial condition, cash flows or results of operations.

We may fail to obtain or maintain necessary licenses or otherwise fail to comply with applicable laws and regulations.

Our business focuses on contracts and transactions with business customers and therefore is subject to a variety of laws, regulations and licensing requirements that govern our interactions with business customers, including those pertaining to privacy and data security, business customer financial transactions and warranties. Our business may become subject to additional such requirements in the future. In certain jurisdictions, we are also required to obtain

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licenses or permits to comply with standards governing marketing and sales efforts, servicing of business customers, monitoring station employee selection and training and to meet certain standards in the conduct of our business. These laws and regulations are dynamic and subject to potentially differing interpretations, and various legislative and regulatory bodies may expand current laws or regulations or enact new laws and regulations regarding these matters. We strive to comply with all applicable laws and regulations relating to our interactions with business customers. It is possible, however, that these requirements may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our practices. Our non-compliance with any such law or regulations could also expose us to claims, proceedings, litigation and investigations by private parties and regulatory authorities, as well as substantial fines and negative publicity, each of which may materially and adversely affect our business. Delays in obtaining, or failing to obtain, approvals or rights, such as permitting, interconnection, or land usage approvals or rights, could affect our business customers' builds. We may incur significant expenses to comply with such laws and regulations, and increased regulation of matters relating to our interactions with business customers could require us to modify our operations and incur significant additional expenses, which could have an adverse effect on our business, financial condition and results of operations. If we expand the scope of our products or services or our operations in new markets, we may be required to obtain additional licenses and otherwise maintain compliance with additional laws, regulations or licensing requirements.

Changes in these laws or regulations or their interpretation, as well as new laws, regulations or licensing requirements which may be enacted, could dramatically affect how we do business, acquire business customers, and manage and use information we collect from and about current and prospective customers and the costs associated therewith. In addition, federal, state and local governmental authorities have considered, and may in the future consider, implementing consumer protection rules and regulations, which could impose significant constraints on our sales channels.

We are subject to requirements relating to environmental and safety regulations and environmental remediation matters which could adversely affect its business, results of operation and reputation.

We are subject to federal, state and local environmental laws and regulations governing, among other things, solid and hazardous waste storage, treatment and disposal, and remediation of releases of hazardous materials. Our suppliers are also subject to federal, state and local environmental laws and regulations, and their use of hazardous materials may adversely impact their operations and the availability of raw materials. While we adapt our manufacturing and distribution processes to the environmental control standards of regulatory authorities, we cannot completely eliminate the risk of accidental contamination or injury from hazardous or regulated materials, including injury of its employees, individuals who handle its products, or others who claim to have been exposed to our products, nor can we completely eliminate the unanticipated interruption or suspension of operations at its facilities due to such events. We may be held liable for significant damages or fines in the event of contamination or injury, and such assessed damages or fines could have an adverse effect on its financial performance and results of operations.

There are capital, operating and other costs associated with compliance with these environmental laws and regulations. Environmental laws and regulations may become more stringent in the future, which could increase costs of compliance or require us to manufacture with alternative technologies and materials. Non-compliance with such regulations may include litigation, regulation, fines, increased insurance premiums, mandates to temporarily halt production, workers' compensation claims, or other actions that impact the company brand, finances, or ability to operate.

Our insurance strategy may not be adequate to protect us from all business risks.

We may be subject, in the ordinary course of business, to losses resulting from products liability, accidents, acts of God and other claims against us, for which we may have no insurance coverage. A loss that is uninsured or which exceeds policy limits may require us to pay substantial amounts, which could adversely affect our financial condition and operating results.

We are subject to all of the ordinary course operating hazards and risks that may come with the provision of our products and services and business operations. In addition to contractual provisions limiting our liability to business customers and third parties, we maintain insurance policies in such amounts and with such coverage and deductibles as required by law and that we believe are reasonable and prudent. Nevertheless, such insurance may not be adequate to protect us from all the liabilities and expenses that may arise from claims for personal injury, death or property damage arising in the ordinary course of our business and current levels of insurance may not be able to be maintained or be available at economical prices. If a significant liability claim is brought against us that is not covered by insurance,

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then we may have to pay the claim with our own funds, which could have a material adverse effect on our business, financial condition, cash flows or results of operations. We may not be able to secure additional product liability insurance coverage on commercially acceptable terms or at reasonable costs when needed, particularly if we do face liability for our products and are forced to make a claim under our policy.

Our current and future warranty reserves may be insufficient to cover future warranty claims which could adversely affect our financial performance.

If our warranty reserves are inadequate to cover future warranty claims on our products, our business, prospects, financial condition and operating results could be materially and adversely affected. We evaluate warranty reserves on an ongoing basis and record liabilities for matters in which losses are probable and the amount of loss can be reasonably estimated.

Our business may be adversely affected by any disruptions caused by union activities.

Although our employees are currently not unionized and we have not experienced any work stoppages since our inception, it is not uncommon for employees at manufacturing companies to belong to a union, which can result in higher employee costs and increased risk of work stoppages. Although we work diligently to provide the best possible work environment for our employees, our employees may decide to join or seek recognition to form a labor union in the future, or we may be required to become a union signatory. If a work stoppage occurs, it could delay the manufacture and sale of our products and have a material adverse effect on our business, prospects, operating results or financial condition.

Adverse developments in the credit markets may impair our ability to secure debt financing.

In past economic downturns, such as the financial crisis in the United States that began in mid-2007 and during other times of extreme market volatility, many commercial banks and other financial institutions stopped lending or significantly curtailed their lending activity. In addition, in an effort to stem losses and reduce their exposure to segments of the economy deemed to be high risk, some financial institutions limited routine refinancing and loan modification transactions and even reviewed the terms of existing facilities to identify bases for accelerating the maturity of existing lending facilities. The United States and global economies suffered dramatic downturns as a result of COVID-19, a deterioration in the credit markets and related financial crisis, as well as a variety of other factors including, among other things, extreme volatility in security prices, severely diminished liquidity and credit availability, ratings downgrades of certain investments and declining valuations of others. If these conditions recur or persist, it may be difficult for us to obtain desired financing to finance the growth of our investments on acceptable economic terms, or at all.

COVID-19 has, and until fully resolved could again, result in, among other things, increased draws by borrowers on revolving lines of credit and increased requests by borrowers for amendments, modifications and waivers of their credit agreements to avoid default or change payment terms, increased defaults by such borrowers and/or increased difficulty in obtaining refinancing at the maturity dates of their loans. The duration and effectiveness of responsive measures implemented by governments and central banks cannot be predicted. The commencement, continuation, or cessation of government and central bank policies and economic stimulus programs, including changes in monetary policy involving interest rate adjustments or governmental policies, may contribute to the development of or result in an increase in market volatility, illiquidity and other adverse effects that could negatively impact the credit markets and us.

If we are unable to consummate credit facilities on commercially reasonable terms, our liquidity may be reduced significantly. If we are unable to repay amounts outstanding under any facility we may enter into and are declared in default or are unable to renew or refinance any such facility, it would limit our ability to initiate significant originations or to operate our business in the normal course. These situations may arise due to circumstances that we may be unable to control, such as inaccessibility of the credit markets, a severe decline in the value of the U.S. dollar, a further economic downturn or an operational problem that affects third parties or us, and could materially damage our business. Moreover, we are unable to predict when economic and market conditions may become more favorable. Even if such conditions improve broadly and significantly over the long term, adverse conditions in particular sectors of the financial markets could adversely impact our business.

Loss of a major customer could result in a decrease in our future sales and earnings.

We anticipate that a limited number of customers in any given period may account for a substantial portion of our total net revenue for the foreseeable future. The business risks associated with this concentration, including increased credit risks for these and other customers and the possibility of related bad debt write-offs, could negatively affect our margins and profits. Additionally, the loss of a major customer, whether through competition or consolidation, or a disruption in sales to such a customer, could result in a decrease of our future sales and earnings.

If we are unable to achieve our targeted manufacturing costs for our products, our financial condition and operating results will suffer.

While we are continuing to and expect in the future to realize cost reductions by both us and our suppliers, including through increased production, there is no guarantee we will be able to achieve sufficient cost savings to reach our gross margin and profitability goals, or our other financial targets. We incur significant costs related to procuring the materials required to manufacture our products and compensating our personnel. If our efforts to continue to decrease manufacturing costs are not successful, we may incur substantial costs or cost overruns in utilizing and increasing the production capability of our manufacturing facility. Many of the factors that impact our manufacturing costs are beyond our control, such as potential increases in the costs of our materials and components. If we are unable to continue to control and reduce our manufacturing costs, our operating results, business and prospects will be harmed.

We are exposed to fluctuations in currency exchange rates, which could affect our financial results.

Foreign exchange rates are influenced by many factors outside of our control, including but not limited to: changing supply and demand for a particular currency, monetary policies of governments (including exchange-control programs, restrictions on local exchanges or markets and limitations on foreign investment in a country or an investment by residents of a country in other countries), changes in balances of payments and trade, trade restrictions and currency devaluations and revaluations. The resulting fluctuations in the exchange rates for the other currencies could have an adverse effect on our financial condition and results of operations.

We are subject to collection risks.

We may face normal collection risks with business customers and suppliers. If we fail to collect from our business customers, our business and operating results could be adversely affected.

Future transactions could pose risks.

We frequently evaluate strategic opportunities both within and outside our existing lines of business. We expect from time to time to pursue additional business opportunities and may decide to eliminate or acquire certain businesses, products or services. There are various risks and uncertainties associated with potential acquisitions and divestitures, including: (i) availability of financing; (ii) difficulties related to integrating previously separate businesses into a single unit, including product and service offerings, distribution and operational capabilities and business cultures; (iii) general business disruption; (iv) managing the integration process; (v) diversion of management's attention from day-to-day operations; (vi) assumption of costs and liabilities of an acquired business, including unforeseen or contingent liabilities or liabilities in excess of the amounts estimated; (vii) failure to realize anticipated benefits and synergies, such as cost savings and revenue enhancements; (viii) potentially substantial costs and expenses associated with acquisitions and dispositions; (ix) failure to retain and motivate key employees; and (x) difficulties in applying our internal control over financial reporting and disclosure controls and procedures to an acquired business. Any or all of these risks and uncertainties, individually or collectively, could have material adverse effect on our business, financial condition, cash flow or results of operations. We can offer no assurance that any such strategic opportunities will prove to be successful. Among other negative effects, our pursuit of such opportunities could cause our cost of investment in new business customers to grow at a faster rate than our recurring revenue and fees collected at the time of sale. Additionally, any new product or service offerings could require developmental investments or have higher cost structures than our current arrangements, which could reduce operating margins and require more working capital.

Crown Fiber Optics is dependent on the communications industry and may be susceptible to the risks associated with it, which could materially adversely affect its business, financial position or results of operations.

As the owner, lessor and provider of communications services and distribution systems serving the communications industry, Crown Fiber Optics is impacted by the risks associated with the communications industry. Therefore, our success is to some degree dependent on the communications industry, which could be adversely affected by economic conditions in general, changes in consumer trends and preferences, changes in communications technology designed to enhance the efficiency of communications distribution systems (including lit fiber networks and wireless equipment), and other factors over which we and our tenants have no control. As we are subject to risks inherent in substantial investments in a single industry, a decrease in the communications business or development and implementation of any such new technologies would likely have an adverse effect on our revenues.

Any failure of Crown Fiber Optics' physical infrastructure or services could lead to significant costs and disruptions.

Crown Fiber Optics' business depends on providing customers with highly reliable service. The services provided are subject to failure resulting from numerous factors, including human error, power loss, improper maintenance, physical or electronic security breaches, fire, earthquake, hurricane, flood and other natural disasters, water damage, the effect of war, terrorism and any related conflicts or similar events worldwide, and sabotage and vandalism. Problems within Crown Fiber Optics' networks or facilities, whether within our control or the control of third-party providers, could result in service interruptions or equipment damage. We may not be able to efficiently upgrade or change Crown Fiber Optics' networks or facilities to meet new demands without incurring significant costs that we may not be able to pass on to customers. Given the service guarantees that may be included in Crown Fiber Optics' agreements with customers, such disruptions could result in customer credits; however, we cannot assume that customers will accept these credits as compensation in the future, and we may face additional liability or loss of customers.

Risks Related to our Common Stock

If the trading price of our Common Stock fails to comply with the continued listing requirements of the Nasdaq Capital Market, we would face possible delisting, which would result in a limited public market for our Common Stock and make obtaining future debt or equity financing more difficult for us.

Companies listed on Nasdaq are subject to delisting for, among other things, failure to maintain a minimum closing bid price of \$1.00 per share for 30 consecutive business days. On October 19, 2023, we received a letter from Nasdaq indicating that for at least the previous 30 consecutive business days, the closing bid price of our Common Stock fell below the minimum \$1.00 per share requirement pursuant to Nasdaq Listing Rule 5550(a)(2) and 5810(c)(3)(A) (the "Nasdaq Listing Rules").

While the notification had no immediate effect on the listing of our Common Stock on Nasdaq, in accordance with the Nasdaq Listing Rules, we have been provided an initial period of 180 calendar days from the date of notification, or until April 16, 2024, to regain compliance with the minimum bid price requirement, during which time our Common Stock continued to trade on Nasdaq. The letter states that the Nasdaq staff will provide written notification that we have achieved compliance with the Nasdaq Listing Rules if at any time before April 16, 2024, the bid price of our Common Stock closes at \$1.00 per share or more for a minimum of ten (10) consecutive business days.

If we do not regain compliance with the Nasdaq Listing Rules by April 16, 2024, we may be eligible for an additional 180 calendar day compliance period. To qualify, we will be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the rule regarding bid price, and will need to provide written notice of our intention to cure the deficiency during the second compliance period, for example, by effecting a reverse stock split, if necessary. However, if it appears to the Nasdaq staff that we will not be able to cure the deficiency, or if we are otherwise not eligible, Nasdaq will notify us that our securities will be subject to delisting. In the event of such a notification, we may appeal the Nasdaq staff's determination to delist its securities. There can be no assurance that we will be eligible for the additional 180 calendar day compliance period, if applicable, or that the Nasdaq staff would grant our request for continued listing subsequent to any delisting notification.

If we cannot comply with the Nasdaq Listing Rules either now or in the future, our Common Stock would be subject to delisting and would likely trade on the over-the-counter market. If our Common Stock were to trade on the over-the-counter market, selling shares of our Common Stock could be more difficult because smaller quantities

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of shares would likely be bought and sold, transactions could be delayed, and security analysts' coverage of us may be reduced. In addition, broker-dealers have certain regulatory burdens imposed upon them, which may discourage broker-dealers from effecting transactions in shares of our Common Stock, further limiting the liquidity of our Common Stock. As a result, the market price of our Common Stock may be depressed, and you may find it more difficult to sell shares of our Common Stock. Such delisting from Nasdaq and continued or further declines in our stock price could also greatly impair our ability to raise additional necessary capital through equity or debt financing.

If our shares of Common Stock become subject to the penny stock rules, it would become more difficult to trade our shares.

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00, other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. If we do not retain a listing on Nasdaq or another national securities exchange and if the price of our Common Stock is less than \$5.00, our Common Stock could be deemed a penny stock. The penny stock rules require a broker-dealer, before a transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document containing specified information. In addition, the penny stock rules require that before effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for our Common Stock, and therefore stockholders may have difficulty selling their shares.

Our stock price may be volatile, which could result in substantial losses to investors and litigation.

In addition to changes to market prices based on our results of operations and the factors discussed elsewhere in this "Risk Factors" section, the market price of and trading volume for our Common Stock may change for a variety of other reasons, not necessarily related to our actual operating performance. The capital markets have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the trading price of our Common Stock. In addition, the average daily trading volume of the securities of small companies can be very low, which may contribute to future volatility. Factors that could cause the market price of our Common Stock to fluctuate significantly include:

- the results of operating and financial performance and prospects of other companies in our industry;
- strategic actions by us or our competitors, such as acquisitions or restructurings;
- announcements of innovations, increased service capabilities, new or terminated customers or new, amended or terminated contracts by our competitors;
- the public's reaction to our press releases, other public announcements, and filings with the Securities and Exchange Commission;
- lack of securities analyst coverage or speculation in the press or investment community about us or market opportunities in the smart glass industry;
- changes in government policies in the United States and, as our international business increases, in other foreign countries;
- changes in earnings estimates or recommendations by securities or research analysts who track our Common Stock or failure of our actual results of operations to meet those expectations;
- market and industry perception of our success, or lack thereof, in pursuing our growth strategy;
- changes in accounting standards, policies, guidance, interpretations or principles;
- any lawsuit involving us, our services or our products;

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- arrival and departure of key personnel;
- sales of Common Stock by us, our investors or members of our management team; and
- changes in general market, economic and political conditions in the United States and global economies or financial markets, including those resulting from natural or man-made disasters.

Any of these factors, as well as broader market and industry factors, may result in large and sudden changes in the trading volume of our Common Stock and could seriously harm the market price of our Common Stock, regardless of our operating performance. This may prevent you from being able to sell your shares at or above the price you paid for your shares, if at all. In addition, following periods of volatility in the market price of a company's shares, stockholders often institute securities class action litigation against that company. Our involvement in any class action suit or other legal proceeding could divert our senior management's attention and could adversely affect our business, financial condition, results of operations and prospects.

Our certificate of incorporation and bylaws, and certain provisions of Delaware corporate law, contain provisions that could delay or prevent a change in control even if the change in control would be beneficial to our stockholders.

Delaware law, as well as our certificate of incorporation and bylaws, contain anti-takeover provisions that could delay or prevent a change in control of our company, even if the change in control would be beneficial to our stockholders. These provisions could lower the price that future investors might be willing to pay for shares of our Common Stock. These anti-takeover provisions:

- authorize our board of directors to create and issue, without stockholder approval, preferred stock, thereby increasing the number of outstanding shares, which can deter or prevent a takeover attempt;
- prohibit stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;
- establish a three-tiered classified board of directors requiring that not all members of our board be elected at one time;
- establish a supermajority requirement to amend our amended and restated bylaws and specified provisions of our amended and restated certificate of incorporation;
- prohibit cumulative voting in the election of directors, which would otherwise allow less than a majority of stockholders to elect director candidates;
- establish limitations on the removal of directors;
- empower our board of directors to fill any vacancy on our board of directors, whether such vacancy occurs as a result of an increase in the number of directors or otherwise;
- provide that our board of directors is expressly authorized to adopt, amend or repeal our bylaws;
- provide that our directors will be elected by a plurality of the votes cast in the election of directors;
- establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted on by our stockholders at stockholder meetings; and
- limit the ability of our stockholders to call special meetings of stockholders.

If equity research analysts do not publish research or reports about our business, or if they issue unfavorable commentary or downgrade our Common Stock, the market price of our Common Stock will likely decline.

The trading market for our Common Stock will rely in part on the research and reports that equity research analysts, over whom we have no control, publish about us and our business. We may never obtain research coverage by securities and industry analysts. If no securities or industry analysts commence coverage of our company, the market price for our Common Stock could decline. In the event we obtain securities or industry analyst coverage, the market price of our Common Stock could decline if one or more equity analysts downgrade our Common Stock or if those analysts issue unfavorable commentary, even if it is inaccurate, or cease publishing reports about us or our business.

We do not anticipate paying any dividends on our Common Stock for the foreseeable future.

We have not paid any dividends on our Common Stock to date, and we do not anticipate paying any such dividends in the foreseeable future. We anticipate that any earnings experienced by us will be retained to finance the implementation of our operational business plan and expected future growth.

If we fail to develop and maintain proper and effective internal control over financial reporting, our ability to produce timely and accurate financial statements, comply with applicable laws and regulations, or access the capital markets could be impaired.

As a public company, we have significant requirements for enhanced financial reporting and internal control over financial reporting. The process of designing and implementing effective internal control over financial reporting is a continuous effort that requires us to anticipate and react to changes in our business and the economic and regulatory environments and to expend significant resources to maintain internal control over financial reporting that is adequate to satisfy our reporting obligations as a public company. If we are unable to establish or maintain appropriate internal control over financial reporting, it could cause us to fail to meet our reporting obligations on a timely basis, result in material misstatements in our financial statements, increase compliance costs, negatively impact share trading prices, and otherwise harm its results of operations. In addition, we will be required, pursuant to Section 404(a) of the Sarbanes-Oxley Act, or Section 404, to furnish a report by management on our assessment of the effectiveness of our internal control over financial reporting in the second annual report following the completion of our offering completed in January 2021 and uplisting to the Nasdaq.

This assessment will need to include disclosure of any material weaknesses identified in our internal control over financial reporting. The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation. Testing and maintaining our internal control over financial reporting may divert our management's attention from other matters that are important to its business.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until after we are no longer an "emerging growth company" as defined in the JOBS Act. We may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting in accordance with Section 404 or our independent registered public accounting firm may not issue an unqualified opinion. If either we are unable to conclude that we have effective internal control over financial reporting or our independent registered public accounting firm is unable to provide us with an unqualified report, investors could lose confidence in our reported financial information, which could have a material adverse effect on the trading price of our Common Stock.

We are an "emerging growth company" as defined in the JOBS Act and a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended, or the Exchange Act, and are able to avail itself of reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies, which could make our Common Stock less attractive to investors and adversely affect the market price of our Common Stock in the future.

We are an "emerging growth company," as defined in the JOBS Act. We will remain an emerging growth company until the earlier of (i) the last day of our fiscal year in which we total annual gross revenue of at least \$1.235 billion; (ii) the last day of our first fiscal year following the fifth anniversary of our initial public offering; (iii) the date on which we have issued more than \$1 billion in non-convertible debt securities during the previous three years; or (iv) the date on which we are deemed to be a "large accelerated filer" under the rules of the SEC, which means the market value of our Common Stock that is held by non-affiliates exceeds \$700.0 million. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- not being required to comply with the auditor attestation requirements of Section 404;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board ("PCAOB") regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;

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- providing only two years of audited financial statements in addition to any required unaudited interim financial statements and a correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure for certain filings;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholders approval of any golden parachute payments not previously approved.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early. Changes in rules of U.S. generally accepted accounting principles or their interpretation, the adoption of new guidance or the application of existing guidance to changes in our business could significantly affect our financial position and results of operations. In addition, our independent registered public accounting firm will not be required to provide an attestation report on the effectiveness of our internal control over financial reporting so long as we qualify as an “emerging growth company,” which may increase the risk that material weaknesses or significant deficiencies in our internal control over financial reporting go undetected. Likewise, so long as we qualify as a “smaller reporting company” or an “emerging growth company,” we may elect not to provide stockholders or investors with certain information, including certain financial information and certain information regarding compensation of our executive officers, that we would otherwise have been required to provide in filings we make with the SEC, which may make it more difficult for investors and securities analysts to evaluate our company.

We are a “smaller reporting company” as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies until the fiscal year following the determination that our voting and non-voting Common Stock held by non-affiliates is more than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue are more than \$100.0 million during the most recently completed fiscal year and our voting and non-voting Common Stock held by non-affiliates is more than \$700.0 million measured on the last business day of our second fiscal quarter.

We may choose to take advantage of some, but not all, of the available exemptions as an emerging growth company and a smaller reporting company. We will take advantage of reduced reporting burdens. We cannot predict whether investors will find our Common Stock less attractive if we rely on these exemptions. If some investors find our Common Stock less attractive as a result, there may be a less active trading market for our Common Stock and our stock price may be more volatile.

We are required by Section 404 of the Sarbanes-Oxley Act to evaluate the effectiveness of its internal control over financial reporting. If we are unable to achieve and maintain effective internal controls, our operating results and financial condition could be harmed.

We are an emerging growth company, and thus we are exempt from the auditor attestation requirement of Section 404(b) of Sarbanes-Oxley until such time as we no longer qualify as an emerging growth company. Regardless of whether we qualify as an emerging growth company, we will still need to implement substantial internal control systems and procedures in order to satisfy the reporting requirements under the Exchange Act and applicable requirements.

Due to the recent implementation of the Reverse Stock Split, the liquidity of our Common Stock may be adversely effected.

We effected the Reverse Stock Split of our outstanding Common Stock on August 14, 2023. The liquidity of the shares of our Common Stock may be affected adversely by any reverse stock split given the reduced number of shares of our Common Stock that are outstanding following the Reverse Stock Split, especially if the market price of our Common Stock does not increase as a result of the Reverse Stock Split. Following the Reverse Stock Split, the resulting market price of our Common Stock may not attract new investors and may not satisfy the investing requirements of those investors. Although we believe that a higher market price of our Common Stock may help generate greater or broader investor interest, there can be no assurance that the Reverse Stock Split resulted in a share price that will attract new

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investors, including institutional investors. In addition, there can be no assurance that the market price of our Common Stock will satisfy the investing requirements of those investors. As a result, the trading liquidity of our Common Stock may not necessarily improve.

Risks Related to this Offering

It is not possible to predict the actual number of shares we will sell under the Purchase Agreement to the Selling Stockholder, or the actual gross proceeds resulting from those sales.

On July 20, 2023, we entered into the Purchase Agreement with Keystone Capital Partners, LLC, pursuant to which the Selling Stockholder has committed to purchase up to \$50,000,000 in shares of our Common Stock, subject to certain limitations and conditions set forth in the Purchase Agreement. The shares of our Common Stock that may be issued under the Purchase Agreement may be sold by us to the Selling Stockholder at our discretion from time to time over a 24-month period commencing on the date on which all of the conditions to our right to commence sales of our Common Stock to the Selling Stockholder set forth in the Purchase Agreement were satisfied (“Commencement Date”). To date, we have sold \$4,736,446 in shares of our Common Stock pursuant to the Purchase Agreement, and we may receive proceeds of up to an additional \$45,263,554 from the sale of the shares of Common Stock to the Selling Stockholder under the Purchase Agreement.

We generally have the right to control the timing and amount of any sales of our shares of Common Stock to the Selling Stockholder under the Purchase Agreement. Sales of our Common Stock, if any, to the Selling Stockholder under the Purchase Agreement will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to the Selling Stockholder all, some or no additional amount of the shares of our Common Stock that may be available for us to sell to Selling Stockholder pursuant to the Purchase Agreement.

Because the purchase price per share to be paid by the Selling Stockholder for the shares of Common Stock that we may elect to sell to them under the Purchase Agreement, if any, will fluctuate based on the market prices of our Common Stock for each Purchase made pursuant to the Purchase Agreement, if any, it is not possible for us to predict, as of the date of this prospectus and prior to any such sales, the number of shares of Common Stock that we will sell to the Selling Stockholder under the Purchase Agreement, the purchase price per share that the Selling Stockholder will pay for shares purchased from us under the Purchase Agreement, or the aggregate gross proceeds that we will receive from those purchases by the Selling Stockholder under the Purchase Agreement, if any.

Moreover, although the Purchase Agreement provides that we may sell up to an aggregate of \$45,263,554 of our Common Stock to the Selling Stockholder, we are registering 200,000,000 shares of our Common Stock for resale under this prospectus. If after the Commencement Date, we elect to sell to the Selling Stockholder all of the shares of Common Stock being registered for resale under this prospectus that are available for sale by us to the Selling Stockholder in Purchases under the Purchase Agreement, depending on the market prices of our Common Stock for each Purchase made pursuant to the Purchase Agreement, the actual gross proceeds from the sale of the shares may be substantially less than the \$45,263,554 Total Commitment available to us under the Purchase Agreement. If it becomes necessary for us to issue and sell to the Selling Stockholder under the Purchase Agreement more shares than being registered for resale under this prospectus in order to receive aggregate gross proceeds equal to the Total Commitment of \$50,000,000 under the Purchase Agreement, we must file with the SEC one or more additional registration statements to register under the Securities Act the resale by the Selling Stockholder of any such additional shares of our Common Stock over the 200,000,000 shares registered in this Registration Statement that we wish to sell from time to time under the Purchase Agreement, which the SEC must declare effective, in each case before we may elect to sell any additional shares of our Common Stock to the Selling Stockholder under the Purchase Agreement.

Any issuance and sale by us under the Purchase Agreement of a substantial amount of shares of Common Stock in addition to the 200,000,000 shares of our Common Stock being registered for resale by the Selling Stockholder under this prospectus could cause additional substantial dilution to our stockholders. The number of shares of our Common Stock ultimately offered for sale by the Selling Stockholder is dependent upon the number of shares of Common Stock, if any, we ultimately sell to the Selling Stockholder under the Purchase Agreement.

Investors who buy shares at different times will likely pay different prices.

Pursuant to the Purchase Agreement, we will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold to the Selling Stockholder. If and when we do elect to sell shares of our Common Stock to the Selling Stockholder pursuant to the Purchase Agreement, after the Selling Stockholder has acquired such shares, the Selling Stockholder may resell all, some or none of such shares at any time or from time to time in its discretion and at different prices. As a result, investors who purchase shares from the Selling Stockholder in this offering at different times will likely pay different prices for those shares, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results. Investors may experience a decline in the value of the shares they purchase from the Selling Stockholder in this offering as a result of future sales made by us to the Selling Stockholder at prices lower than the prices such investors paid for their shares in this offering.

We may require additional financing to sustain our operations and without it we may not be able to continue operations.

Subject to the terms and conditions of the Purchase Agreement, we may, at our discretion, direct the Selling Stockholder to purchase up to \$50,000,000 of shares of our Common Stock under the Purchase Agreement from time-to-time over a 24-month period beginning on the Commencement Date. To date, we have sold \$4,736,446 in shares of our Common Stock pursuant to the Purchase Agreement, and we may receive proceeds of up to an additional \$45,263,554 from the sale of the shares of Common Stock to the Selling Stockholder under the Purchase Agreement. The purchase price per share for the shares of Common Stock that we may elect to sell to the Selling Stockholder under the Purchase Agreement will fluctuate based on the market prices of our Common Stock for each Purchase made pursuant to the Purchase Agreement, if any. Accordingly, it is not currently possible to predict the number of shares that will be sold to the Selling Stockholder, the actual purchase price per share to be paid by the Selling Stockholder for those shares, if any, or the actual gross proceeds to be raised in connection with those sales.

Assuming a purchase price of \$0.123 per share (which represents the closing price of our Common Stock on Nasdaq on February 2, 2024), the purchase by the Selling Stockholder of all of the 200,000,000 shares registered hereby (less the Commitment Shares) would result in aggregate gross proceeds to us of approximately \$24,160,000 which is substantially less than the \$45,263,554 available to us under the Purchase Agreement. After deducting our fees and expenses, the aggregate net proceeds to us from all of such purchases by the Selling Stockholder would be approximately \$23,435,200.

Accordingly, in order to receive aggregate gross proceeds equal to the \$45,263,554 remaining of the Total Commitment available to us under the Purchase Agreement, we may need to issue and sell to the Selling Stockholder under the Purchase Agreement more than the number of shares of Common Stock registered hereby, which would require us to file with the SEC one or more additional registration statements to register under the Securities Act the resale by the Selling Stockholder any such additional shares of our Common Stock we wish to sell from time to time under the Purchase Agreement, which the SEC must declare effective, in each case before we may elect to sell any additional shares of Common Stock to the Selling Stockholder under the Purchase Agreement.

The extent to which we rely on the Selling Stockholder as a source of funding will depend on a number of factors including, the prevailing market price of our Common Stock and the extent to which we are able to secure working and other capital from other sources. If obtaining sufficient funding from the Selling Stockholder were to prove unavailable or prohibitively dilutive, we may need to secure another source of funding in order to satisfy our working and other capital needs. Even if we were to sell to the Selling Stockholder all of the shares of Common Stock available for sale to the Selling Stockholder under the Purchase Agreement, we may still need additional capital to fully implement our business, operating and development plans. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences may be a material adverse effect on our business, operating results, financial condition and prospects.

Sales of our Common Stock to the Selling Stockholder may cause substantial dilution to our existing stockholders, the sale of the shares of our Common Stock acquired by the Selling Stockholder could cause the price of our Common Stock to decline, and the actual number of shares we will issue under the Purchase Agreement, at any one time or in total, is uncertain.

This registration statement relates to an aggregate amount of up to \$45,263,554 of shares of our Common Stock that we may sell to the Selling Stockholder from time to time prior to the 24-month anniversary of the Commencement Date. The number of shares ultimately offered for sale to the Selling Stockholder under this prospectus supplement is dependent upon the number of shares we elect to sell to the Selling Stockholder under the Purchase Agreement. See “*Committed Equity Financing*” for more information about our obligations under the Purchase Agreement.

Depending upon market liquidity at the time, sales of shares of our Common Stock under the Purchase Agreement may cause the trading price of our Common Stock to decline. After the Selling Stockholder has acquired shares under the Purchase Agreement, it may sell all, some or none of those shares. Sales to the Selling Stockholder by us pursuant to the Purchase Agreement under this prospectus supplement may result in substantial dilution to the interests of other holders of our Common Stock. The sale of a substantial number of shares of our Common Stock to the Selling Stockholder in this offering, or anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales. However, we have the right to control the timing and amount of any sales of our shares to the Selling Stockholder (other than the mandatory purchase notice described above that we are obligated to issue), and the Purchase Agreement may be terminated by us at any time at our discretion without penalty.

The extent to which we rely on the Selling Stockholder as a source of funding will depend on a number of factors, including the prevailing market price of our Common Stock and the extent to which we are able to secure working capital from other sources.

Future sales and issuances of our Common Stock or other securities might result in significant dilution and could cause the price of our Common Stock to decline.

To raise capital, we may sell Common Stock, convertible securities or other equity securities in one or more transactions other than those contemplated by the Purchase Agreement, at prices and in a manner we determine from time to time. We may sell shares or other securities in another offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our Common Stock, or securities convertible or exchangeable into Common Stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We cannot predict what effect, if any, sales of shares of our Common Stock in the public market or the availability of shares for sale will have on the market price of our Common Stock. However, future sales of substantial amounts of our Common Stock in the public market, including shares issued upon exercise of outstanding options, warrants and convertible preferred shares, or the perception that such sales may occur, could adversely affect the market price of our Common Stock.

Management will have broad discretion as to the use of the proceeds from the offering, and uses may not improve our financial condition or market value.

Because we have not designated the amount of net proceeds from the offering to be used for any particular purpose, our management will have broad discretion as to the application of such net proceeds and could use them for purposes other than those contemplated hereby. Our management may use the net proceeds for corporate purposes that may not improve our financial condition or market value.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains various forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, which represent our expectations or beliefs concerning future events. Forward-looking statements include statements that are predictive in nature, which depend upon or refer to future events or conditions, and/or which include words such as “believes,” “plans,” “intends,” “anticipates,” “estimates,” “expects,” “may,” “will,” “continues,” “should” or the negative of these words and phrases or similar words or phrases which are predictions of or indicate future events or trends and which do not relate solely to historical matters. In addition, any statements concerning future financial performance, ongoing strategies or prospects, and possible future actions, including any potential strategic transaction involving us, which may be provided by our management, are also forward-looking statements. These statements are not guarantees of future performance, and we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law.

Forward-looking statements are based on current expectations and projections about future events, actual events and results may differ materially from those expressed or forecasted in forward-looking statements due to a number of factors. You should understand that the following important factors, in addition to those discussed in under the heading “*Risk Factors*” included elsewhere in this prospectus and in any of our filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, could affect our stock price or future results and could cause those results to differ materially from those expressed in such forward-looking statements:

- our prospects, including our future business, revenues, expenses, net income, earnings per share, gross margins, profitability, cash flows, cash position, liquidity, financial condition and results of operations, backlog of orders and revenue, our targeted growth rate, our goals for future revenues and earnings, and our expectations about realizing the revenues in our backlog and in our sales pipeline;
- the potential impact of COVID-19 on our business and results of operations;
- the effects on our business, financial condition and results of operations of current and future economic, business, market and regulatory conditions, including the current economic and market conditions and their effects on our customers and their capital spending and ability to finance purchases of our products, services, technologies and systems;
- the effects of fluctuations in sales on our business, revenues, expenses, net income, earnings per share, margins, profitability, cash flows, capital expenditures, liquidity, financial condition and results of operations;
- our products, services, technologies and systems, including their quality and performance in absolute terms and as compared to competitive alternatives, their benefits to our customers and their ability to meet our customers’ requirements, and our ability to successfully develop and market new products, services, technologies and systems;
- our markets, including our market position and our market share;
- our ability to successfully develop, operate, grow and diversify our operations and businesses;
- our business plans, strategies, goals and objectives, and our ability to successfully achieve them;
- the sufficiency of our capital resources, including our cash and cash equivalents, funds generated from operations and other capital resources, to meet our future working capital, capital expenditure and business growth needs;
- the value of our assets and businesses, including the revenues, profits and cash flows they are capable of delivering in the future;
- the effects on our business operations, financial results, and prospects of business acquisitions, combinations, sales, alliances, ventures and other similar business transactions and relationships;

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- industry trends and customer preferences and the demand for our products, services, technologies and systems; and
- the nature and intensity of our competition, and our ability to successfully compete in our markets.

These statements are necessarily subjective, are based upon our current plans, intentions, objectives, goals, strategies, beliefs, projections and expectations, and involve known and unknown risks, uncertainties and other important factors that could cause our actual results, performance or achievements, or industry results, to differ materially from any future results, performance or achievements described in or implied by such statements. Actual results may differ materially from expected results described in our forward-looking statements, including with respect to correct measurement and identification of factors affecting our business or the extent of their likely impact, the accuracy and completeness of the publicly-available information with respect to the factors upon which our business strategy is based, or the success of our business.

COMMITTED EQUITY FINANCING

General

On July 20, 2023, we entered into the Purchase Agreement and the Registration Rights Agreement with Keystone Capital Partners. Pursuant to the Purchase Agreement, we have the right to sell to the Selling Stockholder up to a Total Commitment of \$50,000,000 in shares of our Common Stock, subject to certain limitations and conditions set forth in the Purchase Agreement. In accordance with our obligations under the Registration Rights Agreement, we filed a registration statement on Form S-3 that went effective on August 7, 2023 (File No. 333-273550) (the “Prior Registration Statement”), pursuant to which we have sold \$4,736,446 in shares of our Common Stock pursuant to the Purchase Agreement, and we may receive proceeds of up to an additional \$45,263,554 from the sale of the shares of Common Stock to the Selling Stockholder under the Purchase Agreement. We have sold all or substantially all of the shares registered on the Prior Registration Statement. Therefore, we have filed the registration statement that includes this prospectus with the SEC to register under the Securities Act the resale by the Selling Stockholder of additional shares of Common Stock that we have issued and may issue to Selling Stockholder under the Purchase Agreement.

We do not have further right to make sales of our Common Stock to the Selling Stockholder under the Purchase Agreement until the registration statement that includes this prospectus is declared effective by the SEC and the final form of this prospectus is filed with the SEC. From and after such time, we will control the timing and amount of any sales of our Common Stock to the Selling Stockholder. Actual sales of shares of our Common Stock to the Selling Stockholder under the Purchase Agreement will depend on a variety of factors to be determined by us from time to time, including, among others, market conditions, the trading price of the Common Stock and determinations by us as to the appropriate sources of funding for our company and our operations.

The purchase price per share of the shares of Common Stock that we elect to sell to the Selling Stockholder pursuant to a Purchase under the Purchase Agreement will be equal to ninety-seven percent (97.0%) of the lower of (i) the lowest intraday sale price of the Common Stock on our current trading market on the applicable purchase date and (ii) the arithmetic average of the three (3) lowest closing sale prices during the ten (10) trading days immediately preceding the applicable purchase date. There is no upper limit on the price per share that the Selling Stockholder could be obligated to pay for the Common Stock under the Purchase Agreement.

The Purchase Agreement prohibits us from directing the Selling Stockholder to purchase any shares of our Common Stock if those shares, when aggregated with all other shares of our Common Stock then beneficially owned by the Selling Stockholder (as calculated pursuant to Section 13(d) of the Securities Exchange Act of 1934, as amended, and Rule 13d-3 thereunder), including the Commitment Shares, would result in the Selling Stockholder beneficially owning more than the Beneficial Ownership Cap of 4.99% of the outstanding Common Stock.

Because the purchase price per share to be paid by the Selling Stockholder for the shares of Common Stock that we may elect to sell to the Selling Stockholder under the Purchase Agreement, if any, will fluctuate based on the market prices of our Common Stock, as of the date of this prospectus it is not possible for us to predict the number of shares of Common Stock that we will sell to the Selling Stockholder under the Purchase Agreement, the actual purchase price per share to be paid by the Selling Stockholder for those shares, or the actual gross proceeds to be raised by us from those sales, if any. As of February 2, 2024, there were 30,868,347 shares of our Common Stock outstanding, of which 30,847,856 shares were held by non-affiliates, which excludes the 200,000,000 shares of Common Stock registered hereby that include the Commitment Shares and shares of Common Stock that we may, in our sole discretion, sell to the Selling Stockholder from time to time pursuant to the Purchase Agreement. If all of the shares offered for resale by the Selling Stockholder under this prospectus were issued and outstanding as of February 2, 2024, such shares would represent approximately 87% of the total number of shares of our Common Stock outstanding and approximately 87% of the total number of outstanding shares held by non-affiliates, in each case as of February 2, 2024.

The net proceeds from sales, if any, under the Purchase Agreement, will depend on the frequency and prices at which we sell shares of Common Stock to the Selling Stockholder. To the extent we sell shares under the Purchase Agreement, we currently plan to use any proceeds therefrom for costs of this transaction, for working capital, strategic and other general corporate purposes.

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The issuance of our Common Stock to the Selling Stockholder pursuant to the Purchase Agreement will not affect the rights or privileges of our existing stockholders, except that the economic and voting interests of each of our existing stockholders will be diluted. Although the number of shares of our Common Stock that our existing stockholders own will not decrease, the shares of our Common Stock owned by our existing stockholders will represent a smaller percentage of our total outstanding shares of our Common Stock after any such issuance.

As consideration for the Selling Stockholder's irrevocable commitment to purchase shares of Common Stock upon the terms of and subject to satisfaction of the conditions set forth in the Purchase Agreement, concurrently with the execution and delivery of the Purchase Agreement, we issued to the Selling Stockholder 1,310,429 shares of Common Stock. In addition, as consideration for the Selling Stockholder's irrevocable commitment to purchase shares of Common Stock upon the terms of and subject to satisfaction of the conditions set forth in the Purchase Agreement, we agreed to issue up to a maximum of 5,244,994 shares of our Common Stock, of which we still are required to issue the Commitment Shares. We also agreed to reimburse the Selling Stockholder for the fees and expenses of its counsel, up to a maximum of \$5,000.

The Purchase Agreement and the Registration Rights Agreement contain customary representations, warranties, conditions and indemnification obligations of the parties. The representations, warranties and covenants contained in such agreements were made only for purposes of such agreements and as of specific dates, were solely for the benefit of the parties to such agreements and may be subject to limitations agreed upon by the contracting parties.

Neither we nor the Selling Stockholder may assign or transfer its rights and obligations under the Purchase Agreement, and no provision of the Purchase Agreement or the Registration Rights Agreement may be modified or waived by the parties.

Purchase of Shares by Keystone Capital Partners, LLC

Upon the terms and subject to the conditions set forth in the Purchase Agreement, we will have the right, but not the obligation, from time to time at our sole discretion over the 24-month period from and after the Commencement Date, to direct the Selling Stockholder to purchase up to a maximum amount of shares of Common Stock based on a percentage of total volume on the purchase at the applicable purchase price per share to be calculated on the trading day the Selling Stockholder receives purchase notice from us (the "Purchase Date") in accordance with the Purchase Agreement (each, a "Purchase").

The maximum number of shares of Common Stock that the Selling Stockholder is required to purchase in any single Purchase under the Purchase Agreement (the "Purchase Maximum Amount") is equal to:

- if the notice for Purchase is received by 8:30 a.m. Eastern Time, the lower of: (i) an amount equal to forty percent (40%) of the daily value traded of our Common Stock on the trading market on the ten (10) trading days immediately preceding a notice for Purchase, or (ii) \$20.0 million; or
- if the notice for Purchase is received after 8:30 a.m. Eastern Time but prior to 10:30 a.m. Eastern Time, the lower of: (i) an amount equal to thirty percent (30%) of the daily value traded of our Common Stock on the trading market on the ten (10) trading days immediately preceding a notice for Purchase, or (ii) \$15.0 million; or
- if the notice for Purchase is received after 10:30 a.m. Eastern Time but prior to 12:30 p.m. Eastern Time, the lower of: (i) an amount equal to twenty percent (20%) of the daily value traded of our Common Stock on the trading market on the ten (10) trading days immediately preceding a notice for Purchase, or (ii) \$10.0 million; or

The purchase price per share of the shares of Common Stock that we elect to sell to the Selling Stockholder pursuant to a Purchase under the Purchase Agreement will be equal to ninety-seven percent (97.0%) of the lower of (i) the lowest intraday sale price of our Common Stock on the current trading market on the applicable purchase date and (ii) the arithmetic average of the three (3) lowest closing sale prices during the ten (10) trading days immediately preceding the applicable Purchase Date. There is no upper limit on the price per share that the Selling Stockholder could be obligated to pay for the Common Stock under the Purchase Agreement.

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The Purchase Price to be paid by Keystone Capital Partners, LLC in a Purchase will be equitably adjusted as set forth in the Purchase Agreement for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction.

The payment for shares in respect of each Purchase under the Purchase Agreement will be settled on the third (3rd) trading day immediately following the delivery of the shares to the Selling Stockholder, which shall occur on the trading day immediately following the applicable Purchase Date.

Conditions Precedent to Commencement and For Delivery of Purchase Notices

Our right to deliver Purchase notices to the Selling Stockholder under the Purchase Agreement, and the Selling Stockholder's obligation to Purchase notices delivered by us under the Purchase Agreement, are subject to (i) the initial satisfaction, at the Commencement, and (ii) the satisfaction of the conditions precedent thereto set forth in the Purchase Agreement, all of which are entirely outside of the Selling Stockholder's control, which conditions including the following:

- the accuracy in all material respects of the representations and warranties of the company included in the Purchase Agreement;
- Our having performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Purchase Agreement to be performed, satisfied or complied with by us;
- the registration statement that includes this prospectus (and any one or more additional registration statements filed with the SEC that include shares of Common Stock that may be issued and sold by us to the Selling Stockholder under the Purchase Agreement, including the Prior Registration Statement) having been declared effective under the Securities Act by the SEC, and the Selling Stockholder being able to utilize this prospectus (and the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement, including the Prior Registration Statement) to resell all of the shares of Common Stock included in this prospectus (and included in any such additional prospectuses);
- the SEC shall not have issued any stop order suspending the effectiveness of the registration statement that includes this prospectus (or any one or more additional registration statements filed with the SEC that include shares of Common Stock that may be issued and sold by us to the Selling Stockholder under the Purchase Agreement, including the Prior Registration Statement) or prohibiting or suspending the use of this prospectus (or the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement, including the Prior Registration Statement), and the absence of any suspension of qualification or exemption from qualification of the Common Stock for offering or sale in any jurisdiction;
- there shall not have occurred any event and there shall not exist any condition or state of facts, which makes any statement of a material fact made in the registration statement that includes this prospectus (or in any one or more additional registration statements filed with the SEC that include shares of Common Stock that may be issued and sold by us to the Selling Stockholder under the Purchase Agreement, including the Prior Registration Statement) untrue or which requires the making of any additions to or changes to the statements contained therein in order to state a material fact required by the Securities Act to be stated therein or necessary in order to make the statements then made therein (in the case of this prospectus or the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement, including the Prior Registration Statement, in light of the circumstances under which they were made) not misleading;
- this prospectus, in final form, shall have been filed with the SEC under the Securities Act prior to Commencement, and all reports, schedules, registrations, forms, statements, information and other documents required to have been filed by us with the SEC pursuant to the reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), shall have been filed with the SEC;
- trading in the Common Stock shall not have been suspended by the SEC or the Nasdaq, we shall not have received any final and non-appealable notice that the listing or quotation of the Common Stock on the Nasdaq shall be terminated on a date certain (unless, prior to such date, the Common Stock is listed or

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quoted on any other Eligible Market, as such term is defined in the Purchase Agreement), and there shall be no suspension of, or restriction on, accepting additional deposits of the Common Stock, electronic trading or book-entry services by DTC with respect to the Common Stock;

- we shall have complied with all applicable federal, state and local governmental laws, rules, regulations and ordinances in connection with the execution, delivery and performance of the Purchase Agreement and the Registration Rights Agreement;
- the absence of any statute, regulation, order, decree, writ, ruling or injunction by any court or governmental authority of competent jurisdiction which prohibits the consummation of or that would materially modify or delay any of the transactions contemplated by the Purchase Agreement or the Registration Rights Agreement;
- the absence of any action, suit or proceeding before any arbitrator or any court or governmental authority seeking to restrain, prevent or change the transactions contemplated by the Purchase Agreement or the Registration Rights Agreement, or seeking material damages in connection with such transactions;
- all of the shares of Common Stock that may be issued pursuant to the Purchase Agreement shall have been approved for listing or quotation on Nasdaq (or if the Common Stock is not then listed on Nasdaq, on any Eligible Market), subject only to notice of issuance;
- no condition, occurrence, state of facts or event constituting a material adverse effect shall have occurred and be continuing;
- the absence of any bankruptcy proceeding against us commenced by a third party, and we shall not have commenced a voluntary bankruptcy proceeding, consented to the entry of an order for relief against it in an involuntary bankruptcy case, consented to the appointment of a custodian of the company or for all or substantially all of its property in any bankruptcy proceeding, or made a general assignment for the benefit of its creditors; and
- the receipt by the Selling Stockholder of the opinions, bring-down opinions and negative assurances from outside counsel to us in the forms mutually agreed to by us and the Selling Stockholder prior to the date of the Purchase Agreement.

Termination of the Purchase Agreement

Unless earlier terminated as provided in the Purchase Agreement, the Purchase Agreement will terminate automatically on the earliest to occur of:

- the first day of the month next following the 24-month anniversary of the Commencement Date;
- the date on which the Selling Stockholder shall have purchased shares of Common Stock under the Purchase Agreement for an aggregate gross purchase price equal to its \$50,000,000 Total Commitment under the Purchase Agreement;
- the date on which the Common Stock shall have failed to be listed or quoted on The Nasdaq Capital Market or any other Eligible Market; and
- the date on which we commence a voluntary bankruptcy case or any third party commences a bankruptcy proceeding against us, a custodian is appointed for us in a bankruptcy proceeding for all or substantially all of its property, or we make a general assignment for the benefit of its creditors.

We have the right to terminate the Purchase Agreement at any time after the Commencement Date, at no cost or penalty, upon ten (10) trading days' prior written notice to the Selling Stockholder. We and the Selling Stockholder may also terminate the Purchase Agreement at any time by mutual written consent.

The Selling Stockholder also has the right to terminate the Purchase Agreement upon ten (10) trading days' prior written notice to us, but only upon the occurrence of certain events, including:

- the occurrence of a Material Adverse Effect (as defined in the Purchase Agreement);
- the occurrence of a Fundamental Transaction (as defined in the Purchase Agreement) involving the company;

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- our failure to file with the SEC, or the SEC's failure to declare effective, the registration statement that includes this prospectus or any additional registration statement we file with the SEC pursuant to the Registration Rights Agreement (including the Prior Registration Statement), within the time periods set forth in the Registration Rights Agreement;
- the effectiveness of the registration statement that includes this prospectus or any additional registration statement we file with the SEC pursuant to the Registration Rights Agreement (including the Prior Registration Statement) lapses for any reason (including the issuance of a stop order by the SEC), or this prospectus or the prospectus included in any additional registration statement we file with the SEC pursuant to the Registration Rights Agreement (including the Prior Registration Statement) otherwise becomes unavailable to the Selling Stockholder for the resale of all of the shares of Common Stock included therein, and such lapse or unavailability continues for a period of twenty (20) consecutive trading days or for more than an aggregate of 60 trading days in any 365-day period, other than due to acts of Keystone Capital Partners, LLC;
- trading in the Common Stock on The Nasdaq Capital Market (or if the Common Stock is then listed on an Eligible Market, trading in the Common Stock on such Eligible Market) has been suspended for a period of three consecutive trading days.

No termination of the Purchase Agreement by us or by the Selling Stockholder will become effective prior to the first trading day immediately following the applicable settlement date related to any pending Purchase that has not been fully settled in accordance with the terms and conditions of the Purchase Agreement, and will not affect any of our respective rights and obligations under the Purchase Agreement with respect to any pending Purchase (as applicable), and both we and the Selling Stockholder have agreed to complete our respective obligations with respect to any such pending Purchase under the Purchase Agreement. Furthermore, no termination of the Purchase Agreement will affect the Registration Rights Agreement, which will survive any termination of the Purchase Agreement.

No Short-Selling or Hedging by Keystone Capital Partners, LLC

The Selling Stockholder has agreed that neither it nor any of its affiliates shall engage in any direct or indirect short-selling or hedging of our Common Stock during any time prior to the termination of the Purchase Agreement.

Prohibition on Variable Rate Transactions

Subject to specified exceptions included in the Purchase Agreement, we are limited in our ability to enter into specified variable rate transactions during the term of the Purchase Agreement. Such transactions include, among others, the issuance of convertible securities with a conversion or exercise price that is based upon or varies with the trading price of our Common Stock after the date of issuance.

Effect of Performance of the Purchase Agreement on our Stockholders

All shares of Common Stock that have been or may be issued or sold by us to the Selling Stockholder under the Purchase Agreement that are being registered under the Securities Act for resale by the Selling Stockholder in this offering are expected to be freely tradable. The shares of Common Stock being registered for resale in this offering (excluding the Commitment Shares) may be issued and sold by us to the Selling Stockholder from time to time at our discretion over a period of up to 24 months commencing on the Commencement Date. The resale by the Selling Stockholder of a significant amount of shares registered for resale in this offering at any given time, or the perception that these sales may occur, could cause the market price of our Common Stock to decline and to be highly volatile. Sales of our Common Stock, if any, by the Selling Stockholder under the Purchase Agreement will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to the Selling Stockholder all, some or none of the shares of our Common Stock that may be available for us to sell to the Selling Stockholder pursuant to the Purchase Agreement.

If and when we do elect to sell shares of our Common Stock to the Selling Stockholder pursuant to the Purchase Agreement, after the Selling Stockholder has acquired such shares, the Selling Stockholder may resell all, some or none of such shares at any time or from time to time in its discretion and at different prices. As a result, investors who

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purchase shares from the Selling Stockholder in this offering at different times will likely pay different prices for those shares, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results. Investors may experience a decline in the value of the shares they purchase from the Selling Stockholder in this Offering as a result of future sales made by us to the Selling Stockholder at prices lower than the prices such investors paid for their shares in this offering. In addition, if we sell a substantial number of shares to the Selling Stockholder under the Purchase Agreement, or if investors expect that we will do so, the actual sales of shares or the mere existence of our arrangement with the Selling Stockholder may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales.

Although the Purchase Agreement provides that we may sell up to an aggregate of \$45,263,554 of our Common Stock to the Selling Stockholder, we are registering 200,000,000 shares of our Common Stock. If after the Commencement Date we elect to sell to the Selling Stockholder all of the 200,000,000 shares of Common Stock being registered for resale under this prospectus that are available for sale by us to the Selling Stockholder in Purchases under the Purchase Agreement, depending on the market prices of our Common Stock, the actual gross proceeds from the sale of the shares may be substantially less than the \$45,263,554 available to us under the Purchase Agreement. If it becomes necessary for us to issue and sell to the Selling Stockholder under the Purchase Agreement more shares than being registered for resale under this prospectus in order to receive aggregate gross proceeds equal to the Total Commitment of \$50,000,000 under the Purchase Agreement, we must file with the SEC one or more additional registration statements to register under the Securities Act the resale by the Selling Stockholder of any such additional shares of our Common Stock over the 200,000,000 shares registered in this Registration Statement that we wish to sell from time to time under the Purchase Agreement, which the SEC must declare effective, in each case before we may elect to sell any additional shares of our Common Stock to the Selling Stockholder under the Purchase Agreement. Any issuance and sale by us under the Purchase Agreement of a substantial amount of shares of Common Stock in addition to the 200,000,000 shares of our Common Stock being registered for resale by the Selling Stockholder under this prospectus could cause additional substantial dilution to our stockholders. The number of shares of our Common Stock ultimately offered for sale by the Selling Stockholder is dependent upon the number of shares of Common Stock, if any, we ultimately sell to the Selling Stockholder under the Purchase Agreement.

The following table sets forth the amount of gross proceeds we would receive from the Selling Stockholder from our sale of shares of Common Stock to the Selling Stockholder under the Purchase Agreement at varying purchase prices:

Assumed Average Purchase Price Per Share	Number of Registered Shares to be Issued if Full Purchase ⁽¹⁾	Percentage of Outstanding Shares After Giving Effect to the Issuance to the Selling Stockholder ⁽²⁾	Gross Proceeds from the Sale of Shares to the Selling Stockholder Under the Purchase Agreement ⁽³⁾
\$ 0.0500	200,000,000	86.6%	\$ 9,821,138
\$ 0.1000	200,000,000	86.6%	\$ 19,642,276
\$ 0.123 ⁽⁴⁾	200,000,000	86.6%	\$ 24,160,000
\$ 0.1500	200,000,000	86.6%	\$ 29,463,415
\$ 0.1800	200,000,000	86.6%	\$ 35,356,098
\$ 0.2500	181,054,215	85.4%	\$ 45,263,554 ⁽⁵⁾
\$ 0.5000	90,527,108	74.6%	\$ 45,263,554 ⁽⁵⁾

- (1) Although the Purchase Agreement provides that we may sell up to \$45,263,554 of our Common Stock to the stockholder, we are only registering 200,000,000 shares under this prospectus, which may or may not cover all of the shares we ultimately sell to the stockholder under the Purchase Agreement. The number of registered shares to be issued as set forth in this column gives effect to (i) the Beneficial Ownership Cap and (ii) the Total Commitment amount of \$50,000,000.
- (2) The denominator is based on 30,868,347 shares outstanding as of February 2, 2024 adjusted to include the issuance of the number of shares set forth in the adjacent column that we would have sold to the Selling Stockholder in future sales, assuming the average purchase price in the first column for all shares issued. The numerator is based on the number of shares issuable pursuant to future sales under the Purchase Agreement (that are the subject of this Offering) at the corresponding assumed average purchase price set forth in the first column.
- (3) Excludes Commitment Shares issued to Selling Stockholder for which no proceeds are received by the Company.
- (4) The closing sale price of our Common Stock on February 2, 2024.
- (5) The number of registered shares to be issued are limited by the \$45,263,554 remaining of the Total Commitment in shares of our Common Stock.

USE OF PROCEEDS

This prospectus relates to shares of Common Stock that may be offered and sold from time to time by the Selling Stockholder. We will not receive any proceeds from the resale of shares of Common Stock by the Selling Stockholder.

We may receive up to \$45,263,554 in gross proceeds pursuant to the Purchase Agreement. See “*Plan of Distribution*” elsewhere in this prospectus for more information.

We intend to use any proceeds from the Selling Stockholder that we receive under the Purchase Agreement for working capital, strategic and general corporate purposes. We cannot specify with certainty all of the particular uses for the net proceeds that we will have from the sale of our shares pursuant to the Purchase Agreement. Therefore, our management will have broad discretion to determine the specific use for the net proceeds and we may use the proceeds for purposes that are not contemplated at the time of this offering.

We will incur all costs associated with this prospectus and the registration statement of which it is a part.

MARKET FOR COMMON STOCK AND DIVIDEND POLICY

Market Information and Number of Stockholders

Our Common Stock is listed on the Nasdaq Capital Market under the symbol “CRKN.” The last reported closing price for our Common Stock on Nasdaq on February 2, 2024 was \$0.123 per share.

Based upon information furnished by our transfer agent, as of February 2, 2024 there were approximately 49 holders of record of our Common Stock. A substantially greater number of holders of our Common Stock are “street name” or beneficial holders, whose shares of record are held by banks, brokers, and other financial institutions.

Dividend Policy

We have never declared or paid any cash dividends on shares of our Common Stock and do not intend to pay any cash dividends in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our Board of Directors. Accordingly, investors must rely on sales of their Common Stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

CAPITALIZATION

The following table sets forth our actual cash and cash equivalents and our capitalization as of September 30, 2023, as retrospectively adjusted to reflect our Reverse Stock Split:

- on an actual basis;
- on an as adjusted basis to give effect to the events above and the issuance and sale of 200,000,000 shares of our Common Stock at an assumed Purchase Price to Selling Stockholder of \$0.123 per share, the price of our Common Stock on February 2, 2024.

You should read this information in conjunction with “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*” and our consolidated financial statements and related notes for the three months ended March 31, 2023, three and six months ended June 30, 2023 and three and nine months ended September 30, 2023 and for the fiscal year ended December 31, 2022, included in our Annual Report on Form 10-K for the year ended December 31, 2022 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023 and September 30, 2023, all of which are incorporated by reference herein.

<i>(in thousands)</i>	As of September 30, 2023 (unaudited)	
	Actual	As adjusted
Cash and Cash Equivalents:	\$ 2,056	\$ 26,216
Total Current Liabilities:	2,537	2,537
Total Long-Term Liabilities:	355	355
Stockholders’ Equity (Deficit):		
Common Stock, par value \$0.0001 per share: 800,000,000 shares authorized and 6,880,049 shares outstanding, actual; shares authorized and 206,880,049 shares outstanding, as adjusted	7	207
Preferred Stock, undesignated, authorized 50,000,000 shares		
Series A preferred stock, par value \$0.0001; 300 shares authorized, 251 shares outstanding as of September 30, 2023 Series B preferred stock, par value \$0.0001; 1,500 shares authorized, 1,443 shares outstanding as of September 30, 2023 Series C preferred stock, par value \$0.0001; 600,000 shares authorized, 500,756 shares outstanding as of September 30, 2023 Series F preferred stock, par value \$0.0001; 9,073 shares authorized, 4,448 shares outstanding as of September 30, 2023 Series F-1 preferred stock, par value \$0.0001; 9,052 shares authorized, 653 shares outstanding as of September 30, 2023 Series F-2 preferred stock, par value \$0.0001; 9,052 shares authorized, 1,153 shares outstanding as of September 30, 2023	—	—
Additional paid-in capital	116,956	140,916
Accumulated deficit	(107,689)	(107,689)
Total stockholders’ equity	\$ 9,274	\$ 33,434

The as adjusted information discussed above is illustrative only.

The total number of shares of our Common Stock reflected in the discussion and table above is based on 6,880,049 shares outstanding as of September 30, 2023, as retrospectively adjusted to reflect our Reverse Stock Split excludes:

- 157,779 shares of Common Stock issuable upon the exercise of options of which 143,325 have vested at a weighted average exercise price of \$168.04 per share as of September 30, 2023;
- 1,715,095 shares of Common Stock issuable upon the exercise of warrants of which 1,715,095 are exercisable at a weighted average exercise price of \$19.44 per share as of September 30, 2023;
- 750,000 shares of Common Stock issuable upon the exercise of Series E preferred stock warrants that are exercisable at a weighted average exercise price of \$30.00 per share as of September 30, 2023;

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- 7,139 shares of Common Stock issuable upon the vesting of restricted stock units of which 3,344 have vested;
- 745,531 shares of Common Stock issuable upon the conversion of 251 shares of Series A Preferred Stock, 1,443 shares of Series B Preferred Stock, 500,576 shares of Series C Preferred Stock, 4,448 shares of Series F Preferred Stock, 653 shares of Series F-1 Preferred Stock, and 1,153 shares of Series F-2 Preferred Stock.
- 200,205 shares of Common Stock issuable to settle commitment shares as of September 30, 2023.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth, as of December 31, 2023, information regarding beneficial ownership of our capital stock by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our Common Stock;
- each of our Named Executive Officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The percentage ownership information shown in the table prior to this offering is based upon 26,043,965 shares of Common Stock outstanding as of December 31, 2023.

Name of Beneficial Owner and Address ⁽¹⁾	Common Stock Beneficially Owned Prior to this Offering ⁽²⁾	
	Shares	% ⁽³⁾
<i>Officers and Directors</i>		
Croxall Family Trust ⁽⁴⁾	431,506	1.38%
Timothy Koch ⁽⁵⁾	31,724	*
Joel Krutz ⁽⁶⁾	187,669	*
Dr. DJ Nag ⁽⁷⁾	51,450	*
Daniel Marcus	50,000	*
Scott Hobbs	20,833	*
All current officers and directors as a group (6 persons)	773,182	2.45%

* Less than 1.0%

(1) Unless otherwise noted, all addresses are c/o Crown Electrokinetics Corp., at 11601 Wilshire Blvd., Suite 2240, Los Angeles, California 90025.

(2) A person is considered to beneficially own any shares: (i) over which such person, directly or indirectly, exercises sole or shared voting or investment power, or (ii) of which such person has the right to acquire beneficial ownership at any time within 60 days (such as through exercise of stock options or warrants). Unless otherwise indicated, voting and investment power relating to the shares shown in the table for our directors and executive officers is exercised solely by the beneficial owner or shared by the owner and the owner's spouse or children.

(3) Based upon 30,868,347 shares of Common Stock outstanding on February 2, 2024.

(4) Includes options to purchase 57,275 shares of our Common Stock and 360,406 vested restricted stock units.

(5) Includes options to purchase 20,676 shares of our Common Stock and 4,382 vested restricted stock units.

(6) Includes 787 vested restricted stock units and options to purchase 1,363 shares of our Common Stock.

(7) Includes 617 vested restricted stock units and options to purchase 566 shares of our Common Stock.

DESCRIPTION OF SECURITIES

The following descriptions of our Common Stock, Warrants and certain provisions of our Certificate of Incorporation, as amended, our Bylaws and Delaware law are summaries. You should also refer to our Charter and our Bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

Authorized Capital Stock

Following the Reverse Stock Split, our authorized capital stock consists of 800,000,000 shares of Common Stock, par value \$0.0001 per share, and 50,000,000 shares of preferred stock, par value \$0.0001 per share, including 300 shares of Series A Preferred Stock, 1,500 shares of Series B Preferred stock, 600,000 shares of Series C Preferred Stock, 7,000 shares of Series D Preferred Stock, 77,000 shares of Series E Preferred Stock, 9,073 shares of Series F Preferred Stock, 9,052 shares of Series F-1 Preferred Stock, and 9,052 of Series F-2 Preferred Stock. Following the Reverse Stock Split, as of February 2, 2024, 30,868,347 shares of Common Stock were issued and outstanding, 251 shares of Series A Preferred Stock were issued and outstanding, 1,443 shares of Series B Preferred Stock were issued and outstanding, 500,756 shares of Series C Preferred Stock were issued and outstanding, 0 shares of Series D Preferred Stock were issued and outstanding, 0 shares of Series E Preferred Stock were issued and outstanding, 4,448 shares of Series F Preferred Stock were issued and outstanding, 653 shares of Series F-1 Preferred Stock were issued and outstanding, and 1,153 shares of Series F-2 Preferred Stock were issued and outstanding.

Common Stock

Our Common Stock is traded on Nasdaq under the symbol “CRKN.” The registrar and transfer agent for our Common Stock is VStock Transfer, LLC, located at 18 Lafayette Place Woodmere, New York 11598.

Voting, Dividend and Other Rights. Each outstanding share of Common Stock entitles the holder to one vote on all matters presented to the shareholders for a vote. Holders of shares of Common Stock have no cumulative voting, preemptive, subscription or conversion rights. All shares of Common Stock to be issued pursuant to this registration statement will be duly authorized, fully paid and non-assessable. Our Board of Directors determines if and when distributions may be paid out of legally available funds to the holders. To date, we have not declared any dividends with respect to our Common Stock. Our declaration of any cash dividends in the future will depend on our Board of Directors’ determination as to whether, in light of our earnings, financial position, cash requirements and other relevant factors existing at the time, it appears advisable to do so. We do not anticipate paying cash dividends on the Common Stock in the foreseeable future.

Rights Upon Liquidation. Upon liquidation, subject to the right of any holders of the preferred stock to receive preferential distributions, each outstanding share of Common Stock may participate pro rata in the assets remaining after payment of, or adequate provision for, all our known debts and liabilities.

Majority Voting. The holders of a majority of the outstanding shares of Common Stock constitute a quorum at any meeting of the shareholders. A plurality of the votes cast at a meeting of shareholders elects our directors. The Common Stock does not have cumulative voting rights. Therefore, the holders of a majority of the outstanding shares of Common Stock can elect all of our directors. In general, a majority of the votes cast at a meeting of shareholders must authorize shareholder actions other than the election of directors. Most amendments to our certificate of incorporation require the vote of the holders of a majority of all outstanding voting shares.

Preferred Stock

Authority of Board of Directors to Create Series and Fix Rights. Under our certificate of incorporation, as amended, our Board of Directors can issue up to 50,000,000 shares of preferred stock from time to time in one or more series. The Board of Directors is authorized to fix by resolution as to any series the designation and number of shares of the series, the voting rights, the dividend rights, the redemption price, the amount payable upon liquidation or dissolution, the conversion rights, and any other designations, preferences or special rights or restrictions as may be permitted by law. Unless the nature of a particular transaction and the rules of law applicable thereto require such approval, our Board of Directors has the authority to issue these shares of preferred stock without shareholder approval.

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Series A Preferred Stock and Series B Preferred Stock

On January 22, 2021, we filed Amended and Restated Certificates of Designation, Preferences and Rights to create our Series A Preferred Stock and Series B Preferred Stock (collectively, “Preferred Stock”). The preferences, rights and terms of the Series A Preferred Stock and Series B Preferred Stock are identical except for the conversion price associated with each.

Voluntary Conversion. The Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of Common Stock determined by dividing the Stated Value of such Preferred Stock (which is \$1,000) by the conversion price. The current conversion price is \$79.80 for the Series A Preferred Stock and \$42.60 for the Series B Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our Common Stock, (ii) subdivide outstanding shares of our Common Stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our Common Stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our Common Stock, any shares of our capital stock.

Mandatory Conversion. If (i) the closing price of our Common Stock exceeds 300% of the then-current conversion price for five consecutive trading days, (ii) the daily average trading volume during thirty consecutive trading days was in excess of \$100,000 per trading day, (iii) our Common Stock is DWAC eligible and not subject to a “DTC chill” and (iv) the shares of our Common Stock are freely tradeable pursuant to Rule 144 of the Securities Act, we have the right to require the holders of Preferred Stock to convert all remaining shares of Preferred Stock into shares of Common Stock.

Voting, Dividend and Other Rights. Holders of Preferred Stock shall have no voting rights. Each outstanding share of Preferred Stock entitles the holder, from and after the second anniversary of the issuance date thereof, to quarterly dividends at an annual rate of 8% of the Stated Value per share of Preferred Stock (subject to adjustment), payable in either cash or shares of Common Stock at our discretion.

Rights Upon Liquidation. In the event of any liquidation, dissolution or winding-up of the company, whether voluntary or involuntary, the holders of Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Preferred Stock before any distribution or payment shall be made to the holders of our Common Stock. Thereafter, the holders of Preferred Stock shall be entitled to receive the same amount that a holder of our Common Stock is entitled to receive if the shares of Preferred Stock were fully converted into shares of our Common Stock, which amounts are to be paid *pari passu* with holders of our Common Stock, Series C Preferred Stock and Series D Preferred Stock.

Series C Preferred Stock

On March 31, 2021, we filed Certificate of Designation, Preferences and Rights to create our Series C Preferred Stock (“Series C Preferred Stock”). The preferences, rights and terms of the Series C Preferred Stock are as follows.

Voluntary Conversion. The Series C Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of Common Stock determined by dividing the Stated Value of such Series C Preferred Stock (which is \$1.00) by the conversion price. The conversion price is \$53.58 for the Series C Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our Common Stock, (ii) subdivide outstanding shares of our Common Stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our Common Stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our Common Stock, any shares of our capital stock.

Mandatory Conversion. If (i) the closing price of our Common Stock exceeds 300% of the then-current conversion price for five consecutive trading days, (ii) the daily average trading volume during thirty consecutive trading days was in excess of \$100,000 per trading day, (iii) our Common Stock is DWAC eligible and not subject to a “DTC chill” and (iv) the shares of our Common Stock are freely tradeable pursuant to Rule 144 of the Securities Act, we have the right to require the holders of Series C Preferred Stock to convert all remaining shares of Series C Preferred Stock into shares of Common Stock.

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Voting, Dividend and Other Rights. Holders of Series C Preferred Stock shall have no voting rights. Each outstanding share of Series C Preferred Stock entitles the holder, from and after the second anniversary of the issuance date thereof, to quarterly dividends at an annual rate of 8% of the Stated Value per share of Series C Preferred Stock (subject to adjustment), payable in either cash or shares of Common Stock at our discretion.

Rights Upon Liquidation. In the event of any liquidation, dissolution or winding-up of the company, whether voluntary or involuntary, the holders of Series C Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Series C Preferred Stock before any distribution or payment shall be made to the holders of our Common Stock. Thereafter, the holders of Series C Preferred Stock shall be entitled to receive the same amount that a holder of our Common Stock is entitled to receive if the shares of Series C Preferred Stock were fully converted into shares of our Common Stock, which amounts are to be paid *pari passu* with holders of our Common Stock, Series A Preferred Stock, Series B Preferred Stock and Series D Preferred Stock.

Series D Preferred Stock

On July 8, 2022, we filed the Certificate of Designations, Preferences and Rights (the “Series D Certificate of Designations”) to create our Series D Preferred Stock (“Series D Preferred Stock”). On February 1, 2023, we filed Amendment No. 1 to the Series D Certificate of Designations. The preferences, rights and terms of the Series D Preferred Stock, as amended, are as follows.

Voluntary Conversion. The Series D Preferred Stock is convertible at any time at the option of the holder thereof, into that number of shares of Common Stock determined by dividing the Stated Value of such Series D Preferred Stock (which is \$1,000) by the conversion price. The conversion price is \$30.00 for the Series D Preferred Stock. The conversion price shall be adjusted in the event that we (i) pay a stock dividend or otherwise make a distribution or distributions payable in shares of our Common Stock, (ii) subdivide outstanding shares of our Common Stock into a larger number of shares, (iii) combine (including by way of a reverse stock split) outstanding shares of our Common Stock into a small number of shares, or (iv) issue, in the event of a reclassification of shares of our Common Stock, any shares of our capital stock.

Voting, Dividend and Other Rights. Holders of Series D Preferred Stock shall have no voting rights. Each outstanding share of Series D Preferred Stock entitles the holder to cumulative dividends at an annual rate of 12% of the Stated Value per share of Series D Preferred Stock (subject to adjustment), payable in shares of Common Stock at our discretion.

Rights Upon Liquidation. In the event of any liquidation, dissolution or winding-up of the company, whether voluntary or involuntary, the holders of Series D Preferred Stock shall be entitled to receive out of our assets an amount equal to the Stated Value for each share of Series D Preferred Stock before any distribution or payment shall be made to the holders of our Common Stock. Thereafter, the holders of Series D Preferred Stock shall be entitled to receive the same amount that a holder of our Common Stock is entitled to receive if the shares of Series D Preferred Stock were fully converted into shares of our Common Stock, which amounts are to be paid *pari passu* with holders of our Common Stock, Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock.

Series E Preferred Stock

On February 1, 2023, we filed the Certificate of Designations, Preferences and Rights to create our Series E Preferred Stock. The preferences, rights and terms of the Series E Preferred Stock are as follows.

Voluntary Conversion. Each share of Series E Preferred Stock is convertible at any time at the option of the holder thereof into 1,000 shares of Common Stock, subject to adjustment for stock splits, stock combinations and the like.

Voting, Dividend and Other Rights. Holders of Series E Preferred Stock shall have no voting rights. Each outstanding share of Series E Preferred Stock entitles the holder to receive dividends on an as converted basis together with holders of Common Stock.

Rights Upon Liquidation. In the event of any liquidation, dissolution or winding-up of the company, whether voluntary or involuntary, the holders of Series E Preferred Stock shall be entitled to receive out of our assets the same amount that a holder of Common Stock would receive if the Series E Preferred Stock were fully converted (disregarding any conversion limitations), which amounts are to be paid *pari passu* with holders of our Common Stock, Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock.

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Series F Preferred Stock

On June 5, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F Preferred Stock with the Secretary of State of the State of Delaware (the “Series F COD”). The preferences, rights and terms of the Series F Preferred Stock are as follows.

Designation, Amount, and Par Value. The number of shares of Series F Preferred Stock designated is 9,073. The shares of Series F Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

Conversion Price. The Series F Preferred Stock will be convertible into shares of Common Stock at an initial conversion price of \$8.87 (subject to adjustment pursuant to the Certificate of Designation) (the “Conversion Price”).

Dividends. The Series F Preferred Stock will accrue dividends at a rate of 10% per annum (the “Series F Dividend Rate”) payable on the first calendar day of each month in shares of Common Stock, cash, or a combination of the two, at our option. If any shares of Series F Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F COD), the Series F Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F Preferred Stock remain outstanding.

Liquidation. In the event of a Liquidation Event (as defined in the Series F COD), the holders the Series F Preferred Stock shall be entitled to receive in cash out of the assets of the company, before any amount shall be paid to the holders of any other shares of capital stock of the company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F Warrants) with respect to the outstanding portion of all warrants held by such holder of Series F Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the Series F Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F Preferred Stock would receive if they converted such share of Series F Preferred Stock into Common Stock immediately prior to the date of such payment

Company Redemption. We may redeem all, or any portion, of the Series F Preferred Stock for cash, at a price per share of Series F Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F Preferred Stock (the “Series F Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F COD) exists, the product of (1) the Series F Conversion Amount divided by the Series F Conversion Price with respect to the amount being redeemed by us multiplied by (2) the greatest Closing Sale Price (as defined in the Series F COD) of the Common Stock on any trading day during the period commencing on the date immediately preceding the notice given by us of such redemption and ending on the trading day immediately prior to the date we make the entire payment required to be made for such redemption.

Maximum Percentage. Holders of Series F Preferred Stock are prohibited from converting shares of Series F Preferred Stock into shares of Common Stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “Series F Maximum Percentage”) of the total number of shares of Common Stock issued and outstanding immediately after giving effect to such conversion.

Voting Rights. The holders of Series F Preferred Stock shall have the right to vote with the holders of shares of Common Stock, voting together as one class, with a number of votes per share of Series F Preferred Stock as is equal to the number of shares of Common Stock into which it is the Series F Preferred Stock is then convertible (subject to the Series F Maximum Percentage) on all matters in which the holders of Series F Preferred Stock are permitted to vote with the class of shares of Common Stock pursuant to applicable law. Holders of Series F Preferred Stock are also entitled to vote as a class as expressly provided in the Series F COD and where required pursuant to applicable law.

Series F-1 Preferred Stock

On June 13, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-1 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-1 COD”). The preferences, rights and terms of the Series F-1 Preferred Stock are as follows.

Designation, Amount, and Par Value. The number of shares of Series F-1 Preferred Stock designated is 9,052. The shares of Series F-1 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

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Conversion Price. The Series F-1 Preferred Stock will be convertible into shares of Common Stock at an initial conversion price of \$8.99 (subject to adjustment pursuant to the Series F-1 COD) (the “F-1 Conversion Price”).

Dividends. The Series F-1 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-1 Dividend Rate”) payable on the first calendar day of each month in shares of Common Stock, cash, or a combination of the two, at our option. If any shares of Series F-1 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-1 COD), the F-1 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-1 Preferred Stock remain outstanding.

Liquidation. In the event of a Liquidation Event (as defined in the Series F-1 COD), the holders the Series F-1 Preferred Stock shall be entitled to receive in cash out of the assets of the company, before any amount shall be paid to the holders of any other shares of capital stock of the company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-1 Warrants) with respect to the outstanding portion of all Series F-1 Warrants held by such holder of Series F-1 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-1 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-1 Preferred Stock would receive if they converted such share of Series F-1 Preferred Stock into Common Stock immediately prior to the date of such payment

Company Redemption. We may redeem all, or any portion, of the Series F-1 Preferred Stock for cash, at a price per share of Series F-1 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-1 Preferred Stock (the “F-1 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-1 COD) exists, the product of (1) the F-1 Conversion Amount divided by the F-1 Conversion Price with respect to the amount being redeemed by us multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-1 COD) of the Common Stock on any trading day during the period commencing on the date immediately preceding the notice given by us of such redemption and ending on the trading day immediately prior to the date we make the entire payment required to be made for such redemption.

Maximum Percentage. Holders of Series F-1 Preferred Stock are prohibited from converting shares of Series F-1 Preferred Stock into shares of Common Stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-1 Maximum Percentage”) of the total number of shares of Common Stock issued and outstanding immediately after giving effect to such conversion.

Voting Rights. The holders of Series F-1 Preferred Stock shall have the right to vote with the holders of shares of Common Stock, voting together as one class, with a number of votes per share of Series F-1 Preferred Stock as is equal to the number of shares of Common Stock into which it is the Series F-1 Preferred Stock is then convertible (subject to the F-1 Maximum Percentage) on all matters in which the holders of Series F-1 Preferred Stock are permitted to vote with the class of shares of Common Stock pursuant to applicable law. Holders of Series F-1 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-1 COD and where required pursuant to applicable law.

Series F-2 Preferred Stock

On June 14, 2023, we filed a Certificate of Designations, Preferences and Rights of the Series F-2 Preferred Stock with the Secretary of State of the State of Delaware (the “Series F-2 COD”). The preferences, rights and terms of the Series F-2 Preferred Stock are as follows.

Designation, Amount, and Par Value. The number of shares of Series F-2 Preferred Stock designated is 9,052. The shares of Series F-2 Preferred Stock have a par value of \$0.0001 per share and a stated value of \$1,000 per share.

Conversion Price. The Series F-2 Preferred Stock will be convertible into shares of Common Stock at an initial conversion price of \$9.23 (subject to adjustment pursuant to the Series F-2 COD) (the “F-2 Conversion Price”).

Dividends. The Series F-2 Preferred Stock will accrue dividends at a rate of 10% per annum (the “F-2 Dividend Rate”) payable on the first calendar day of each month in shares of Common Stock, cash, or a combination of the two, at our option. If any shares of Series F-2 Preferred Stock remain outstanding on the eighteen (18) month anniversary of the Initial Issuance Date (as defined in the Series F-2 COD), the F-2 Dividend Rate will increase by thirty percent (30%) on the first calendar day of each quarter until no shares of Series F-2 Preferred Stock remain outstanding.

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Liquidation. In the event of a Liquidation Event (as defined in the Series F-2 COD), the holders the Series F-2 Preferred Stock shall be entitled to receive in cash out of the assets of the company, before any amount shall be paid to the holders of any other shares of capital stock of the company, equal to the sum of (i) the Black Scholes Value (as defined in the Series F-2 Warrants) with respect to the outstanding portion of all Series F-2 Warrants held by such holder of Series F-2 Preferred Stock (without regard to any limitations on the exercise thereof) as of the date of such event and (ii) the greater of (A) 125% of the F-2 Conversion Amount (as defined below) on the date of such payment and (B) the amount per share such holder of Series F-2 Preferred Stock would receive if they converted such share of Series F-2 Preferred Stock into Common Stock immediately prior to the date of such payment

Company Redemption. We may redeem all, or any portion, of the Series F-2 Preferred Stock for cash, at a price per share of Series F-2 Preferred Stock equal to the greater of (i) the sum of the stated value plus any declared and unpaid dividends on such share of Series F-2 Preferred Stock (the “F-2 Conversion Amount”), and (ii) solely if an Equity Conditions Failure (as defined in the Series F-2 COD) exists, the product of (1) the F-2 Conversion Amount divided by the F-2 Conversion Price with respect to the amount being redeemed by us multiplied by (2) the greatest Closing Sale Price (as defined in the Series F-2 COD) of the Common Stock on any trading day during the period commencing on the date immediately preceding the notice given by us of such redemption and ending on the trading day immediately prior to the date we make the entire payment required to be made for such redemption.

Maximum Percentage. Holders of Series F-2 Preferred Stock are prohibited from converting shares of Series F-2 Preferred Stock into shares of Common Stock if, as a result of such conversion, such holder, together with its affiliates, would beneficially own more than a specified percentage (to be initially set at 4.99% and thereafter adjusted by the holder to a number between 4.99% and 9.99%) (the “F-2 Maximum Percentage”) of the total number of shares of Common Stock issued and outstanding immediately after giving effect to such conversion.

Voting Rights. The holders of Series F-2 Preferred Stock shall have the right to vote with the holders of shares of Common Stock, voting together as one class, with a number of votes per share of Series F-2 Preferred Stock as is equal to the number of shares of Common Stock into which it is the Series F-2 Preferred Stock is then convertible (subject to the F-2 Maximum Percentage) on all matters in which the holders of Series F-2 Preferred Stock are permitted to vote with the class of shares of Common Stock pursuant to applicable law. Holders of Series F-2 Preferred Stock are also entitled to vote as a class as expressly provided in the Series F-2 COD and where required pursuant to applicable law.

Warrants

At September 30, 2023, the following warrants were outstanding:

Underlying Shares of Common Stock	Expiration Date	Initial Exercise Price⁽¹⁾
931	November 14, 2023	\$ 202.50
1,924	May 9, 2024	\$ 75.60
7,843	June 3, 2025	\$ 66.96
3,467	July 7, 2025	\$ 203.40
4,421	September 11, 2025	\$ 225.00
8,872	October 1, 2025	\$ 202.50
1,666	November 30, 2025	\$ 279.00
15,679	January 25, 2026	\$ 23.40
5,925	January 25, 2026	\$ 203.40
3,920	January 26, 2026	\$ 23.40
1,481	January 26, 2026	\$ 203.40
4,136	January 26, 2026	\$ 337.50
2,227	January 28, 2026	\$ 337.50
1,679	September 14, 2026	\$ 75.60
5,000	September 24, 2026	\$ 300.00
2,500	September 27, 2026	\$ 244.80
1,250	October 28, 2026	\$ 244.20
833	November 5, 2026	\$ 247.80
1,667	December 21, 2026	\$ 182.40
3,333	March 17, 2027	\$ 120.00
1,042	July 22, 2027	\$ 48.00
13,568	July 26, 2027	\$ 78.00
5,000	August 12, 2027	\$ 45.00
255,893	October 19, 2027	\$ 19.20
106,764	February 3, 2028	\$ 19.20
41,667	January 3, 2028	\$ 19.32
750,000	February 2, 2028	\$ 30.00
96,890	February 28, 2028	\$ 19.20
592,129	June 4, 2028	\$ 8.87
398,377	June 13, 2028	\$ 8.99
124,946	June 14, 2028	\$ 9.23

(1) Pursuant to the terms of such warrants, the exercise price is subject to adjustment in the event of stock splits, combinations or the like of our Common Stock.

Anti-Takeover Effects of Certain Provisions of Our Articles of Incorporation, as Amended, and Our Bylaws

Our certificate of incorporation and our Bylaws contain certain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions and certain provisions of Delaware law, which are summarized below, may discourage coercive takeover practices and inadequate takeover bids. These provisions also may encourage persons seeking to acquire control of us to first negotiate with our Board of Directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Undesignated Preferred Stock. As discussed above, our Board of Directors has the ability to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in our control or management.

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Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- Prior to the date of the transaction, the Board of Directors of the corporation approved either the business combination or the transaction that resulted in the stockholder's becoming an interested stockholder;
- Upon completion of the transaction that resulted in the stockholder's becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- At or subsequent to the date of the transaction, the business combination is approved by the Board of Directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66-2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board of Directors does not approve in advance. We also anticipate that Section 203 may discourage attempts that might result in a premium over the market price for the shares of Common Stock held by stockholders.

The provisions of Delaware law and the provisions of our certificate of incorporation and Bylaws, as amended, could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our Common Stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

SELLING STOCKHOLDER

This prospectus relates to the offer and sale by Keystone Capital Partners of up to 200,000,000 shares of Common Stock that have been and may be issued by us to Keystone Capital Partners under the Purchase Agreement. For additional information regarding the shares of Common Stock included in this prospectus, see the section titled “*Committed Equity Financing*” above. We are registering the shares of Common Stock included in this prospectus pursuant to the provisions of the Registration Rights Agreement we entered into with Keystone Capital Partners on July 20, 2023 in order to permit the Selling Stockholder to offer the shares for resale from time to time. Except for the purchase by Keystone Capital Partners of certain of our convertible securities, preferred stock, and promissory notes and the transactions contemplated by the Purchase Agreement and the Registration Rights Agreement, Keystone Capital Partners has not had any material relationship with us within the past three years. As used in this prospectus, the term “Selling Stockholder” means Keystone Capital Partners, LLC.

The table below presents information regarding the Selling Stockholder and the shares of Common Stock that may be resold by the Selling Stockholder from time to time under this prospectus. This table is prepared based on information supplied to us by the Selling Stockholder, and reflects holdings as of February 2, 2024. The number of shares in the column “Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus” represents all of the shares of Common Stock being offered for resale by the Selling Stockholder under this prospectus. Selling Stockholder may sell some, all or none of the shares being offered for resale in this offering. We do not know how long the Selling Stockholder will hold the shares before selling them, and we know of no existing arrangements between the Selling Stockholder or any other stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the shares of our Common Stock offered by this prospectus.

Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act, and includes shares of Common Stock with respect to which the Selling Stockholder has voting power, including the power to vote or to direct the voting of such shares, and/or investment power, including the power to dispose or to direct the disposition of such shares. The percentage of shares of Common Stock beneficially owned by the Selling Stockholder prior to the offering shown in the table below is based on an aggregate 30,868,347 shares of our Common Stock outstanding on February 2, 2024.

Because the purchase price per share to be paid by the Selling Stockholder for the shares of Common Stock that we may, in our discretion, elect to sell to the Selling Stockholder from time to time after the date of this prospectus in Purchases pursuant to the Purchase Agreement, if any, will fluctuate based on the market prices of our Common Stock at the times we elect to sell such shares to the Selling Stockholder in Purchases under the Purchase Agreement, it is not possible for us to predict, as of the date of this prospectus and prior to any such Purchases under the Purchase Agreement, the actual number of shares of Common Stock that we will sell to the Selling Stockholder under the Purchase Agreement, which may be fewer than the number of shares of Common Stock being offered for resale by the Selling Stockholder under this prospectus. The fourth column assumes the resale by the Selling Stockholder of all of the shares of Common Stock being offered pursuant to this prospectus.

Name of Selling Stockholder	Number of Shares of Common Stock Owned Prior to Offering		Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus	Number of Shares of Common Stock Owned After Offering	
	Number ⁽¹⁾	Percent ⁽²⁾		Number ⁽³⁾	Percent ⁽²⁾
Keystone Capital Partners, LLC ⁽⁴⁾	144,512	*	200,000,000	144,512	*

* Represents beneficial ownership of less than 1% of the outstanding shares of our Common Stock.

(1) This number consists of shares issuable to the Selling Stockholder upon exercise of outstanding warrants and conversion of outstanding Series F Preferred Stock and Series F-2 Preferred Stock. In accordance with Rule 13d-3(d) under the Exchange Act, we have excluded from the number of shares beneficially owned prior to the offering all of the shares that the Selling Stockholder may be required to purchase from us at our election from time to time after the date of this prospectus pursuant to Purchases under the Purchase Agreement, because the issuance of such shares is solely at our discretion and is subject to conditions contained in the Purchase Agreement, the satisfaction of which are entirely outside of the Selling Stockholder’s control, including the registration statement that includes this prospectus becoming and remaining effective. Furthermore, the Purchases of Common Stock are subject to certain agreed upon maximum amount limitations set forth in the Purchase Agreement. Also, the Purchase Agreement prohibits us from issuing and selling any shares of our Common

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Stock to the Selling Stockholder to the extent such shares, when aggregated with all other shares of our Common Stock then beneficially owned by the Selling Stockholder, would cause the Selling Stockholder's beneficial ownership of Common Stock to exceed the 4.99% Beneficial Ownership Limitation. The Beneficial Ownership Limitation may not be amended or waived under the Purchase Agreement.

- (2) Applicable percentage ownership is based on 30,868,347 shares of our Common Stock outstanding as of February 2, 2024.
- (3) Assumes the sale of all shares being offered pursuant to this prospectus.
- (4) The business address of Keystone Capital Partners, LLC is 139 Fulton Street, Suite 412, New York, NY 10038. Keystone Capital Partners, LLC's principal business is that of a private investor. Ranz Group, LLC, a Delaware limited liability company, is the managing member of Keystone Capital Partners, LLC and the beneficial owner of 97% of the membership interests in Keystone Capital Partners, LLC. Fredric G. Zaino is the managing member of Ranz Group, LLC and has sole voting control and investment discretion over securities beneficially owned directly by Keystone Capital, LLC and indirectly by Ranz Group, LLC. We have been advised that none of Mr. Zaino, Ranz Group, LLC or Keystone Capital Partners, LLC is a member of the Financial Industry Regulatory Authority, or FINRA, or an independent broker-dealer, or an affiliate or associated person of a FINRA member or independent broker-dealer. The foregoing should not be construed in and of itself as an admission by Mr. Zaino as to beneficial ownership of the securities beneficially owned directly by Keystone Capital Partners, LLC and indirectly by Ranz Group, LLC.

PLAN OF DISTRIBUTION

The shares of Common Stock offered by this prospectus are being offered by the Selling Stockholder, Keystone Capital Partners, LLC. The shares may be sold or distributed from time to time by the Selling Stockholder directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at negotiated prices, or at fixed prices, which may be changed. The sale of the shares of our Common Stock offered by this prospectus could be effected in one or more of the following methods:

- ordinary brokers' transactions;
- transactions involving cross or block trades;
- through brokers, dealers, or underwriters who may act solely as agents;
- "at the market" into an existing market for our Common Stock;
- in other ways not involving market makers or established business markets, including direct sales to purchasers or sales effected through agents;
- in privately negotiated transactions; or
- any combination of the foregoing.

In order to comply with the securities laws of certain states, if applicable, the shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the state's registration or qualification requirement is available and complied with.

Keystone Capital Partners is an "underwriter" within the meaning of Section 2(a)(11) of the Securities Act.

Keystone Capital Partners has informed us that it intends to use one or more registered broker-dealers to effectuate all sales, if any, of our Common Stock that it has acquired and may in the future acquire from us pursuant to the Purchase Agreement. Such sales will be made at prices and at terms then prevailing or at prices related to the then current market price. Each such registered broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Keystone Capital Partners has informed us that each such broker-dealer will receive commissions from Keystone Capital Partners that will not exceed customary brokerage commissions.

Brokers, dealers, underwriters or agents participating in the distribution of the shares of our Common Stock offered by this prospectus may receive compensation in the form of commissions, discounts, or concessions from the purchasers, for whom the broker-dealers may act as agent, of the shares sold by the Selling Stockholder through this prospectus. The compensation paid to any such particular broker-dealer by any such purchasers of shares of our Common Stock sold by the Selling Stockholder may be less than or in excess of customary commissions. Neither we nor the Selling Stockholder can presently estimate the amount of compensation that any agent will receive from any purchasers of shares of our Common Stock sold by the Selling Stockholder.

We know of no existing arrangements between the Selling Stockholder or any other stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the shares of our Common Stock offered by this prospectus.

We may from time to time file with the SEC one or more supplements to this prospectus or amendments to the registration statement of which this prospectus forms a part to amend, supplement or update information contained in this prospectus, including, if and when required under the Securities Act, to disclose certain information relating to a particular sale of shares offered by this prospectus by the Selling Stockholder, including the names of any brokers, dealers, underwriters or agents participating in the distribution of such shares by the Selling Stockholder, any compensation paid by the Selling Stockholder to any such brokers, dealers, underwriters or agents, and any other required information.

We will pay the expenses incident to the registration under the Securities Act of the offer and sale of the shares of our Common Stock covered by this prospectus by the Selling Stockholder. As consideration for its irrevocable commitment to purchase our Common Stock under the Purchase Agreement, (i) we issued to Keystone Capital Partners 21,840 shares of our Common Stock as Initial Commitment Shares upon effectiveness of the Prior Registration Statement and (ii) we

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have committed to issue additional shares of Common Stock to Keystone Capital Partners with an aggregate value of \$440,000, which assuming a price of \$0.123 per share (which represents the closing price of our Common Stock on Nasdaq on February 2, 2024), would equal 3,577,236 shares of Common Stock (the “Commitment Shares”). We also have agreed to reimburse Keystone Capital Partners for the fees and disbursements of its counsel, payable upon execution of the Purchase Agreement, in an amount not to exceed \$5,000.

We also have agreed to indemnify Keystone Capital Partners and certain other persons against certain liabilities in connection with the offering of shares of our Common Stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Keystone Capital Partners has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Keystone Capital Partners specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable.

We estimate that the total expenses for the offering will be approximately \$15,000.

Keystone Capital Partners has represented to us that at no time prior to the date of the Purchase Agreement has Keystone Capital Partners or its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of our Common Stock or any hedging transaction, which establishes a net short position with respect to our Common Stock. Keystone Capital Partners has agreed that during the term of the Purchase Agreement, neither Keystone Capital Partners, nor any of its agents, representatives or affiliates will enter into or effect, directly or indirectly, any of the foregoing transactions.

We have advised the Selling Stockholder that it is required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes the Selling Stockholder, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the securities offered by this prospectus.

This offering will terminate on the date that all shares of our Common Stock offered by this prospectus have been sold by the Selling Stockholder.

Our Common Stock is currently listed on The Nasdaq Capital Market under the symbol “CRKN”.

DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**DIRECTORS**

Name	Age	Position	Director Since
Douglas Croxall	55	Chairman and Chief Executive Officer	2015
Daniel Marcus ⁽¹⁾⁽²⁾⁽³⁾	57	Director	2022
Dr. DJ Nag ⁽¹⁾⁽²⁾⁽³⁾	56	Director	2020
Scott Hobbs ⁽¹⁾⁽²⁾⁽³⁾	50	Director	2023
Joel Krutz	50	Chief Financial Officer, Chief Operating Officer, and Director	2023

- (1) Member of Audit Committee.
(2) Member of Compensation Committee.
(3) Member of Governance and Nominating Committee.

Douglas Croxall. Mr. Croxall is our Chief Executive Officer and Chairman of the Board of Directors. Prior to co-founding Crown, Mr. Croxall was the CEO and Chairman of the Board of Directors of Marathon Patent Group from November 2012 until December 2017. Mr. Croxall holds a BA degree from Purdue University and an MBA from Pepperdine University.

Dr. DJ Nag. Dr. Nag has served as a member of our Board of Directors since July 2020. Dr. Nag is the Chief Investment Officer at Ventech Solutions, a healthcare technology company that manages quality data for the Center for Medicare and Medicaid Services (CMS). He has successfully led Ohio State University, Rutgers University and University of Nebraska's technology transfer operations that included licensing, startup and investments. As an entrepreneur, he led a number of start-ups in the intellectual property strategy, artificial intelligence, and medical device space. As a consultant in patent monetization and intellectual property strategy, he has worked with many Fortune 500 companies, universities, and national governments. He was a Director of Ocean Tomo and a Vice President at ICAP Ocean Tomo, leading patent transaction markets. He was recognized as one of the top IP strategists by IAM300 in 2019. Dr. Nag was on the Board of the Association of University Technology Managers, Inc. (AUTM) from 2012 to 14, focused on educating the members around world on the importance of technology transfer and intellectual property. He is widely recognized as a global intellectual property strategist working with government and universities in Poland, Japan, India, Turkey, Brazil, South Korea, Ukraine and many other countries. Currently, he teaches intellectual property strategy and negotiations as a Professor of Practice at Rutgers University and a Visiting Professor at Shizuoka University. He volunteers as the first Executive-in-Residence at the Dublin City Schools, leading a startup academy for high school students and serves on the foundation board at the Dublin Methodist Hospital.

Daniel Marcus. Mr. Marcus has served as a member of our Board of Directors since October 2022. Mr. Marcus is the Principal and Founder of Marcus Capital. Prior to forming Marcus Capital in 2004, Mr. Marcus worked at Bear Stearns as a managing director and has over 25 years of investment experience. He earned his Bachelors of Business Degree in Economics from the University of Wisconsin-Madison. In addition to forming Marcus Capital, Mr. Marcus is a founding partner of Spark Ventures, a non-profit charitable organization. Mr. Marcus has been involved with various charities including 10 years as a Child Life Specialist at Children's Memorial Hospital, Chicago and two years at The Night Ministry, working to serve homeless and runaway youth.

Scott Hobbs. Mr. Hobbs has served as a member of our Board of Directors since August 2023. Since June 2021, Scott Hobbs has worked for Newmark as an office tenant representation broker in the Greater Dallas Area. He tracks office lease transactions (comps), building tenant stacks, current vacancies, lease roll & 'ghost' space, sublease space, state & municipal incentives, labor markets, and companies currently in the market for office space. He exclusively represents office tenants in all manner of transactions ranging from negotiated renewals, relocations, built-to-suit, sublease, expansion, contraction, building purchase, etc. Prior to joining Newmark, Mr. Hobbs was an Executive Director at Cushman Wakefield since July 2018. Prior to his role at Cushman Wakefield, Mr. Hobbs held a number of roles in the real estate industry. Before entering the real estate industry, Mr. Hobbs was a commissioned Navy SEAL Officer. A decorated combat veteran, Mr. Hobbs has circled the globe three times in the service of the United States Navy and Joint Special Operations Command. Mr. Hobbs earned a Bachelor of Business Administration degree from Texas A&M University.

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Joel Krutz. Mr. Krutz has served as a member of our Board of Directors since August 2023. Mr. Krutz is currently our Chief Financial Officer and Chief Operating Officer. Mr. Krutz is an experienced executive in finance and operations, with a history in building and developing financial reporting. Most recently, Mr. Krutz had served as CFO for ViacomCBS Networks International (“VCNI”), the premium content companies international division since 2015. As CFO of VCNI, Mr. Krutz successfully steered the business through a transformational period of expansion, diversification, and growth. Prior to his role as CFO of VCNI, Mr. Krutz held a number of progressive London and New York based CFO and senior strategic finance roles for Viacom where he built and developed financial infrastructure to support businesses through a range of rapid growth, turnaround, and portfolio optimization challenges. Originally from New Zealand, Mr. Krutz received a Bachelor of Management Studies with an Accounting major from Waikato University, obtained his professional CIMA qualification from the UK’s Association of Chartered Management Accountants, and CTAMU certification from Harvard Business School’s Executive program.

NON-DIRECTOR EXECUTIVE OFFICERS

Name	Age	Position
Timothy Koch	62	Chief Technology Officer

Timothy Koch is our Chief Technology Officer. Prior to co-founding Crown, he was in charge of the R&D team at HP that invented electrokinetic (EK) technology. He has over 30 years of engineering and management experience in both technology development and product manufacturing. He holds a BS from Cornell University and a MS from Stanford University, both degrees in Material Science & Engineering. He has also completed an Executive Development Program from the Cornell University Johnson Graduate School of Management.

CORPORATE GOVERNANCE

Director Independence

The Board of Directors utilizes NASDAQ's standards for determining the independence of its members. In applying these standards, the Board considers commercial, industrial, banking, consulting, legal, accounting, charitable and familial relationships, among others, in assessing the independence of directors, and must disclose any basis for determining that a relationship is not material. The Board has determined that Dr. DJ Nag, Scott Hobbs, and Daniel Marcus are independent directors within the meaning of the NASDAQ independence standards. In making these independence determinations, the Board did not exclude from consideration as immaterial any relationship potentially compromising the independence of any of the above directors.

Committees of the Board of Directors

The Board of Directors has established and currently maintains the following three standing committees: the Audit Committee, the Compensation Committee, and the Governance and Nominating and Committee (the "G&NC").

Currently, the Audit Committee consists of Mr. Marcus (Chair), Dr. Nag, and Mr. Hobbs, the Compensation Committee consists of Mr. Marcus (Chair), Dr. Nag and Mr. Hobbs, and the G&NC consists of Dr. Nag (Chair), Mr. Marcus, and Mr. Hobbs.

Audit Committee. Among other functions, the Audit Committee authorizes and approves the engagement of the independent registered public accounting firm, reviews the results and scope of the audit and other services provided by the independent registered public accounting firm, reviews our financial statements, reviews and evaluates our internal control functions, approves or establishes pre-approval policies and procedures for all professional audit and permissible non-audit services provided by the independent registered public accounting firm and reviews and approves any proposed related party transactions. The Board of Directors has determined that each of the current members of the Audit Committee is an independent director within the meaning of the NASDAQ independence standards and Rule 10A-3 promulgated by the SEC under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). In addition, the Board of Directors has determined that Mr. Marcus qualifies as an Audit Committee Financial Expert under applicable SEC Rules and that each of the members of the Audit Committee satisfies the NASDAQ standards of financial literacy and financial or accounting expertise or experience.

Compensation Committee. The Compensation Committee's functions include reviewing and approving the compensation and benefits for our executive officers, administering our equity compensation plans and making recommendations to the Board of Directors regarding these matters. The Board of Directors has determined that each current member of the Compensation Committee is an independent director within the meaning of the NASDAQ independence standards.

Governance and Nominating Committee. The G&NC searches for and recommends to the Board of Directors potential nominees for director positions and makes recommendations to the Board of Directors regarding the size, composition and compensation of the Board of Directors and its committees. The Board of Directors has determined that each current member of the G&NC is an independent director within the meaning of the NASDAQ independence standards.

Board Leadership Structure and Role in Risk Oversight

Our Board of Directors is currently chaired by Mr. Croxall, who also serves as our Chief Executive Officer, having been engaged in such roles since our inception. The Board does not believe that it is appropriate to prohibit one person from serving as both Chairman of the Board and Chief Executive Officer. Our Board will continually evaluate our leadership structure and could in the future decide to separate the Chairman and Chief Executive Officer positions if it believes that doing so would serve the best interests of our company and its stockholders.

The Board of Directors has not named a lead independent director. However, to strengthen the voice of our independent directors, we provide that such directors meet on a regular basis, and we have provided that all of the members of the Audit Committee, the Compensation Committee and the G&NC are independent.

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Our Board of Directors and the Audit Committee thereof is responsible for overseeing the risk management processes on behalf of our company. The Board and, to the extent applicable, the Audit Committee, receive and review periodic reports from management, auditors, legal counsel and others, as considered appropriate regarding our company's assessment of risks. Where applicable, the Audit Committee reports regularly to the full Board of Directors with respect to risk management processes. The Audit Committee and the full Board of Directors focus on the most significant risks facing our company and our company's general risk management strategy, and also ensure that risks undertaken by our company are consistent with the Board's appetite for risk. While the Board oversees the risk management of our company, management is responsible for day-to-day risk management processes. We believe this division of responsibilities is the most effective approach for addressing the risks facing our company and that our Board leadership structure supports this approach.

Family Relationships

There are no familial relationships between any of our executive officers and directors.

Director or Officer Involvement in Certain Legal Proceedings

Our directors and executive officers were not involved in any legal proceedings as described in Item 401(f) of Regulation S-K in the past ten years.

BUSINESS

Overview

We develop and sell optical switching film that can be embedded between sheets of glass or applied to the surface of glass, or other rigid substrates such as acrylic, to electronically control opacity (“DynamicTint™”). Originally developed by Hewlett-Packard (“HP”), our technology allows a transition between clear and dark in seconds and can be applied to a wide array of windows, including commercial buildings, automotive sunroofs, and residential skylights and windows. At the core of our proprietary and patent-protected technology is a thin film that is powered by electrically charged pigment which can reduce heat gain replacing common window tints but also providing a more sustainable alternative to blinds and other traditional window treatments. We partner with leading glass and film manufacturers for mass production and distribution of DynamicTint.

Electrokinetic Film Technology

Our electrokinetic (EK) technology was derived from proprietary ink and microfluidic technology developed at HP. Electrokinetic refers to the movement of particles within a fluid under the influence of an electric field. Our EK film technology utilizes nanometer-sized pigment particles that are electrically charged and suspended in a liquid that is sandwiched between two clear substrates that are coated with a transparent conductor oxide (TCO) film. *Figure 1.* In a non-energized state, the suspended pigment particles are distributed uniformly between the plastic films, and will absorb, transmit, or reflect light depending on the properties of the suspended pigment (dark state). When the proper electrical signal is applied to the conductive TCO layers, an electrical field is created, and the charged pigment particles collect in micro-embossed holes in a layer of polymer resin covering the transparent conductor surface. As the charged pigment particles are collected, the fluid becomes highly transparent (clear state). By applying a different electrical signal, the pigment can be dispersed back into the fluid to achieve the desired color density or opacity.

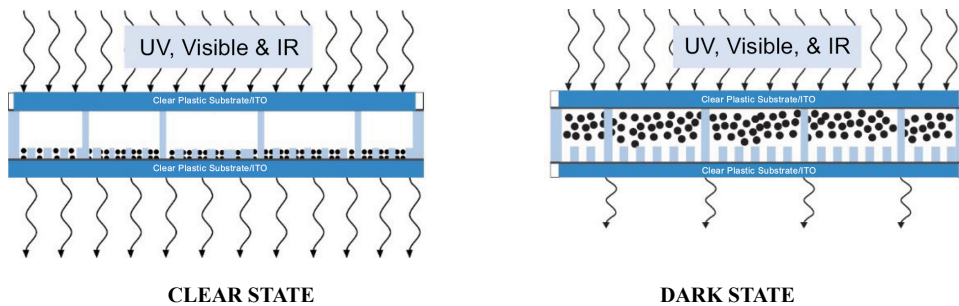


Figure 1. Schematic cross-section of electrokinetic film in clear and dark states.

Highlights

- **Clear Polyethylene Terephthalate (PET) Substrates** — Same material as window tinting films.
- **Transparent Conductor on PET** — Indium Tin Oxide (ITO) — same as most touch screens.
- **Electronic Ink** — Nanoparticles suspended in a fluid which absorb light.
- **Energy Source** — Nanoparticles are controlled through DC low voltage applied to the ITO conductor material which is powered by a lithium-ion battery that is charged with a solar cell strip, no hard-wiring necessary.

Our plastic films are manufactured using industry standard roll-to-roll (R2R) processing equipment. We believe our R2R processing will have an inherently lower manufacturing cost compared to sheet-based processing methods used for other smart window technologies like electrochromic glass. There are three basic steps to making our film using R2R equipment.

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- 1) **Deposition:** R2R TCO deposition on clear polyethylene terephthalate (PET) plastic film using vacuum sputtering of indium-tin oxide (ITO). The ITO on PET film can be provided by a number of suppliers. Millions of square feet of ITO on PET are currently provided for nearly all capacitance-based display touch screens.
- 2) **Embossing:** R2R embossing of UV-curable resin in a proprietary and patent protected 3-D pattern for ink pigment control and containment on one of the two plastic films. An example of the embossed pattern is shown in *Figure 2*. The R2R embossing process can be completed by various plastic film companies. Crown has the capability to accomplish the coating and embossing steps within its current facility in addition to working with manufacturing partners.

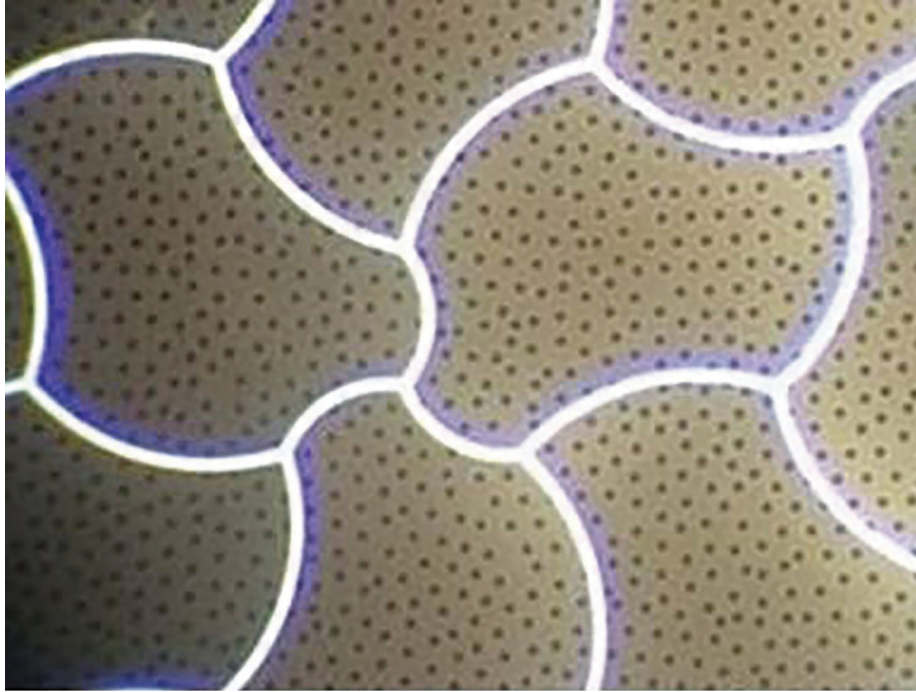


Figure 2. Microscopic Optical Image of Embossed Film

- 3) **Lamination:** The final R2R process laminates the two layers of PET together with the proprietary and patent protected pigment-containing fluid contained by the wall structure shown by the white areas in *Figure 2*. The wall area has adhesion to the upper layer of PET with ITO film thereby sealing the fluid between the two plastic layers. The fluid contains nanometer-sized pigment particles that are charged electrically and suspended in the fluid.

We believe that DynamicTint™ has the following distinct advantages over existing optical electronic film technologies:

- **Neutral Color** — Pigment is designed to be color neutral and will not affect the hue of what is viewed through the window in any clear, dark or tinted state.
- **Speed** — Transition time is typically a few seconds.
- **Affordability** — Roll-to-Roll film manufacturing using relatively inexpensive materials.
- **Low Energy Requirements** — Film is low voltage and can be powered with a small battery charged by a solar cell strip or wired to an existing electrical infrastructure including a LAN line.

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- **Retro-Fit** — Film can be applied in a Smart Window Insert (“Inserts”), which can be placed within existing window frames, eliminating the needs for both window treatments or to replace single pane windows with dual pane windows.
- **Sustainable** — Reduces energy used to heat or cool a room via HVAC systems and can use renewable energy to transition the film.

Smart Window Insert powered by DynamicTint™

Our first product will be the Smart Window Insert powered by DynamicTint™ which is specifically designed for retrofitting in the domestic and international commercial real estate install base. Our DynamicTint™ can be laminated to other surfaces like heat-treated glass or acrylic and the laminated sheet can be assembled in Smart Window Inserts that can be placed into the interior side of the window frame providing the dynamic tinting capability as well as additional insulation and sound proofing to the existing windows (*Figure 3*).

Hemodynamic Results

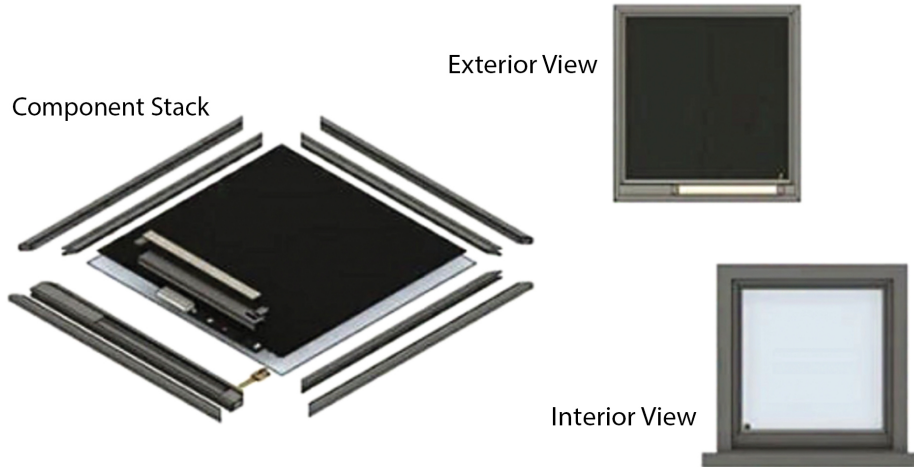


Figure 3. Window Insert with EK Film

The Insert is a custom-sized panel comprised of a rigid substrate (thin glass or acrylic) with a silicon compliant edge seal that allows for the insert to securely fit into the interior side of the window frame.

Some of the Insert’s features include:

- **Solar-powered** — eliminating the need to hardwire it into the building’s electrical system
- **Wirelessly enabled** — facilitating communication with all the other installed inserts and integration with the building’s management software system
- **Sensor equipped** — enabling the Insert to auto-sense the intensity of exterior light and interior ambient light
- **Software enabled** — can be managed via programmed macros, dynamically managed by the building, or user-controlled within an office
- **Data collection** — allowing optimization of the Inserts/curtain wall energy performance.
- **Lease vs Purchase** — Creative and flexible financing allows for customers to lease Inserts on a long-term basis and avoid large capital expenditures

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We believe our Smart Window Inserts can be easily installed into commercial buildings, residential windows, skylights, and windows within garage doors. In commercial buildings, our Smart Window Inserts can be used to convert existing single pane windows into dual pane windows. We believe there is a significant opportunity to provide Smart Window Inserts to commercial building owners who are looking to eliminate window blinds, gain energy efficiency, and reduce carbon emissions.

Sustainability

Crown is aware that working towards building a sustainable future is a common goal shared by many. Companies such as Walmart (NYSE: WMT), Amazon (NASDAQ: AMZN) and Apple (NASDAQ: AAPL) are now publishing sustainability pledges, and we are seeing a trend of pledging to make their workplaces more environmentally friendly.

Crown's patented technology provides a solution that helps address many sustainability issues such as:

- **Reducing waste** — as opposed to replacing single pane window units with newly manufactured dual pane windows, Crown allows building owners to install our retrofit DynamicTint Insert into existing single pane window frames thereby creating a dual pane window;
- **Reducing energy** — Crown's Insert reduces HVAC energy consumption by reducing the need for constantly cooling and heating a room, reducing the customers carbon emissions. Initial field testing suggests HVAC energy savings of up to 26% could potentially result from the installation of Smart Window Inserts. According to FacilitiesNet (<https://www.facilitiesnet.com/windowsexteriorwalls/article/Smart-Window-Benefit-Energy-Savings-Reduced-Glare-17280>), the ability to control the amount of heat entering a building reduces the heat load of the building which in turn reduces your HVAC usage.;
- **Using renewable energy** — Crown's Smart Window Insert is low voltage and low wattage and can be powered by a solar strip that captures the sun's energy and is integrated into the Insert itself thereby eliminating the need to hardwire the Insert to the home or building's electrical system.

Another benefit of DynamicTint is being able to optimize daylight usage, thereby reducing the usage of lights. A study done by Project Drawdown (<https://www.drawdown.org/solutions/dynamic-glass>) projected that if 30 – 50% of commercial building spaces install dynamic glass, the potential climate-weighted energy efficiency from cooling is estimated at 9% and lighting at 9% — depending on local climate, building location and window orientation. This can result in 0.3 – 0.5 gigatons of emissions reductions from decreased energy use.

At Crown, we are committed to building a product that can be self-sufficient and does not require an additional power source or hard wiring into the electrical system of a residential home or commercial building. This ensures that as we reduce a building's energy consumption, we are not adding to it and are working towards being carbon neutral.

Intellectual Property

On January 31, 2016, we entered into an IP agreement with HP to acquire a research license to determine the feasibility of incorporating HP's electrokinetic display technology in our products. On February 4, 2021, Crown and HP entered into a fourth amendment to the agreement. Pursuant to such amendment, among other items, the parties agreed to amend the list of patent and patent applications, which includes two additional patents (the "HP Patents") that are assignable to us by HP upon the exercise of our option to acquire the HP Patents (the "Option"). In connection with our exercise of the Option, we paid HP an aggregate amount equal to One Million Five Hundred Fifty Thousand Dollars (\$1,550,000) on February 9, 2021. From the date of the exercise of the Option until January 1, 2030, we agreed to pay to HP a royalty fee based on the cumulative gross revenue received by us from the HP Patents as follows:

Time Window	Lifetime Cumulative Gross Revenue	Royalty Rate
Prior to December 31, 2029	\$ Less than \$70,000,000	0.00%
	\$ 70,000,000 – \$500,000,000	1.25%
	\$ 500,000,000 and beyond	1.00%
January 1, 2030 onward		0.00%

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We entered into a Patent Assignment Agreement with International Business Machines Corporation (“IBM”) to acquire an ownership interest in assigned patents. As consideration for the patents, we paid \$264,000 (including legal fees of approximately \$38,000) on July 23, 2021.

In addition, we have current patent applications in the United States and other countries that if granted, would add three additional patents to its portfolio. Our United States patents expire at various dates from March 26, 2028 through March 10, 2036.

A 2022 appraisal of Crown’s intellectual property by one of the preeminent third-party IP-valuation firms indicated a total valuation of approximately \$94 million, consisting of \$35 million relating to patents (limited to the US office building market, supplying its Smart Window Insert) and \$59 million for trade secrets.

We believe that its EK technology is adequately protected by its patent position and by its proprietary technological know-how. However, the validity of our patents has never been contested in any litigation. We also possess know-how and relies on trade secrets and nondisclosure agreements to protect its technology. We require any employee, consultant, or licensee having access to its confidential information to execute an agreement whereby such person agrees to keep such information confidential.

Crown-Owned Patents

Country	Filing Date	Publication No.	Title
USA	28-Jan-19	11174328	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
China	28-Jan-19	CN111918894A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Europe	28-Jan-19	3752867	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Japan	28-Jan-19	JP 2021514422A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
Korea	28-Jan-19	KR 20200122333A	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
WO	28-Jan-19	WO 2019/160675	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	16-Feb-18		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	13-Jan-20	2020-0225552	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
WO	13-Jan-20	WO2020/150166	APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	16-Jan-19		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
EPO	23-Jun-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
CN	8-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM

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Country	Filing Date	Publication No.	Title
Korea	5-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
JP	15-Jul-21		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	7-Jul-16	10377909	INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
USA	22-Nov-10	8179590	ELECTRO-OPTICAL DISPLAY
USA	29-Jul-10	8054535	ELECTROPHORETIC DISPLAY DEVICE
USA	23-Aug-17	10852615*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
EPO	2-Dec-15	3256903*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
EPO	2-Dec-15	3250962*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	23-Aug-17	10656493*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
USA	30-Nov-20	2021-0108463*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
WO	2-Dec-15	WO2016/089957*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS
WO	2-Dec-15	WO2016/089974*	TWO PARTICLE ELECTROPHORETIC LAMINATE FOR USE WITH SMART WINDOWS WITH REDUCED DIFFRACTION
USA	18-Dec-14	9567995	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	18-Aug-15	9816501	WINDOW OPACITY ATTENUATION USING MICROFLUIDIC CHANNELS
USA	9-Mar-18	10926859	SMART WINDOW ACTIVATION TO PREVENT LASER DISTURBANCE
USA	10-May-18	10935818	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
USA	26-Oct-16	10106018	AUTOMATED WINDSHIELD GLARE ELIMINATION ASSISTANT
USA	2-Sep-16	10144275	ENVIRONMENTAL CONTROL IN VEHICLES
GB	2-May-19	2586760	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
CN	2-May-19	CN111936331A	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
DE	2-May-19	112019000749	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
JP	2-May-19		EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW
PCT	2-May-19	WO2019/215544**	EVENT-BASED, AUTOMATED CONTROL OF VISUAL LIGHT TRANSMISSION THROUGH VEHICLE WINDOW

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Country	Filing Date	Publication No.	Title
USA	11-Oct-21	11578150	REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	24-Feb-22		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY
USA	29-Mar-22		SELF-ALIGNING MASTER AREA MULTIPLICATION FOR CONTINUOUS EMBOSSING
USA	11-Sep-22		APPLICATIONS OF AN ELECTROKINETIC DEVICE FOR AN IMAGING SYSTEM
USA	22-Jul-14		INKS INCLUDING SEGMENT COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY (recently assigned to Crown)
USA	10-Feb-23		REFRACTIVE INDEX MATCHED RESIN FOR ELECTROPHORETIC DISPLAYS AND OTHER APPLICATIONS
PCT	23-Feb-23		WINDOW SYSTEM AND METHOD UTILIZING A WINDOW PANE ASSEMBLY AND LOCKING SYSTEM FOR EASY INSERTION OF A WINDOW PANE ASSEMBLY WITH ELECTRONICALLY CONTROLLABLE SCALABLE APERTURES FOR ATTENUATING OR OTHERWISE MODULATING LIGHT TRANSMISSION THROUGH SAID ASSEMBLY

* Co-owned with University of Cincinnati

* Inactive

In-Licensed Patents

Patent No.	Country	Patent Date	Publication		Title
			No.	Status	
8,183,757	USA	22-May-12		Issued	DISPLAY ELEMENT
8,184,357	USA	22-May-12		Issued	DISPLAY ELEMENT
8,331,014	USA	11-Dec-12		Issued	PIGMENT-BASED INKS
8,384,659	USA	26-Feb-13		Issued	DISPLAY ELEMENT INCLUDING ELECTRODES AND A FLUID WITH COLORANT PARTICLES
8,432,598	USA	30-Apr-13		Issued	TRANSPARENT CONDUCTOR STRUCTURE
8,896,906	USA	25-Nov-14		Issued	INKS INCLUDING BLOCK COPOLYMER GRAFTED PIGMENTS VIA AZIDE CHEMISTRY
8,018,642	USA	13-Sep-2011		Issued	ELECTRO-OPTICAL DISPLAY

Business Model

We intend to manufacture our patented EK Technology under the name DynamicTint™. We intend to generate revenue by selling our Smart Window Inserts powered by DynamicTint™ to our customers.

Crown's first product will be the Smart Window Insert powered by DynamicTint™ for retrofitting in commercial buildings. Crown's Smart Window Inserts will allow the building owner to quickly convert a single pane window unit to a dual pane window unit. Crown's Inserts will act as the "second pane" and will allow the building owner to enjoy all the benefits of a dual pane window without having to replace their existing single pane windows.

Crown's customers will be able to buy and own their Smart Window Inserts but also, at some stage, have the option to enter long-term leases of the Inserts with Crown. Additional applications we are exploring with potential customers of Crown's DynamicTint include:

- Smart Window Inserts for retrofitting of commercial buildings in markets outside the United States.
- Smart Window Inserts for retrofitting of multi-family buildings.
- Residential homes: residential windows, garage door windows, windows contained in and surrounding residential front doors as well as residential skylights.
- Automotive: sunroofs.

As Crown's DynamicTint technology requires very little energy to effect that transition from clear to dark state, a rechargeable battery coupled with a built-in solar cell eliminates the need to hardwire the inserts to the building electrical system. Crown believes that the potential retrofit market for its Smart Window Inserts is significantly large. Each unit will have wireless communication capability for control of the film and communication with the building HVAC system.

Crown has also developed a working prototype of an insert for the residential skylight, which allows a homeowner to control the amount of light entering the room. Crown's DynamicTint Insert does not require the homeowner to replace their skylight as it conveniently fits into the existing frame. Crown's skylight insert will allow a homeowner (through a Bluetooth connection or RF controller) to adjust the level of desired tint easily and quickly, thereby controlling the amount of light and heat entering the room. The DynamicTint Skylight Insert will be powered by a rechargeable lithium battery and built-in solar cell thereby eliminating the need to wire the insert to the home's electrical system.

Partners and Customers

On March 25, 2022, Crown executed a Master Supply Agreement (the "BDN MSA") with Brandywine Operating Partnerships L.P. to install its Smart Window Inserts powered by DynamicTint™ in Brandywine office buildings. The BDN MSA provides the master terms and conditions under which purchase orders will be executed for Crown to supply units to retrofit windows at certain locations.

On December 27, 2021, Crown executed a Master Supply Agreement (the "HPP MSA") with Hudson Pacific Properties L.P. for the installation of Crown's energy saving Smart Window Inserts in several office properties across its West Coast portfolio. The HPP MSA provides the master terms and conditions under which purchase orders will be executed for Crown to supply units to retrofit windows at certain locations.

Prior to this, on September 27, 2021, Crown had entered into a Master Supply Agreement with MetroSpaces Inc., Crown's first commercial customer, install its Smart Window Inserts in MetroSpaces' 70,000 square-foot Houston, Texas office building.

In the future, Crown and its customers may enter into multiple specific transactions by executing purchase orders for additional buildings.

Additionally, discussions with multiple other building owners to buy Crown Smart Window Inserts are progressing as the regulatory and consumer pressure to reduce the level of energy consumption and carbon emissions continues to build.

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Purchase Orders

On August 12, 2022, we entered into two Purchase Orders (PO's) with Hudson Pacific Properties, L.P. ("Hudson") for the purchase of our Smart Window Inserts™ ("Inserts"). Hudson is a unique provider of end-to-end real estate solutions for tech and media tenants. The PO's have a value of \$85,450 and represent the first orders we have received prior to the launch of its Inserts. Delivery and installation are expected to begin in Q3 2023.

On August 12, 2022, as additional consideration for the PO's, we issued a warrant to Hudson to purchase 300,000 shares of our Common Stock at \$0.75 per share. The warrant has a five year life and expires on August 12, 2027.

Manufacturing

Crown is developing its manufacturing capabilities to meet anticipated demand for the Smart Window Insert at its facilities located in Corvallis, Oregon, for film production, and Salem, Oregon, for Smart Window Insert manufacturing.

Crown plans to produce its EK film at its facilities in Corvallis using its existing roll to roll (the "R2R") embossing equipment. We intend to perform all other film manufacturing processes at our Corvallis facility upon receipt of additional manufacturing equipment currently ordered and awaiting delivery.

Crown's Smart Window Inserts will be produced at our Salem facility, where EK film will be laminated to glass, and then assembled into a frame. The inserts electronic components will also be integrated into the insert and the final assembled inserts will be packaged for shipment from Salem to our customers' buildings.

The completion of Crown's facilities in Corvallis and Salem marks our transition to being completely self-sufficient in manufacturing our products, eliminating any dependency on contract manufacturers or partners.

Commercial Office Building Market

Commercial buildings have gotten larger in the United States as their floorspace continues to grow faster than the number of commercial buildings, according to preliminary results from the U.S. Energy Information Administration's (EIA) 2018 *Commercial Buildings Energy Consumption Survey* (CBECS). CBECS estimates that 5.9 million U.S. commercial buildings contained a total of 97 billion square feet as of 2018. The number of commercial buildings increased by 6%, and commercial square footage increased by 11% since the CBECS was last conducted in 2012.

Smart Glass Industry Trends

We believe there are favorable converging global trends in the major near-term markets for "smart glass" products. Key factors driving the growth of the smart glass market are the growing demand for smart glass for energy savings for existing commercial and residential buildings. Added to this trend are government mandates and legislation for energy-efficient construction of both commercial and residential buildings. There is a growing opportunity for smart windows in the transportation industry including automobiles, commercial trucks, buses, and passenger rail cars.

In both public and private sectors across the world, there are substantial efforts targeted toward the promotion and use of energy efficient smart glass materials, including those used in automobiles, windows and other architectural glazings.

In September 2020, Markets and Markets issued *Smart Glass Market with COVID-19 Impact by Technology (Suspended Particle Display, Electrochromic, Liquid Crystal), Application (Architecture, Transportation, Consumer Electronics), and Geography — Global Forecast to 2025*. The smart glass market size is expected to grow from \$3.8 billion in 2020 to \$6.8 billion by 2025, at a CAGR of 12.1% during the forecast period. The growth of the smart glass industry is driven by factors, such as the growing adoption of smart glass in automotive application and, declining prices for electrochromic material. Other major driving factors for smart glass adoption include supportive government mandates and legislation on energy efficiency. Governing bodies of various countries are increasingly encouraging the use of these energy-efficient products.

Smart glass has inherent energy-saving and auto-dimming properties, which reduces its maintenance cost. As a result, the perceived benefits of these glass products are more than the incurred investments.

Crown believes that the smart glass industry is in the initial phase of growth and that DynamicTint™ may have commercial applicability in many products where variable light-control is desired.

Our Technology

DynamicTint™ combines many of the favorable properties of the other smart window technologies. It has fast-switching time and unlike electrochromic (EC) technology, modulation in light level is not area dependent and the film is neutral in color in all settings. Unlike Suspended Particles Devices (SPD) and Polymer Dispersed Liquid Crystal (PDLC) technology, EK film does not need high voltage alternating current to power the film. Because of the low power requirements, EK films can be powered with batteries or combined with small area solar cells, allowing retrofit to existing windows. Furthermore, in the future, EK film could be made with other colorants and it is possible with modification to the design to use two colorants in the same film, which has been demonstrated in the recent past under a research project at the University of Cincinnati. Below is a table outlining some of the typical properties of each technology.

Other Smart Glass Technologies

Variable light transmission technologies can be classified into two basic types: “active” technologies that can be controlled electrically by the user either automatically or manually, and “passive” technologies that can only react to ambient environmental conditions such as changes in lighting or temperature. Most of the technologies are “active”. One type that is passive is thermochromic technology where a rise in temperature will darken the film applied to glass.

We believe that our DynamicTint has certain performance advantages over other “smart glass” technologies and that pricing and product performance are the two main factors critical to the adoption of smart glass products. Because the non-EK smart glass technologies listed below do not have published, consistent pricing or cost data that can be relied upon, we cannot accurately report our price position relative to these other technologies. In terms of product performance, we believe that DynamicTint offers numerous advantages over other smart glass technologies, as discussed below.

Technology	Can Retrofit	Power Usage	Can Tint to Black	Solar or Battery Powered	Tint Transition Speed	Light Transmission
DynamicTint™ (Electrokinetic)	P	<0.01 W/M2	P	P	approx.4 sec	3.0% – 70% or 0.4% – 50%
Electrochromic (EC)	↑	0.3 – 2 W/M2 (30X EK)	↑	↑	5 – 40 min	<1% – 58%
Suspended Polymers in Particles (SPD)⁽¹⁾	↑	1.1 W/M2 at 100V/50hz (110X EK)	↑	↑	<3 sec	0.8% – 55%
Polymer Dispersed Liquid Crystal (PDLC)	↑	5 – 20 W/M2 (500X EK)	↑	↑	1 – 3 sec	~80%

Ref. 1: SPD Film — LCF-1103DHA90 Showa Denko Material Co.

Electrochromic Glass

Electrochromic (EC) glass technology has been used as a light absorbing technology for rear view mirrors in automobiles for decades, and more recently for large-scale windows. However, the EC technology developed for windows is based on a different set of materials that are directly deposited on the heat-treated glass panels. All of the current EC companies use tungsten oxide as the main component involved in the color transition from clear to blue. Because of the nature of the chemical transition of tungsten oxide, EC film does not absorb as much of the blue light, so remaining light will have a strong blue hue both in the room and when looking through the window. The speed of the switching time from dark to light vice versa is directly related to the size of the window area and the electrode design which brings electrical current to the EC material to start the chemical transition. EC technology is basically a battery-like material that requires “charging and discharging”. The time to charge/discharge the EC material in a large window can take up to 40 minutes to change form the dark state to the clear state at nominal temperatures. Also, during switching of the EC film, there can be non-uniform areas which can vary in level of tint from center to edge. The larger the area of the window, the more non-uniform during the change of state. Longer switching time can minimize the non-uniform areas. The EC materials are typically vacuum deposited directly on “defect-free” glass. The

typical investment required for a large window electrochromic factory can run into the hundreds of millions of dollars, due to the large-scale vacuum equipment required, low particulate cleanroom required, and the relatively slow speed of deposition for all the various layers. Halio, formerly Kinestral Technologies, is using a chemical liquid deposition technique to replace some of the vacuum deposition steps to lower the capital investment needed for manufacturing.

Suspended Particle Glass (SPD)

SPD is a film that has suspended long and narrow particles in an encapsulated liquid polymer film with layers of ITO on either side to allow generation of an alternating current electrical field to twist the particles from a random state to a near vertical state perpendicular to the ITO plane. In the vertical state light passes through the film and in the random state the light is absorbed by the particles. The color of the film is blue since the particles used in the film do not absorb blue light as well as other colors of sunlight. No other types of particles have been created for this type of device. The film responds quickly to the electrical field, however, requires constant high AC voltage to hold the clear state. The film is manufactured on plastic and uses roll-to-roll (R2R) equipment processing. Also, because the particles are aligned when in the clear state, the film has a limited viewing angle much like older liquid-crystal displays. When viewed at a side angle, the film will appear darker. The current market for SPD has been mainly automobile sunroofs where the viewing angle of the passengers is relatively fixed at nearly perpendicular angle to the SPD film.

Polymer-Dispersed Liquid Crystal (PDLC) Film

PDLC requires an AC electric field like the SPD film described above to achieve a clear state. However, the liquid-crystal based film can only scatter light in the power-off state, therefore, most of the incoming light is transmitted through the film (~80%). Typically, the PDLC film is used for interior windows or doors to create privacy. PDLC has similar manufacturing methods using R2R equipment and plastic film with ITO conductor to the SPD film. The film is available from many Far East manufacturing companies with some able to make ~150 cm width film. The quality of the film can vary based on the manufacturing company. The film was invented at Kent State University in the 1980's and the patents have expired.

Competition

Several smart glass competitors have an operating history, including:

- SAGE Electrochromic, Inc., a wholly owned subsidiary of Saint-Gobain, which develops and manufactures electrochromic glass;
- View Glass [NASDAQ: VIEW] and Halio, formerly Kinestral Technologies, manufacture electrochromic glass at their purpose-built manufacturing facilities and both are headquartered in California; and
- Research Frontiers, Inc. [NASDAQ: REFR] licenses an electronically controlled tinted film, utilizing SPD technology, to various companies.

Crown Electrokinetics expects that other competitors will emerge in the future.

Research and Development

Crown has been using a 6" width R2R equipment capable of handling the deposition, embossing and lamination steps of the manufacturing process for its research and development. Crown will utilize the 12" width film for the first-generation Smart Window Insert. Larger scale manufacturing is planned at a minimum of 36" width film to address markets including appropriately sized commercial building window inserts, larger format skylights inserts, and many automobile sunroofs. Thereafter, Crown will develop capability to manufacture DynamicTint film of at least 72" width capability. This will allow Crown to address the vast majority of window sizes for most applications.

As a result of our research and development efforts, we believe that our EK technology is now, or with additional development will become, usable in a number of commercial products. Such products may include one or more of the following fields: "smart" windows, doors, skylights and partitions; self-dimmable automotive sunroofs, windows, sun visors, and mirrors.

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We have devoted most of our financial resources to research and development activities with the goal of producing commercially viable EK products and has developed working samples of our EK technology.

Crown's main goals in its research and development include:

- reducing the voltage required to operate DynamicTint™,
- obtaining data and developing improved materials regarding environmental stability and longevity, and
- quantifying the degree of energy savings expected by users of our technology.

Crown Fiber Optics

On January 3, 2023, we acquired substantially all of the assets (the "Asset Acquisition") of Amerigen 7 LLC ("Amerigen"), which was engaged in the business of construction of 5G fiber optics infrastructure, for cash consideration of approximately \$0.65 million. The Asset Acquisition included approximately 12 employees, customer contracts, and certain operating liabilities. On December 20, 2022, we incorporated our wholly-owned subsidiary Crown Fiber Optics Corp. ("Crown Fiber Optics" or "we") in Delaware, to own and operate the business acquired from Amerigen.

Crown is a new entrant in providing contracting services to the fiber optics and telecommunications infrastructure industry throughout the United States. Since our entrance into the construction of fiber optic networks, we have expanded our scope and service offerings organically and through one acquisition. Today, Crown is focused on providing constructions services to the fiber optic industry. We are focused on adding management depth to expand our industry knowledge, to develop strong customer relationships, and to hire and retain a skilled workforce.

Crown's fiber optic operating division supplies telecommunications providers with a comprehensive portfolio of specialty services, including program management; planning; engineering and design; aerial, and underground fiber construction.

Construction, Maintenance, and Installation Services. We provide a range of construction, maintenance, and installation services, including the placement and splicing of fiber, copper, and coaxial cables. We excavate trenches to place these cables; place related structures, such as poles, anchors, conduits, manholes, cabinets, and closures; place drop lines from main distribution lines to a consumer's home or business; and maintain and remove these facilities. We provide these services for both telephone companies, internet service providers and cable multiple system operators in connection with the deployment, expansion, or maintenance of new and existing networks. We can also provide tower construction, lines and antenna installation, foundation and equipment pad construction, small cell site placement for wireless carriers, and equipment installation and material fabrication and site testing services. In addition, we provide underground facility locating services for telecommunications providers. Our underground facility locating services include locating telephone, cable television, power, water, sewer, and gas lines.

Fiber Optics Business Strategy

Capitalize on Long-Term Growth Drivers. We are positioned to benefit from the increased demand for network telecommunications bandwidth that is necessary to ensure reliable video, voice, and data services. Developments in consumer and business applications within the telecommunications industry, including advanced digital and video service offerings, continue to increase demand for greater wireline and wireless network capacity and reliability. Telecommunications network operators are increasingly deploying fiber optic cable technology deeper into their networks and closer to consumers and businesses in order to respond to consumer demand, competitive realities, and public policy support. Additionally, wireless carriers are upgrading their networks and contemplating next generation mobile solutions in response to the significant demand for wireless broadband, driven by the proliferation of smart phones, mobile data devices and other advances in technology. Increasing wireless data traffic and emerging wireless technologies are United States. Furthermore, significant consolidation and merger activity among telecommunications providers could also provide increased demand for our services as networks are integrated.

Selectively Increase Market Share. We believe our reputation for providing high quality services and the ability to provide those services nationally creates opportunities to expand market share. Our operating structure and multiple points of contact within customer organizations positions us favorably to win new opportunities and maintain strong relationships with our customers.

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We recently purchased five micro trenchers to gain a strategic advantage over other companies competing in our market. Micro trenching is a technique to place fiber optic cables underground and is gaining acceptance across multiple markets. Micro trenchers are difficult to obtain as the demand for the equipment is significant. We have a commitment from our equipment vendor for an additional 15 micro trenchers. We believe this advantage will allow Crown to gain market share and market advantage over its competitors.

Pursue Selective Acquisitions. We may pursue acquisitions that are operationally and financially beneficial for us as they provide incremental revenue, geographic diversification, and complement existing operations. We generally target companies for acquisition that have defensible leadership positions in their market niches, the opportunity to generate profitability that meets or exceeds industry averages, proven operating histories, sound management and certain clearly identifiable cost synergies.

Fiber Optics Customer Relationships

We have recently established relationships with many leading telecommunications providers, including telephone companies, cable multiple system operators, wireless carriers, and telecommunication equipment and infrastructure providers. Our customer base is primarily concentrated in the Arizona region. We believe that a substantial portion of our total contract revenues and operating income will continue to be generated from a concentrated group of customers and that the identity and proportion of our contract revenues arising from our work for our top customers will fluctuate.

We perform a significant amount of our services under master service agreements and other contracts that contain customer-specified service requirements. These agreements include discrete pricing for individual tasks. We generally possess multiple agreements with each of our significant customers. To the extent that such agreements specify exclusivity, there are often exceptions, including the ability of the customer to issue work orders valued above a specified dollar amount to other service providers, the performance of work with the customer's own employees, and the use of other service providers when jointly placing facilities with another utility. In most cases, a customer may terminate an agreement for convenience. Historically, multi-year master service agreements have been awarded primarily through a competitive bidding process; however, occasionally we are able to negotiate extensions to these agreements. We provide the remainder of our services pursuant to contracts for specific projects. These contracts may be long-term (with terms greater than one year) or short-term (with terms less than one year) and often include customary retainage provisions under which the customer may withhold 5% to 10% of the invoiced amounts pending project completion and closeout.

Fiber Optics Cyclical and Seasonality

The cyclical nature of the industry we serve affects demand for our services. The capital expenditure and maintenance budgets of our customers, and the related timing of approvals and seasonal spending patterns, influence our contract revenues and results of operations. Factors affecting our customers and their capital expenditure budgets include, but are not limited to, overall economic conditions, including the cost of capital, the introduction of new technologies, our customers' debt levels and capital structures, our customers' financial performance, and our customers' positioning and strategic plans. Other factors that may affect our customers and their capital expenditure budgets include new regulations or regulatory actions impacting our customers' businesses, merger or acquisition activity involving our customers, and the physical maintenance needs of our customers' infrastructure.

Our operations exhibit seasonality and may be impacted by adverse weather changes as we perform a significant portion of our work outdoors. Consequently, adverse weather, which is more likely to occur with greater frequency, severity, and duration during the winter, as well as reduced daylight hours, impact our operations during the fiscal quarters ending in December and March. Additionally, extreme weather conditions such as major or extended winter storms, droughts and tornados, and natural disasters, such as floods, hurricanes, tropical storms, whether as a result of climate change or otherwise, could also impact the demand for our services, or impact our ability to perform our services.

Competition

The specialty contracting services industry in which we operate is highly fragmented and includes a large number of participants. We compete with several large multinational corporations and numerous regional and privately owned companies. In addition, a portion of our customers directly perform many of the same services that we provide.

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Relatively few barriers to entry exist in the markets in which we operate. As a result, any organization that has adequate financial resources, access to technical expertise, and the necessary equipment may become a competitor and the degree to which an existing competitor participates in the markets that we operate may increase rapidly. The principal competitive factors for our services include geographic presence, quality of service, worker and general public safety, price, breadth of service offerings, and industry reputation. We believe that we compare favorably to our competitors when evaluated against these factors. To uphold these values rests on our officers, managers and supervisors as they establish the climate for all other employees. Officers, managers and supervisors are required to create a work environment that encourages employees to discuss concerns without fear of retaliation. Should potential violations of the Code of Conduct or the law occur, employees are encouraged to voice concerns promptly and are reminded that retaliation against anyone who reports a potential violation in good faith will not be tolerated. All employees are required to complete the training on the Code of Ethics, and we report material matters related to the Code of Ethics to the Audit Committee of our Board.

The success of our business is fundamentally connected to the safety and well-being of our people. We are committed to instilling safe work habits through proper training and supervision of our employees and expect adherence to safety practices that ensure a safe work environment. Our safety programs require employees to participate both in safety training required by law and training that is specifically relevant to the work they perform. Safety directors review incidents, examine trends, and implement changes in procedures to address safety issues.

Our Board of Directors, through our Compensation Committee and our Corporate Governance Committee, provides oversight on employee matters. The Compensation Committee receives updates on activities, strategies and initiatives related to the compensation and retention of our employees, and our Corporate Governance Committee oversees environmental, social and human capital matters, as well as the development and succession planning of senior management.

Fiber Optics Subcontractors and Materials

We may contract with subcontractors to perform a significant amount of our work and to manage fluctuations in work volumes and to reduce the amount we expend on fixed assets and working capital. These subcontractors are typically small, privately owned companies that provide their own employees, vehicles, tools and insurance coverage. No individual subcontractor is financially significant to Crown Fiber Optics.

For a majority of the contract services we perform, we are provided the majority of the required materials by our customers. Because our customers retain the financial and performance risk associated with materials they provide, we do not include the costs associated with those materials in our contract revenues or costs of earned revenues. Under contracts that require us to supply part or all of the required materials, we typically do not depend upon any one source for those materials.

Risk Management and Insurance

Claims arising in our business generally include workers' compensation claims, various general liability and damage claims, and claims related to motor vehicle collisions, including personal injury and property damage. For claims within our insurance program, we retain the risk of loss, up to certain limits, for matters related to automobile liability, general liability (including damages associated with underground facility locating services), workers' compensation, and employee group health. Additionally, within our aggregate coverage limits and above our base layer of third-party insurance coverage, we have retained the risk of loss at certain levels of exposure. We carefully monitor claims and actively participate with our insurers and our third-party claims administrator in determining claims estimates and adjustments. We accrue the estimated costs of claims as liabilities and include estimates for claims incurred but not reported. Due to fluctuations in our loss experience from year to year, insurance accruals have varied and can affect our operating margins. Our business could be materially and adversely affected if we experience an increase of insurance claims at certain amounts, or in excess of our coverage limits.

Regulation

We are subject to various federal, state, and local government regulations, including laws and regulations relating to environmental protection, work-place safety, and other business requirements.

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Environmental. A significant portion of the work we perform is associated with the underground networks of our customers and we often operate in close proximity to pipelines or underground storage tanks that may contain hazardous substances. We could be subject to potential material liabilities in the event we fail to comply with environmental laws or regulations or if we cause or are responsible for the release of hazardous substances or cause other environmental damages. In addition, failure to comply with environmental laws and regulations could result in significant costs including remediation costs, fines, third-party claims for property damage, loss of use, or personal injury, and, in extreme cases, criminal sanctions.

Workplace Safety. We are subject to the requirements of the federal Occupational Safety and Health Act (“OSHA”) and comparable state statutes that regulate the protection of the health and safety of workers. Our failure to comply with OSHA or other workplace safety requirements could result in significant liabilities, fines, penalties, or other enforcement actions and affect our ability to perform the services that we have been contracted to provide to our customers.

Business. We are subject to a number of state and federal laws and regulations, including those related to utility oversight contractor licensing and the operation of our fleet. If we are not in compliance with these laws and regulations, we may be unable to perform services for our customers and may also be subject to fines, penalties, and the suspension or revocation of our licenses.

Crown Electrokinetics Employees and Human Capital

We have 46 employees; 38 of the employees are construction, technical and operational personnel, and the rest perform business development, finance, marketing, investor relations, and administrative functions. Our employees have extensive industrial experience in leading technology, ink-based manufacturing and 5G construction companies. We believe that our success is dependent upon, among other things, the services of our senior management, the loss of which could have a material adverse effect upon our prospects. None of our employees are represented by a labor union or covered by a collective bargaining agreement.

As Crown continues to grow, we will add additional construction, manufacturing engineering, marketing, and administrative personnel.

Corporate Information

Our primary business location is the R&D and Manufacturing facility located at 1110 NE Circle Blvd., Corvallis, OR 97330. We also have an office located at 11601 Wilshire Blvd., Suite 2240, Los Angeles, CA 90025 and a yard located at 12600 S 182nd Pl #10, Gilbert, AZ 85296. Our telephone number is +1 (213) 660-4250, our e-mail address is info@crownek.com, and our Internet website addresses are www.crownek.com and www.crown-fiberoptics.com. We were incorporated in the State of Delaware on April 20, 2015.

Properties

On March 8, 2016, we entered into a lease agreement with Oregon State University, to lease 1,700 square feet of office and laboratory space located at HP Campus Building 11, 1110 NE Circle Blvd, Corvallis, Oregon, for approximately \$400 monthly. On July 1, 2016, we entered into the first amendment to the lease agreement which increased the monthly lease expense to approximately \$1,200. On October 1, 2017, we entered into a sublease agreement, which provides for additional office space and the monthly lease payment increased to approximately \$1,800. The lease expired on June 30, 2018 and we extended the lease through June 30, 2019. The monthly lease payment increased to approximately \$4,500 for the months ended June 30, 2018 through November 30, 2018, and increased to approximately \$7,550 for the months ended December 31, 2018 through June 30, 2019. On July 1, 2019, we entered into the fourth amendment to its lease with Oregon State University, which extends the lease expiration date to June 30, 2022. On July 1, 2020, we entered into the fifth amendment to its lease with Oregon State University which adjusts the Operating Expense Reimbursement payment due dates from monthly to quarterly, with the payments due in advance on the first of July, October, January and April. Effective July 1, 2020, the quarterly operating expense will be \$23,097. On September 1, 2021, we entered into the seventh amendment which expanded the lease to include approximately 703 square feet of lab space, 576 square feet of cubicle space, 1096 square feet of Highbay lab space, and 376 square feet of High bay storage space in a building commonly known as Building 11. Effective September 1, 2021, the quarterly operating expense will be \$31,647 covering all utility and facility tooling costs. On January 24, 2022, we entered into the eighth amendment which expands the lease to include approximately 703 square feet of lab space, 768 square feet of cubicle

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space, 2,088 square feet of Highbay lab space, and 376 square feet of High bay storage space in a building commonly known as Building 11. Effective January 24, 2022, the quarterly operating expense will be \$44,252 covering all utility and facility tooling costs. The sublease expires June 30, 2025. On January 20, 2023, we entered into the ninth amendment to its lease with Oregon State University which reduces the amount of cubicle space from 768 square feet to 288 square feet. Effective January 20, 2023 the quarterly operating expense will be \$41,323 covering all utility and facility tooling costs.

On March 4, 2021, we entered into a lease agreement with Hudson 11601 Wilshire, LLC, to lease 3,500 square feet of office space located in Los Angeles, California. The lease term is 39 months and expires on June 30, 2024. The monthly lease expense is as follows:

- Months 1 – 12 — \$18,375
- Months 13 – 24 — \$19,018
- Months 25 – 36 — \$19,683
- Months 37 – 39 — \$20,372

We paid a security deposit totaling \$20,373 at lease inception date.

On May 4, 2021, we entered into a lease agreement with HP Inc. to lease office and lab space located in Corvallis, Oregon. The lease term is 5 years and the lease commencement date is April 1, 2021. The monthly lease expense is \$7,388 and increases by 3% on each anniversary of the lease commencement date. We will pay a security deposit totaling \$8,315. We have the option to extend the lease for an additional 5 years. On January 26, 2022, we entered into the first amendment to its lease with HP Inc., which amends the lease commencement date to January 26, 2022 and the lease expiration date to January 31, 2027.

On October 16, 2023, we entered into a lease agreement with Burnham 182, LLC. to lease yard space located in Phoenix, Arizona. The lease term is 3 years and the lease commencement date is November 1, 2023. The monthly lease expense is \$9,321. We will pay a security deposit totaling \$31,450.

We believe that our facilities are adequate to meet our needs for the immediate future and that, should it be needed, we will be able to secure additional space to accommodate the expansion of our operations.

Legal Proceedings

From time to time, we are also involved in various other claims and legal actions that arise in the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we do not believe that the ultimate resolution of these actions will have a material adverse effect on our financial position, results of operations, liquidity or capital resources.

Future litigation may be necessary to defend ourselves and our partners by determining the scope, enforceability and validity of third party proprietary rights or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth information regarding compensation earned during the year ended December 31, 2023 and the year ended December 31, 2022 by our principal executive officers and our other most highly compensated executive officers as of the end of December 31, 2023 (“Named Executive Officers”).

Name and Principal Position	Fiscal Year Ended	Annual Compensation			Long-Term Compensation Awards	
		Salary	Bonus	Other Compensation	Options	Restricted Stock Awards
Douglas Croxall	December 31, 2023	\$ 699,792	\$ 660,000	\$ —	\$ —	\$ 269,419
Chief Executive Officer	December 31, 2022	\$ 675,000	\$ 580,000	\$ —	\$ 37,974	\$ 51,000
	December 31, 2021*	\$ 506,250	\$ 400,000	\$ —	\$ 30,799	\$ —
Timothy Koch	December 31, 2023	\$ 218,750	\$ —	\$ —	\$ —	\$ 8,750
Chief Technology Officer	December 31, 2022	\$ 250,000	\$ —	\$ —	\$ 15,822	\$ 21,250
	December 31, 2021*	\$ 175,833	\$ —	\$ —	\$ —	\$ —
Joel Krutz	December 31, 2023	\$ 590,000	\$ 430,000	\$ —	\$ —	\$ 134,709
Chief Financial Officer	December 31, 2022	\$ 376,666	\$ 560,000	\$ —	\$ 25,316	\$ 34,000
	December 31, 2021*	\$ 195,000	\$ —	\$ 128,389	\$ —	\$ 1,600,000
Edward Kovalik ⁽¹⁾	December 31, 2023	\$ —	\$ —	\$ —	\$ —	\$ —
Former President and	December 31, 2022	\$ 184,229	\$ —	\$ —	\$ —	\$ —
Chief Operating Officer	December 31, 2021*	\$ 412,500	\$ —	\$ —	\$ —	\$ 2,196,000
Kaijiro Sato ⁽²⁾	December 31, 2023	\$ —	\$ —	\$ —	\$ —	\$ —
Former Co-President and	December 31, 2022	\$ —	\$ —	\$ 137,499	\$ —	\$ —
Chief Marketing Officer	December 31, 2021*	\$ —	\$ —	\$ 504,164	\$ —	\$ 1,896,000

* Nine months ended December 31, 2021

(1) Mr. Kovalik resigned from the company to pursue other opportunities on October 14, 2022.

(2) Mr. Sato resigned from the company to pursue other opportunities on April 29, 2022.

Restricted Stock

During the twelve months ended December 31, 2023, we granted 1,992,345 restricted stock units with a fair value of approximately \$0.5 million. As of December 31, 2023, a total of 2,709,012 restricted stock units have been issued to employees, and 226,351 restricted stock units had been granted to members of our board of directors.

Stock Option Grants

During the twelve months ended December 31, 2023, we granted 224,167 stock options with a fair value of approximately \$0.04 million. As of December 31, 2023, a total of 381,225 stock options have been issued to employees, and 0 stock options had been granted to members of our board of directors.

Narrative Disclosures Regarding Compensation; Employment Agreements

We have entered into employment agreements with two of our Named Executive Officers. The terms and conditions of each of the foregoing arrangements are summarized below.

Doug Croxall Agreement

On June 16, 2021, we entered into an employment agreement with Doug Croxall, our Chief Executive Officer. Pursuant to the agreement, Mr. Croxall will serve as our Chief Executive Officer for a period of two years, which will automatically extend for successive 12 month periods unless terminated by either us or Mr. Croxall. Mr. Croxall will receive an annual base salary of \$675,000. Mr. Croxall will also be entitled to an annual discretionary bonus based upon certain performance targets established by our Board of Directors, as well as annual awards under our long-term incentive plan, upon the terms and conditions established by our Board of Directors.

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On October 31, 2022, our Board of Directors approved an increase of Mr. Croxall's annual base salary to \$700,000 effective January 1, 2023. On November 30, 2023 the Board of Directors approved an exceptional bonus for Mr. Croxall of \$220,000 related to his performance for the 2023 fiscal year.

Joel Krutz Agreement

On June 21, 2021, we entered into an employment agreement with Joel Krutz to serve as our Chief Financial Officer. Pursuant to the agreement, Mr. Krutz will serve as our Chief Financial Officer for a period of two years, which will automatically extend for successive 12 month periods unless terminated by either us or Mr. Krutz. Mr. Krutz will receive an annual base salary of \$360,000. Mr. Krutz will also be entitled to an annual discretionary bonus based upon certain performance targets established by our Board of Directors, as well as annual awards under our 2022 Employee Incentive Plan, upon the terms and conditions established by our Board of Directors. On October 31, 2022, we entered into an amended employment agreement, pursuant to which Mr. Krutz will continue his service as our Chief Financial Officer, and also became our Chief Operating Officer, and pursuant to which Mr. Krutz will receive an annual salary of \$560,000 effective January 1, 2023. On being appointed to our Board of Directors, the Board of Directors approved an increase in Mr. Krutz's annual base salary to \$650,000 effective September 1. The other terms of Mr. Krutz's employment agreement remain unchanged.

Outstanding Equity Awards at Fiscal Year End

2023 Outstanding Equity Awards at Fiscal Year-end Table

The following table sets forth information regarding the outstanding equity awards held by our Named Executive Officers as of December 31, 2023:

Name	Option Awards					Stock Awards				
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options (#)	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (\$)	Equity Incentive Plan Awards: Number of Shares, Units or Other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)	
Doug Croxall	2,778	—	2,778	9.00	2.28.2028	899,520	\$ 254,266	—	—	
Doug Croxall	4,167	—	4,167	72.00	1.17.2029	—	—	—	—	
Doug Croxall	18,056	—	18,056	135.00	4.13.2030	—	—	—	—	
Doug Croxall	30,875	—	30,875	216.00	10.1.2030	—	—	—	—	
Doug Croxall	219	—	219	216.00	4/1/2031	—	—	—	—	
Doug Croxall	1,042	1,458	2,500	20.40	9/23/2032	—	—	—	—	
Tim Koch	4,067	—	4,067	9.00	2.28.2028	33,662	\$ 20,659	—	—	
Tim Koch	833	—	833	72.00	1.17.2029	—	—	—	—	
Tim Koch	5,333	—	5,333	135.00	4.13.2030	—	—	—	—	
Tim Koch	9,950	608	9,950	216.00	12.30.2030	—	—	—	—	
Tim Koch	434	—	1,042	20.40	9.23.2032	—	—	—	—	
Joel Krutz	694	972	1,667	20.40	9.23.2032	450,558	\$ 265,425	—	—	

Option Re-pricings

We have not engaged in any option re-pricings or other modifications to any of our outstanding equity awards to our Named Executive Officers during fiscal year 2023.

Compensation of Directors**2023 Director Compensation Table**

The following Director Compensation Table sets forth information concerning compensation for services rendered by our independent directors for fiscal year 2023.

Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)	Option Awards (\$)	All Other Compensation (\$)	Total (\$)
Dr. DJ Nag ⁽¹⁾	\$ 52,000	\$ 12,500	\$ —	\$ —	\$ 64,500
Scott Hobbs ⁽²⁾	17,217	5,208	—	—	22,425
Daniel Marcus ⁽³⁾	56,000	12,500	—	—	68,500
Total:	\$ 125,217	\$ 30,208	\$ —	\$ —	\$ 155,425

(1) Dr. Nag was appointed to serve as a member of the Board of Directors in July 2020. Dr. Nag held options to purchase 556 shares of our Common Stock.

(2) Mr. Hobbs was appointed to serve as a member of the Board of Directors in September 2023.

(3) Mr. Marcus was appointed to serve as a member of the Board of Directors in October 2022.

Mr. Croxall and Mr. Krutz have not been included in the Director Compensation Table because there were a Named Executive Officer of our company for all of our 2023 fiscal year, and all compensation paid to him during our 2023 fiscal year is reflected in the Summary Compensation Table above.

Director Compensation Program

Directors who are employees of our company or of any of our subsidiaries receive no additional compensation for serving on our Board of Directors or any of its committees. All directors who are not employees of our company or of any of our subsidiaries are compensated at the rate of \$12,000 per quarter. All directors who are not employees are eligible for annual equity compensation of \$75,000 payable in shares of Common Stock.

Equity Compensation Plan Information

On October 31, 2022, we adopted our 2022 Long-Term Incentive Plan (the “2022 Plan”). Under the 2022 Plan, the maximum number of shares of our Common Stock as to which awards may be granted under the 2022 Plan may not exceed seventy thousand (70,000) shares (the “Initial Share Limit”), which amount is subject to proportional adjustment as determined by our Board of Directors to reflect certain stock changes, such as stock dividends and stock splits.

Notwithstanding the foregoing, (a) the total number of shares of Common Stock that may be delivered pursuant to awards under the 2022 Plan shall automatically increase on the first trading day of each calendar year, beginning with the 2023 calendar year, by such number of shares of Common Stock as are necessary so that the total number of shares reserved for issuance under the 2022 Plan shall be equal to 19.9% of the total number of outstanding shares of Common Stock, determined on a fully diluted basis as of the applicable trading date (the “Stipulated Percentage”); (b) our Board of Directors may act prior to January 1st of a given calendar year to provide that (i) there will be no such automatic annual increase in the number of shares reserved for issuance under the 2022 Plan or (ii) the increase in the number of shares for such calendar year will be a lesser number of shares than necessary to maintain the Stipulated Percentage of shares reserved for issuance under the 2022 Plan.

On December 16, 2020, we adopted our 2020 Long-Term Incentive Plan (the “2020 Plan”). Under the 2020 Plan, there are 88,889 shares of our Common Stock available for issuance and the 2020 Plan has a term of 10 years. The available shares in the 2020 Plan will automatically increase on the first trading day in January of each calendar year during the term of the 2022 Plan, commencing with January 2021, by an amount equal to the lesser of (i) five percent (5%) of the total number of shares of Common Stock issued and outstanding on December 31 of the immediately preceding calendar year, (ii) 1,000,000 shares of Common Stock or (iii) such number of shares of Common Stock as may be established by our Board of Directors.

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We grant equity-based compensation under our 2022 Plan, 2020 Plan and our 2016 Equity Incentive Plan (the “Plan”). The 2022 Plan, 2020 Plan and 2016 Plan allows us to grant incentive and nonqualified stock options, and shares of restricted stock to our employees, directors and consultants. On June 14, 2019, the Board of Directors approved increasing the number of shares allocated to our 2016 Plan from 91,667 to 122,222.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options	(b) Weighted- Average Exercise Price of Outstanding Options	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	2,470,695	N/A	44,985
Equity compensation plans not approved by security holders	—	N/A	—
Total	2,470,695	N/A	44,985

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Approval for Related Party Transactions

It is our practice and policy to comply with all applicable laws, rules and regulations regarding related-person transactions. Our Code of Ethics and Business Conduct requires that all employees, including officers and directors, disclose to the Chief Executive Officer the nature of any company business that is conducted with any related party of such employee, officer or director (including any immediate family member of such employee, officer or director, and any entity owned or controlled by such persons). If the transaction involves an officer or director of our company, the Chief Executive Officer must bring the transaction to the attention of the Audit Committee, which must review and approve the transaction in advance. In considering such transactions, the Audit Committee takes into account the relevant available facts and circumstances.

Related Party Transactions

We have not engaged in any related party transactions in the last three years.

LEGAL MATTERS

The validity of the securities offered in this prospectus will be passed upon for us by Pryor Cashman LLP. Additional legal matters may be passed upon for us, the Selling Stockholder or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement. As appropriate, legal counsel representing the underwriters, dealers or agents will be named in the accompanying prospectus supplement and may opine to certain legal matters.

EXPERTS

Marcum LLP, an independent registered public accounting firm, has audited our financial statements at and for the year ended December 31, 2022 and the nine-month period ended December 31, 2021 as set forth in its report included in our annual report on Form 10-K and transition report on Form 10-KT for the twelve and nine months ended December 31, 2022 and 2021, respectively, which are incorporated by reference into this prospectus and elsewhere in the registration statement of which this prospectus is a part. Our financial statements are incorporated by reference in reliance on Marcum LLP's reports, given on their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any information referenced this way is considered to be part of this prospectus, and any information that we file later with the SEC will automatically update and, where applicable, supersede this information. We incorporate by reference the following documents that we have filed with the SEC (other than, in each case, documents or information deemed to have been furnished and not filed in accordance with the SEC’s rules):

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2022, filed with the Securities and Exchange Commission on March 31, 2023; and
- our Transitional Report on [Form 10-K](#) for the nine months ended December 31, 2021, filed with the Securities and Exchange Commission on March 31, 2022; and
- our Quarterly Report on [Form 10-Q](#) for the three months ended March 31, 2023, filed with the Securities and Exchange Commission on May 22, 2023; and
- our Quarterly Report on [Form 10-Q](#) for the three and six months ended June 30, 2023, filed with the Securities and Exchange Commission on August 25, 2023; and
- our Quarterly Report on [Form 10-Q](#) for the three and nine months ended September 30, 2023, filed with the Securities and Exchange Commission on November 14, 2023; and
- our Current Reports on Form 8-K filed with the Securities and Exchange Commission on [January 4, 2023](#), [February 3, 2023](#), [March 6, 2023](#), [March 27, 2023](#), [April 6, 2023](#), [May 18, 2023](#), [May 30, 2023](#), [June 6, 2023](#), [June 15, 2023](#), [June 30, 2023](#), [July 14, 2023](#), [July 24, 2023](#), [August 7, 2023](#), [August 14, 2023](#), [August 23, 2023](#), [August 30, 2023](#), and [October 23, 2023](#) (other than information “furnished” under Items 2.02 or 7.01, or corresponding information furnished under Item 9.01 or included as an exhibit); and
- the description of our Common Stock contained in the registration statement on [Form 8-A](#), dated January 22, 2021, File No. 001-39924, and any other amendment or report filed for the purpose of updating such description.

Additionally, all documents filed by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after (i) the date of the initial filing of the registration statement to which this prospectus relates and prior to effectiveness of such registration statement, and (ii) the date of this prospectus and before the termination or completion of any offering hereunder, shall be deemed to be incorporated by reference into this prospectus from the respective dates of filing of such documents, except that we do not incorporate any document or portion of a document that is “furnished” to the SEC, but not deemed “filed.” We will not, however, incorporate by reference in this prospectus any documents or portions thereof that are not deemed “filed” with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our current reports on Form 8-K unless, and except to the extent, specified in such current reports.

The documents incorporated by reference into this prospectus are also available on our corporate website at www.crownec.com. We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus. You may request a copy of this information at no cost, by writing or telephoning us at the following address or telephone number:

Crown Electrokinetic Corp.
Attention: Chief Financial Officer
1110 NE Circle Blvd.
Corvallis, Oregon 97330
(800) 674-3612

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the securities being offered by this prospectus. This prospectus does not contain all of the information in the registration statement of which this prospectus is a part and the exhibits to such registration statement. For further information with respect to us and the securities offered by this prospectus, we refer you to the registration statement of which this prospectus is a part and the exhibits to such registration statement. Statements contained in this prospectus as to the contents of any contract or any other document are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement of which this prospectus is a part. Each of these statements is qualified in all respects by this reference.

The registration statement of which this prospectus is a part is available at the SEC's website at <http://www.sec.gov>. You may also request a copy of these filings, at no cost, by writing us at 1110 NE Circle Blvd., Corvallis, Oregon 97330, Attention: Chief Financial Officer or telephoning us at (800) 674-3612.

We are subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available at the SEC's website referred to above. We also maintain a website at www.crownec.com. You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

200,000,000 Shares

CROWN ELECTROKINETICS CORP.

PRELIMINARY PROSPECTUS

The date of this prospectus is _____, 2024

PART II — INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth an estimate of the fees and expenses relating to the issuance and distribution of the securities being registered hereby, all of which shall be borne by the registrant. All of such fees and expenses, except for the Securities and Exchange Commission (“SEC”) registration and the FINRA filing fee, are estimated:

SEC registration fee	\$	0.00
Legal fees and expenses	\$	25,000.00
Printing fees and expenses	\$	500.00
Accounting fees and expenses	\$	15,000.00
Miscellaneous fees and expenses	\$	1,000.00
Total	\$	41,500

Item 14. Indemnification of Directors and Officers.

Under Delaware law, a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than one by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, against judgments, fines, amounts paid in settlement and reasonable expenses, including attorneys’ fees actually and necessarily incurred as a result of such action or proceeding, if such director or officer acted, in good faith, for a purpose which such person reasonably believed to be, in, or not opposed to, the best interests of the corporation and, in criminal actions or proceedings, in addition, had no reasonable cause to believe that such conduct was unlawful.

In the case of a derivative action, a Delaware corporation may indemnify any such person against expense, including attorneys’ fees actually and necessarily incurred by such person in connection with the defense or settlement of such action or suit if such director or officer if such director or officer acted, in good faith, for a purpose which such person reasonably believed to be, in or not opposed to, the best interests of the corporation, except that no indemnification will be made in respect on any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or any other court in which such action was brought determines such person is fairly and reasonably entitled to indemnity for such expense.

Delaware Law permits a corporation to include in its certificate of incorporation a provision eliminating or limiting a director’s liability to a corporation or its stockholders for monetary damages for breaches of fiduciary duty. Delaware Law provides, however, that liability for breaches of the duty of loyalty, acts or omissions not in good faith or involving intentional misconduct, or knowing violation of the law, and the unlawful purchase or redemption of stock or payment of unlawful purchase or redemption of stock or payment of unlawful dividends or the receipt of improper personal benefits cannot be eliminated or limited in this manner.

Our Certificate of Incorporation and Bylaws provide that we will indemnify our directors to the fullest extent permitted by Delaware law and may, if and to the extent authorized by the Board of Directors, indemnify our officers and any other person whom we have the power to indemnify against any liability, reasonable expense or other matter whatsoever.

Any amendment, modification or repeal of the foregoing provisions shall be prospective only, and shall not affect any rights or protections of any of our directors existing as of the time of such amendment, modification or repeal.

We may also, at the discretion of the Board of Directors, purchase and maintain insurance to the fullest extent permitted by Delaware law on behalf of any of our directors, officers, employees or agents against any liability asserted against such person and incurred by such person in any such capacity.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Registrant pursuant to the foregoing, the Registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities

The following is a summary of all of our securities sold by us within the past three years which were not registered under the Securities Act, as retrospectively adjusted to reflect our 1-for-60 reverse stock split made effective on August 14, 2023 (the “Reverse Stock Split”):

November 2020 Private Placement (the “November 2020 Offering”)

On November 13, 2020, we entered into a securities purchase agreement with certain institutional and accredited investors to sell senior convertible debentures convertible into shares of our Common Stock at a conversion price of \$225.00 per share, subject to adjustment. The debentures had a maturity of one year, accrued interest at the rate of 7% per year, and were subject to 12.5% original issue discount. Each purchaser also received a five-year warrant to purchase a number of shares of our Common Stock, at an exercise price of \$279.00 per share, equal to 50% of the number of shares such purchaser’s debenture was convertible into.

The November 2020 Offering was conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

2021 Underwriter Warrant

On January 28, 2021, we issued to Roth Capital Partners, LLC a five-year warrant to purchase 6,364 shares of our Common Stock at an exercise price of \$337.50 per share. The issuance was conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

March 2021 Private Placement (the “March 2021 Offering”)

On March 31, 2021, we entered into a conversion agreement with one of our lenders, pursuant to which we agreed to issue to the lender 6,334 of our Common Stock and 500,756 shares of our Series C Preferred Stock in exchange for the conversion in full of convertible promissory notes held by the lender in an aggregate principal amount of \$750,000.

The March 2021 Offering was conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

2022 Underwriter Warrant

On July 22, 2022, we issued to Roth Capital Partners, LLC a five-year warrant to purchase 1,042 shares of our Common Stock at an exercise price of \$48.00 per share. The issuance was conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

July 2022 Private Placement (the “July 2022 Offering”)

On July 26, 2022, we entered into a securities purchase agreement with certain accredited investors, pursuant to which we sold an aggregate of 1,058 shares of our Series D Preferred Stock for an aggregate purchase price of approximately \$1.06 million. In addition, in connection with the issuance of the Series D Preferred Stock, the purchasers received a five-year warrant to purchase an aggregate of 13,568 shares of our Common Stock, exercisable at an exercise price of \$78.00 per share of Common Stock, subject to certain adjustments.

The July 2022 Offering was conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

October 2022 Private Placement (the “October 2022 Offering”)

On October 19, 2022, we entered into a securities purchase agreement with certain accredited investors as purchasers (the “October Investors”), whereby we sold, and the October Investors purchased, approximately \$5.4 million in principal amount of senior secured convertible notes (the “October Notes”) and warrants (the “October Warrants”).

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The October Notes were issued with a conversion price at a 54% premium to the most recent closing price, an original issue discount of 35%, did not bear interest, and matured upon the earlier of twelve months from the date of issuance or the closing of a change of control transaction (as defined in the October Notes). The October Notes were convertible into shares of our Common Stock, at a conversion price per share of \$29.40, subject to adjustment under certain circumstances described in the October Notes. To secure its obligations thereunder, we granted a security interest over all of our assets to the collateral agent for the benefit of the October Investors, pursuant to a security agreement, subject to exceptions for certain strategic transactions. The October Warrants are exercisable for five (5) years to purchase an aggregate of 362,664 shares of Common Stock at an exercise price of \$19.20, subject to adjustment under certain circumstances described in the Warrants. On February 28, 2023, we entered into waiver agreements (the “Waiver Agreements”) with the October Investors pursuant to which, among other things, the maturity date of the October Notes was extended. In connection with the Waiver Agreements, we issued warrants (the “Waiver Warrants”) to the October Investors. The Waiver Warrants were exercisable for five (5) years to purchase an aggregate of 96,894 shares of our Common Stock at an exercise price of \$19.20 per share, subject to adjustment under certain circumstances described in the Waiver Warrants.

The October 2022 Offering and subsequent issuances were conducted in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

January 2023 Private Placement (the “January 2023 Offering”)

On January 3, 2023, we entered into a Securities Purchase Agreement (the “January Purchase Agreement”) with certain accredited investors as purchasers (the “January Investors”). Pursuant to the January Purchase Agreement, we sold, and the January Investors purchased, \$1.2 million in principal amount of senior secured notes (the “January Notes”) and 41,667 warrants (“January Warrants”), each January Warrant entitling the holder to purchase one share of Common Stock.

On May 8, 2023, the lead lender and collateral agent for the January Notes agreed to grant us an extension of the maturity date thereof until May 15, 2023 in exchange for the issuance by us to the January Investors, on a pro rata basis, of 11,833 shares of our Common Stock, subject to approval by our stockholders. Then, on May 15, 2023, the lead lender and collateral agent for the January Notes agreed to grant us an extension of the maturity date thereof until May 23, 2023 in exchange for the issuance by us to the January Investors, on a pro rata basis, of 66,667 shares of our Common Stock, subject to approval by our stockholders. Subsequently, on May 23, 2023, the lead lender and collateral agent for the January Notes agreed to grant us an extension of the maturity date thereof until May 31, 2023 in exchange for the issuance by us to the January Investors, on a pro rata basis, of 25,000 shares of our Common Stock, subject to approval by our stockholders. Thereafter, on May 31, 2023, the lead lender and collateral agent for the January Notes agreed to grant us an extension of the maturity date thereof until June 12, 2023 in exchange for the issuance by us to the January Investors, on a pro rata basis, of 100,000 shares of our Common Stock, subject to approval by our stockholders. On June 30, 2023, we and the remaining January Investors agreed to extend the maturity date of the January Notes until July 31, 2023, in exchange for 41,667 shares of Common Stock, pending stockholder approval. On July 11, 2023, one of the remaining January Investors agreed with us to accept 152,085 shares of our Common Stock as payment in full of their January Note, which such obligations were approximately \$931,000. On July 14, 2023, another of the remaining January Investors agreed with us to accept 25,143 shares of Common Stock as payment in full of their January Note, which such obligations were approximately \$132,000.

The January 2023 Offering and the subsequent issuances of Common Stock were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

February 2023 Private Placement (the “February 2023 Offering”)

On February 2, 2023, we entered into a Line of Credit Agreement (the “Line of Credit”) with a lender (the “LOC Lender”), pursuant to which the LOC Lender extended to us a secured line of credit in an amount not to exceed \$100,000,000, to be used to fund expenses related to the fulfillment of contracts with customers of Crown Fiber Optics, our wholly-owned subsidiary. In connection therewith, we issued to the LOC Lender a secured promissory note (the “LOC Note”) in a principal amount equal to \$2,000,000.

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On May 15, 2023, we entered into that certain Third Amendment to the Convertible Promissory Note (the “LOC Note Amendment”) with the LOC Lender, pursuant to which the LOC Lender agreed to extend the maturity date of the LOC Note until June 7, 2023 in exchange for, subject to stockholder approval, 33,333 shares of our Common Stock and 4,000 shares of our existing Series E Preferred Stock, which are convertible into 66,667 shares of our Common Stock.

On May 30, 2023, we issued a convertible promissory note (the “May Note”) to the LOC Lender in an aggregate principal amount equal to \$150,000. The May Note was due and payable at any time upon demand by the May Holder after the earlier of (i) the consummation of our first securities offering after the issuance of the May Note and (ii) June 2, 2023. In connection with the issuance of the May Note, subject to stockholder approval, we agreed to issue to the LOC Lender 4,000 shares of our existing Series E Preferred Stock, which is convertible into 66,667 shares of our Common Stock.

On June 30, 2023, subject to stockholder approval, we agreed to issue an additional 8,000 shares of Series E Preferred Stock, which is convertible into 133,333 shares of Common Stock, to the LOC Lender for failure to comply with a covenant in the Line of Credit, as amended. In addition, on June 30, 2023, we and the LOC Lender agreed to extend the maturity of all promissory notes under the Line of Credit until July 16, 2023 in exchange for, subject to stockholder approval, the issuance of 5,000 shares of Series E Preferred Stock, which is convertible into 83,333 shares of Common Stock.

The February 2023 Offering and the subsequent issuances of Series E Preferred Stock and Common Stock were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

Demand Notes

Between May 17, 2023 and May 30, 2023, we issued secured demand promissory notes (the “Demand Notes”) to certain investors (the “Demand Noteholders”) in an aggregate principal amount equal to \$570,681. In connection with the issuance of the Demand Notes, subject to stockholder approval, we agreed to issue to the Demand Noteholders an aggregate of 123,561 shares of our Common Stock.

The issuances of Common Stock in connection with the Demand Notes were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

June 2023 Exchange Agreements

On June 4, 2023, we entered into Exchange Agreements (the “Exchange Agreements”): (i) with the October Investors for the exchange of October Notes in the aggregate principal amount of \$2,616,740 for 2,622 shares of our newly created Series F Convertible Preferred Stock (“Series F Preferred Stock”), in the aggregate; (ii) with the January Investors for the exchange of January Notes in the aggregate principal amount of \$205,276 for 206 shares of Series F Preferred Stock, in the aggregate; (iii) with the Demand Noteholders for the exchange of Demand Notes in the principal amount of \$570,279 for 576 shares of Series F Preferred Stock, in the aggregate; and (iv) with the Series D Purchasers for the exchange of 1,197 shares of Series D Preferred Stock for 1,847 shares of Series F Preferred Stock, in the aggregate.

In addition, in connection with the Exchange Agreements, we issued, subject to stockholder approval, new five-year warrants to purchase an aggregate of 592,129 shares of Common Stock (the “Series F Warrants”) to the October Investors, the January Investors, and the Series D Purchasers. The Series F Warrants are exercisable at an exercise price of \$8.868 per share of Common Stock, subject to certain adjustments as set forth in the Series F Warrants. The holders may exercise the Series F Warrants on a cashless basis if the shares of our Common Stock underlying the Series F Warrants are not then registered pursuant to an effective registration statement.

The issuances of the Series F Preferred Stock and the Series F Warrants pursuant to the Exchange Agreements were made in reliance on the exemption from registration provided by Section 3(a)(9) of the Securities Act of 1933, as amended.

Series F-1 Preferred Stock Offering

On June 13, 2023, we entered into a Securities Purchase Agreement (the “F-1 Purchase Agreement”) with certain accredited investors (the “F-1 Purchasers”), pursuant to which, at the closing of the transactions contemplated by the F-1 Purchase Agreement (the “F-1 Closing”) the F-1 Purchasers agreed to purchase an aggregate of 3,583 shares of our newly created Series F-1 Convertible Preferred Stock (“Series F-1 Preferred Stock”) for an aggregate purchase price of approximately \$2,327,760. In addition, in connection with the issuance of the Series F-1 Preferred Stock, the F-1 Purchasers received five-year warrants to purchase an aggregate of 398,377 shares of Common Stock (the “Series F-1 Warrants”). The Series F-1 Warrants are exercisable at an exercise price of \$8.994 per share of our Common Stock, subject to certain adjustments as set forth in the Series F-1 Warrants. The holders may exercise the Series F-1 Warrants on a cashless basis if the shares of our Common Stock underlying the Warrants are not then registered pursuant to an effective registration statement.

The issuances of the Series F-1 Preferred Stock and the Series F-1 Warrants pursuant to the Exchange Agreements were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

Series F-2 Preferred Stock Offering

On June 14, 2023, we entered into a Securities Purchase Agreement (the “F-2 Purchase Agreement”) with certain accredited investors (the “F-2 Purchasers”), pursuant to which, at the closing of the transactions contemplated by the F-2 Purchase Agreement (the “F-2 Closing”) the F-2 Purchasers agreed to purchase an aggregate of 1,153 shares of our newly created Series F-2 Convertible Preferred Stock (“Series F-2 Preferred Stock”) for an aggregate purchase price of approximately \$748,735. In addition, in connection with the issuance of the Series F-2 Preferred Stock, the F-2 Purchasers received five-year warrants to purchase an aggregate of 124,926 shares of Common Stock (the “Series F-2 Warrants”). The Series F-2 Warrants are exercisable at an exercise price of \$9.228 per share of our Common Stock, subject to certain adjustments as set forth in the Series F-2 Warrants. The holders may exercise the Series F-2 Warrants on a cashless basis if the shares of our Common Stock underlying the Series F-2 Warrants are not then registered pursuant to an effective registration statement.

The issuances of the Series F-2 Preferred Stock and the Series F-2 Warrants pursuant to the Exchange Agreements were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

Equity Line of Credit

On July 20, 2023, we entered into an equity line of credit (“ELOC”) with the Selling Stockholder whereby we have the right to sell up to an aggregate of \$50.0 million of newly issued shares of our Common Stock. On July 20, 2023, we issued 21,841 shares of our Common Stock to the Selling Stockholder as an initial fee for commitment to purchase our Common Stock under the ELOC Purchase Agreement. As of September 30, 2023, we have sold 3,986,991 shares of our Common Stock to the Selling Stockholder pursuant to the ELOC.

The issuances pursuant to the ELOC were made in reliance upon exemptions from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

Item 16. Exhibits.

The list of exhibits in the Exhibit Index to this registration statement is incorporated herein by reference.

Item 17. Undertakings.

- (a) The undersigned registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) that, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a

document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (i) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the Corvallis, Oregon, on February 5, 2024.

CROWN ELECTROKINETICS CORP.

By: /s/ Doug Croxall

Doug Croxall

Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Doug Croxall and Joel Krutz as his true and lawful attorneys-in-fact and agents, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement on Form S-1 and any subsequent registration statement the Registrant may hereafter file with the Securities and Exchange Commission pursuant to Rule 462 under the Securities Act to register additional securities in connection with this registration statement, and to file this registration statement, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in order to effectuate the same as fully, to all intents and purposes, as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Doug Croxall</u> Doug Croxall	Chairman and Chief Executive Officer (Principal Executive Officer)	February 5, 2024
<u>/s/ Joel Krutz</u> Joel Krutz	Chief Financial Officer and Director (Principal Financial Officer and Principal Accounting Officer)	February 5, 2024
<u>/s/ Daniel Marcus</u> Daniel Marcus	Director	February 5, 2024
<u>/s/ Dr. DJ Nag</u> Dr. DJ Nag	Director	February 5, 2024
<u>/s/ Scott Hobbs</u> Scott Hobbs	Director	February 5, 2024

EXHIBIT INDEX

Exhibit No.	Exhibit Description
3.1	Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the registrant's Form S-1/A filed on September 18, 2019).
3.2	Certificate of Amendment to Certificate of Incorporation of Crown Electrokinetics Corp. (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on January 27, 2021).
3.3	By-laws (incorporated by reference to Exhibit 3.2 to the registrant's Form S-1/A filed on September 18, 2019).
3.4	Form of Amended and Restated Certificate of Designations, Preferences and Rights of Series A Preferred Stock of Crown Electrokinetics Corp. (incorporated by reference to Exhibit 3.3 to the registrant's Form S-1/A filed on January 25, 2021).
3.5	Form of Amended and Restated Certificate of Designations, Preferences and Rights of Series B Preferred Stock of Crown Electrokinetics Corp. (incorporated by reference to Exhibit 3.4 to the registrant's Form S-1/A filed on January 25, 2021).
3.6	Form of Certificate of Designations, Preferences and Rights of Series C Preferred Stock of Crown Electrokinetics Corp. (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on April 6, 2021).
3.7	Certificate of Designations, Preferences and Rights of Series D Preferred Stock of Crown Electrokinetics Corp. (incorporated by reference to Exhibit 3.4 to the registrant's Form 8-K filed on July 8, 2022).
3.8	Amendment No. 1 to Series D Preferred Stock Certificate of Designations, Preferences and Rights (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on February 3, 2023).
3.9	Series E Preferred Stock Certificate of Designations, Preferences and Rights (incorporated by reference to Exhibit 3.2 to the registrant's Form 8-K filed on February 3, 2023).
3.10	Series F Certificate of Designation filed with the Secretary of State of Delaware (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on June 6, 2023).
3.11	Certificate of Amendment to Certificate of Incorporation, as amended, filed with the Secretary of State of Delaware (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on June 15, 2023).
3.12	Series F-1 Certificate of Designations filed with the Secretary of State of Delaware (incorporated by reference to Exhibit 3.2 to the registrant's Form 8-K filed on June 15, 2023).
3.13	Series F-2 Certificate of Designations filed with the Secretary of State of Delaware (incorporated by reference to Exhibit 3.3 to the registrant's Form 8-K filed on June 15, 2023).
3.14	Certificate of Amendment to Amended and Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware (incorporated by reference to Exhibit 3.1 to the registrant's Form 8-K filed on August 14, 2023).
4.1	Form of Warrant, dated June 3, 2020, by and between the registrant and Hudson Pacific Properties, L.P. (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on April 6, 2021).
4.2	Form of Warrant, dated January 28, 2021, by and between the registrant and Roth Capital Partners, LLC (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on January 27, 2021).
4.3	Form of Warrant, dated July 19, 2022, by and between the registrant and Roth Capital Partners, LLC (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on July 22, 2022).
4.4	Form of Warrant, dated July 26, 2022, by and between the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on July 29, 2022).
4.5	Form of Warrant, by and between the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on October 20, 2022).
4.6	Form of Senior Note, by and between the registrant and certain investors (incorporated by reference to Exhibit 4.2 to the registrant's Form 8-K filed on October 20, 2022).
4.7	Form of Warrant, among the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on January 4, 2023).
4.8	Form of Senior Note, among the registrant and certain investors (incorporated by reference to Exhibit 4.2 to the registrant's Form 8-K filed on January 4, 2023).
4.9	Form of Warrant, between the registrant and a certain lender (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on February 3, 2023).
4.10	Form of Promissory Note, between the registrant and a certain lender (incorporated by reference to Exhibit 4.2 to the registrant's Form 8-K filed on February 3, 2023).

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Exhibit No.	Exhibit Description
4.11	Form of Waiver Warrant, among the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on March 6, 2023).
4.12	Form of Exchange Warrant, among the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on June 6, 2023).
4.13	Form of Series F-1 Preferred Stock Warrant, among the registrant and certain investors (incorporated by reference to Exhibit 4.1 to the registrant's Form 8-K filed on June 15, 2023).
4.14	Form of Series F-2 Preferred Stock Warrant, among the registrant and certain investors (incorporated by reference to Exhibit 4.2 to the registrant's Form 8-K filed on June 15, 2023).
5.1*	Opinion of Pryor Cashman LLP, regarding legality of shares being registered.
10.1	Intellectual Property Agreement, dated as of January 31, 2016, between Hewlett-Packard Development Company, L.P. and 3D Nanocolor Corp. (and amendments thereto) (incorporated by reference to Exhibit 10.1 to the registrant's Form S-1/A filed on September 18, 2019).
10.2	Fourth Amendment to Intellectual Property Agreement, dated February 4, 2021, by and among Hewlett-Packard Development Company, L.P., HP, Inc. and Crown Electrokinetics Corp. (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on February 10, 2021).
10.3	Collaboration Agreement, dated as of August 23, 2017, between 3D Nanocolor Corp. and Eastman Chemical Company (and amendment thereto) (incorporated by reference to Exhibit 10.2 to the registrant's Form S-1/A filed on September 18, 2019).
10.4	Agreement, dated as of November 15, 2017, between Crown Electrokinetics Corp. and Asahi Glass Co., Ltd. (and amendment thereto) (incorporated by reference to Exhibit 10.3 to the registrant's Form S-1/A filed on September 18, 2019).
10.5	Agreement, dated as of February 1, 2019, between Crown Electrokinetics Corp. and AGC Inc. (f/k/a Asahi Glass Co., Ltd.) (incorporated by reference to Exhibit 10.4 to the registrant's Form S-1/A filed on September 18, 2019).
10.6	Employment Agreement, dated June 16, 2021, by and between Crown Electrokinetics Corp. and Doug Croxall (incorporated by reference to Exhibit 10.6 to the registrant's Transition Report on Form 10-KT filed on March 30, 2022).
10.7	Employment Agreement, dated February 20, 2021, by and between Crown Electrokinetics Corp. and Edward Kovalik (incorporated by reference to Exhibit 10.7 to the registrant's Transition Report on Form 10-KT filed on March 30, 2022).
10.8	Independent Contractor/Consulting Agreement, dated February 25, 2021, by and between Crown Electrokinetics Corp. and Kaizen Reserve, Inc. (incorporated by reference to Exhibit 10.8 to the registrant's Transition Report on Form 10-KT filed on March 30, 2022).
10.9	Employment Agreement, dated June 21, 2021, by and between Crown Electrokinetics Corp. and Joel Krutz (incorporated by reference to Exhibit 10.9 to the registrant's Transition Report on Form 10-KT filed on March 30, 2022).
10.10	Master Supply Agreement, dated September 27, 2021, between MetroSpaces Inc. and Crown Electrokinetics Corp. (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on September 30, 2021).
10.11	Master Supply Agreement, dated December 23, 2021, between Hudson Pacific Properties, L.P. and Crown Electrokinetics Corp. (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on December 23, 2021).
10.12	Master Supply Agreement, dated March 25, 2022, between Brandywine Operating Partnership, L.P. and Crown Electrokinetics Corp. (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on March 28, 2022).
10.13	Sales Agreement, dated as of March 30, 2022, by and between Crown Electrokinetics Corp. and A.G.P./Alliance Global Partners (incorporated by reference to Exhibit 10.1 of the registrant's Form 8-K filed on March 31, 2022).
10.14	Form of Securities Purchase Agreement, dated July 26, 2022, between the Company and the Purchasers (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K dated July 29, 2022).
10.15	Form of Registration Rights Agreement, dated July 26, 2022, between the Company and the Purchasers (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on July 29, 2022).

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Exhibit No.	Exhibit Description
10.16	Form of Securities Purchase Agreement, dated October 19, 2022, between the Company and the Investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on October 20, 2022).
10.17	Form of Registration Rights Agreement, dated October 19, 2022, between the Company and the Investors (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on October 20, 2022).
10.18	Form of Security Agreement, dated October 19, 2022, between the Company and the Collateral Agent (incorporated by reference to Exhibit 10.3 to the registrant's Form 8-K filed on October 20, 2022).
10.19	Form of Asset Purchase Agreement, dated January 3, 2023, between the Company and Amerigen 7 LLC (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on January 4, 2023).
10.20	Form of Securities Purchase Agreement, dated January 3, 2023, among the registrant and certain investors (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on January 4, 2023).
10.21	Form of Line of Credit Agreement, dated February 2, 2023, between the registrant and a certain lender (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on February 3, 2023).
10.22	Form of Waiver Agreement, dated February 28, 2023, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on March 6, 2023).
10.23	Form of Waiver Agreement and Amendment, dated March 24, 2023, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on March 27, 2023).
10.24	Form of Inducement Agreement, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on May 18, 2023).
10.25	Form of LOC Note Amendment, dated May 15, 2023, between the registrant and a certain lender (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on May 18, 2023).
10.26	Form of Demand Note, among the registrant and certain investors (incorporated by reference to Exhibit 10.3 to the registrant's Form 8-K filed on May 18, 2023).
10.27	Form of Exchange Agreement, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on June 6, 2023).
10.28	Form of Demand Note, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on June 6, 2023).
10.29	Form of May Note, among the registrant and certain investors (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on June 6, 2023).
10.30	Form of Securities Purchase Agreement, among the registrant and certain investors (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on June 15, 2023).
10.31	Form of Registration Rights Agreement, among the registrant and certain investors (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on June 15, 2023).
10.32	Form of Securities Purchase Agreement, among the registrant and certain investors (incorporated by reference to Exhibit 10.3 to the registrant's Form 8-K filed on June 15, 2023).
10.33	Forbearance Agreement, among the registrant and a certain investor (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on July 14, 2023).
10.34	First Amendment to Forbearance Agreement, among the registrant and a certain investor (incorporated by reference to Exhibit 10.2 to the registrant's Form 8-K filed on July 14, 2023).
10.35	Common Stock Purchase Agreement, dated July 20, 2023, by and between the Company and Keystone Capital Partners, LLC (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on July 24, 2023).
10.36	Registration Rights Agreement, dated July 20, 2023, by and between the Company and Keystone Capital Partners, LLC (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on July 24, 2023).
10.37	Exchange Agreement by and between the Company and a January Investor, dated August 2, 2023 (incorporated by reference to Exhibit 10.1 to the registrant's Form 8-K filed on August 7, 2023).
21.1	List of Subsidiaries of the Registrant (incorporated by reference to Exhibit 21.1 to the registrant's Form 10-K filed on March 31, 2023).
23.1*	Consent of Marcum LLP
23.2*	Consent of Pryor Cashman LLP (included in their opinion filed as Exhibit 5.1).

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Exhibit No.	Exhibit Description
24.1*	Powers of Attorney (included on the signature page of this registration statement on Form S-1)
101.INS*	Inline XBRL Instance Document.
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).
107*	Filing Fee Table

* Filed herewith



7 Times Square, New York, NY 10036-6569 Tel: 212-421-4100 Fax: 212-326-0806

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February 5, 2024

Board of Directors
Crown Electrokinetics Corp.
1110 NE Circle Blvd.
Corvallis, OR 97330

Re: Resale Registration Statement on Form S-1 of Crown Electrokinetics Corp.

Ladies and Gentlemen:

We have acted as counsel to Crown Electrokinetics Corp., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-1 (the "Registration Statement") filed by the Company on the date hereof with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the offering for resale of up to 200,000,000 shares of the Company's common stock, par value \$0.0001 per share ("Common Stock"), consisting of shares of Common Stock with an aggregate value of \$440,000, which assuming a price of \$0.123 per share (which represents the closing price of the Common Stock on Nasdaq on February 2, 2024), would equal 3,577,236 shares of Common Stock (the "Commitment Shares"), and the remainder (assuming the closing price of the Common Stock on Nasdaq on February 2, 2024), equal to 196,422,764 shares of Common Stock, that the Company may sell, from time to time at its sole discretion, pursuant to the Purchase Agreement (the "Purchase Shares" and together with the Commitment Shares, the "ELOC Shares"), for the account of the selling stockholder identified in the Registration Statement (the "Selling Stockholder"). This opinion letter is furnished to you at your request to enable you to fulfill the requirements of Item 601(b)(5) of Regulation S-K, 17 C.F.R. § 229.601(b)(5), in connection with the Registration Statement.

In our capacity as corporate counsel to the Company and for the purposes of this opinion, we have examined originals, or copies certified or otherwise identified to our satisfaction, of the following documents:

1. the Registration Statement (including the prospectus contained therein);
 2. the Certificate of Incorporation of the Company;
 3. the Bylaws of the Company;
 4. the common stock purchase agreement, dated July 20, 2023 by and between the Company and the Selling Stockholder which provides for the issuance of Common Stock (the "Purchase Agreement"); and
 5. a certain Unanimous Written Consent of the Board of Directors of the Company, dated July 20, 2023 authorizing the transactions relating to the Purchase Agreement and the issuance of the ELOC Shares.
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In rendering the opinion expressed below, we have assumed without verification the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as copies and the authenticity of the originals of such copies, and the due authorization, execution and delivery of all documents by all parties and the validity, binding effect and enforceability thereof (other than the authorization, execution and delivery of documents by the Company and the validity, binding effect and enforceability thereof upon the Company). In addition, we have assumed and not verified the accuracy as to the factual matters of each document we have reviewed and the accuracy of, and each applicable party's full compliance with, any representations and warranties contained therein. As to questions of fact material to this opinion, we have, to the extent deemed appropriate, relied upon certain representations of certain officers of the Company. Accordingly, we are relying upon (without any independent investigation thereof) the truth and accuracy of the statements, covenants, representations and warranties set forth in the documents we have reviewed.

Based upon the foregoing and subject to the assumptions, exceptions, limitations and qualifications set forth herein, we are of the opinion that:

1. The Commitment Shares have been duly authorized for issuance by all necessary corporate action on the part of the Company and, when issued and delivered in the manner stated in, and in accordance with the terms of, the Purchase Agreement, will be validly issued, fully paid and non-assessable.
2. The Purchase Shares have been duly authorized for issuance by all necessary corporate action on the part of the Company and, when issued and delivered against payment of the consideration therefor in accordance with the terms of the Purchase Agreement, will be validly issued, fully paid and non-assessable.

Our opinion is limited to applicable statutory provisions of the Delaware General Corporation Law (the "DGCL") and the reported judicial decisions interpreting those laws, and federal laws of the United States of America to the extent referred to specifically herein. We are generally familiar with the DGCL as currently in effect and the judicial decisions thereunder and have made such inquiries and review of matters of fact and law as we determined necessary to render the opinions contained herein. We assume no obligation to revise or supplement this opinion letter in the event of future changes in such laws or the interpretations thereof or such facts. We express no opinion regarding the Securities Act, or any other federal or state laws or regulations.

This opinion letter is issued as of the date hereof and is necessarily limited to laws now in effect and facts and circumstances presently existing and brought to our attention. We assume no obligation to supplement this opinion letter if any applicable laws change after the date hereof, or if we become aware of any facts or circumstances that now exist or that occur or arise in the future and may change the opinions expressed herein after the date hereof.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving the foregoing consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act, or the rules and regulations of the Commission.

Very truly yours,

/s/ PRYOR CASHMAN LLP

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of Crown Electrokinetics Corp. on Form S-1 of our report, which includes an explanatory paragraph as to the Company's ability to continue as a going concern dated March 31, 2023, with respect to our audits of the consolidated financial statements of Crown Electrokinetics Corp. as of December 31, 2022 and 2021 and for the year ended December 31, 2022 and the nine months ended December 31, 2021, appearing in the Annual Report on Form 10-K of Crown Electrokinetics Corp. for the year ended December 31, 2022. We also consent to the reference to our firm under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

Our report on the consolidated financial statements refers to a change in the method of accounting for leases effective January 1, 2022.

Marcum LLP
Costa Mesa, CA
February 5, 2024

Calculation of Filing Fee Tables

Form S-1
(Form Type)

Crown Electrokinetics Corp.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial effective date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to Be Paid	Equity	Common Stock, par value \$0.0001 per share ⁽²⁾	457(c)	200,000,000	\$ 0.126	\$25,200,000	\$0.0001476	\$ 3,719.52				
Fees Previously Paid	-	-	-	-	-	-	-	-				
Carry Forward Securities												
Carry Forward Securities	-	-	-	-	-	-	-	-				
			Total Offering Amounts			\$25,200,000		\$ 3,719.52				
			Total Fees Previously Paid					\$ 0				
			Total Fee Offsets					\$ 3,967.20				
			Net Fee Due					\$ 0.00				

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement shall also cover any additional shares of common stock, par value \$0.0001 per share (the “Common Stock”) of Crown Electrokinetics Corp. (the “Company”) that may become issuable upon any share split, share dividend, recapitalization or other similar transaction effected without the Company’s receipt of consideration which results in an increase in the number of the outstanding shares of Common Stock.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rules 457(c) under the Securities Act of 1933, as amended, based on the average of the high and low prices of the Company’s common stock on February 2, 2024.

Table 2: Fee Offset Claims and Sources

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Fee Offset Claims	Crown Electrokinetics Corp.	S-1	333-273987 ⁽¹⁾	August 14, 2023	Rule 457(p)		Equity	Common Stock, par value \$0.0001 per share	N/A	\$36,000,000.00	
Fees Offset Sources	Crown Electrokinetics Corp.	S-1	333-273987 ⁽¹⁾		August 14, 2023						\$3,967.20

(1) Crown Electrokinetics Corp. withdrew this registration statement on August 30, 2023 by filing a registration withdrawal request on Form RW prior to the registration statement becoming effective. No securities were sold in connection with the offering to which the registration statement related.