

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 000-56181

SmartKem, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

85-1083654
(I.R.S. Employer
Identification Number)

**Manchester Technology Centre, Hexagon Tower.
Delaunays Road, Blackley
Manchester, M9 8GQ U.K.
(Address of Principal Executive Offices)
Registrant's telephone number +44 161 721 1514**

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act:

Common stock, par value \$0.0001 per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the common stock held by non-affiliates of the registrant, based on the closing sale price on the OTC of \$2.00 per share, was \$29,622,066 as of June 30, 2022.

As of March 24, 2023, there were 27,034,996 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None.

SmartKem, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2022
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Glossary of Terms and Abbreviations

The following is a glossary of technical terms used in this Report:

10⁶ — 1,000,000 (the symbol before the number 6 indicates “raised to the power”)

AMOLED — Active Matrix OLED

AR — Augmented Reality

a-Si — Amorphous silicon (TFT)

BKM — Best-Known Method

BL — Base Layer

°C — Degrees Celsius

CoA — Certificate of Analysis

COC — Cyclic Olefin Copolymer

CPI — Centre for Process Innovation

DLT — Digital Lithography Technology

EDA — Electronic Design Automation

EL-QD-LED — Electroluminescent Quantum Dot Light Emitting Diode

FET — Field-Effect Transistor

IC — Integrated Circuit

IV — Current-Voltage

LTPS — Low-Temperature Polysilicon TFT (Note: Low-Temperature is relative to silicon wafer processing temperatures >300°C, however not low temperature relative to the glass transition temperature of many plastics (<150°C))

OGI — Organic Gate Insulator

OLAE — Organic and Large Area Electronics

OLED — Organic Light Emitting Diode

OSC — Organic Semiconductor

OTFT — Organic Thin-Film Transistor

PDK — Process Design Kit

PEN — PolyEthylene Naphthalate

PET — PolyEthylene Terephthalate

PI — Polyimide

POR — Process of Record

PV — PassiVation layer

SAM — Self-Assembled Monolayer

SRL — Sputter Resistant Layer

TAC — Cellulose TriAcetate

T_g — Glass transition temperature

TFT — Thin-Film Transistor

VR — Virtual Reality

V_{th} — Threshold Voltage

V_{to} — Turn-on Voltage

CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the sections entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contains express or implied forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in forward-looking statements are reasonable, such statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by forward-looking statements. All statements other than statements of historical fact contained in this Report are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may,” “could,” “will,” “would,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “intend,” “predict,” “seek,” “contemplate,” “project,” “continue,” “potential,” “ongoing” or the negative of these terms or other comparable terminology.

These forward-looking statements include, but are not limited to, statements about:

- the implementation of our business model and strategic plans for our business, technologies and products;
- the rate and degree of market acceptance of any of our products or organic semiconductor technology in general, including changes due to the impact of (i) new semiconductor technologies, (ii) the performance of organic semiconductor technology, whether perceived or actual, relative to competing semiconductor materials, and (iii) the performance of our products, whether perceived or actual, compared to competing silicon-based and other products;
- the timing and success of our, and our customers’, product releases;
- our ability to develop new products and technologies;
- our estimates of our expenses, ongoing losses, future revenue and capital requirements, including our needs for additional financing;
- our ability to obtain additional funds for our operations and our intended use of any such funds;
- our ability to remain eligible on an over-the-counter quotation system;
- our receipt and timing of any royalties, milestone payments or payments for products, under any current or future collaboration, license or other agreements or arrangements;
- our ability to obtain and maintain intellectual property protection for our technologies and products and our ability to operate our business without infringing the intellectual property rights of others;
- the strength and marketability of our intellectual property portfolio;
- our dependence on current and future collaborators for developing, manufacturing or otherwise bringing our products to market;
- the ability of our third-party supply and manufacturing partners to meet our current and future business needs;
- our exposure to risks related to international operations;
- our dependence on third-party fabrication facilities;
- the impact of the COVID-19 pandemic and any future communicable disease outbreak on our business and operations;
- our relationships with our executive officers, directors, and significant stockholders;
- our expectations regarding our classification as a “smaller reporting company,” as defined under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and an “emerging growth company” under the Jumpstart Our Business Startups Act (the “JOBS Act”) in future periods;
- our future financial performance;

- the competitive landscape of our industry;
- the impact of government regulation and developments relating to us, our competitors, or our industry; and
- other risks and uncertainties, including those listed under the caption “Risk Factors.”

These statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under “Risk Factors” and elsewhere in this Form 10-K.

Any forward-looking statement in this Form 10-K reflects our current view with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our business, results of operations, industry and future growth. Given these uncertainties, you should not place undue reliance on these forward-looking statements. No forward-looking statement is a guarantee of future performance. You should read this Form 10-K and the documents that we reference in this Form 10-K and have filed with the Securities and Exchange Commission, or the SEC as exhibits hereto completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Item 1. Business

Unless otherwise stated or the context otherwise indicates, references to “SmartKem” the “Company,” “we,” “our,” “us,” or similar terms refer to SmartKem, Inc. and its subsidiaries.

Overview

We are seeking to reshape the world of electronics with our proprietary organic semiconductor platform that we believe has the potential to affect the form and function of the next generation of low-cost displays and sensors. Our patented TRUFLEX[®] inks are solution deposited at a low temperature, on low-cost substrates to make OTFT circuits. Our organic semiconductor platform can be used in a number of display technologies including miniLEDs, microLED and AMOLED displays that can drive televisions, laptops AR and VR headsets, smartwatches and smartphones. We have a research and development facility in Manchester, UK, and manufacture product prototypes for prospective customers using our semiconductor manufacturing processes housed at the Centre for Process Innovation (CPI) at Sedgefield, UK. We have an extensive IP portfolio including 125 granted patents across 19 patent families, and 40 codified trade secrets.

Our Technology

The invention and development of FET devices has enabled the rapid expansion of the electronics industry, particularly with the advent of the planar process essential for integrated circuitry. This is due to the ability to create compact circuits with an ever-increasing capability, lower cost per logic function, and a higher frequency of operation. Integrated circuits are present in almost all electronic devices today and there is a constant drive to embed smart features into a greater number of applications.

TFTs are a type of FET that can be processed on large area flat surfaces to make display screen backplanes, digital/analog electronics, and sensor arrays for a wide range of consumer and industrial applications. The manufacturing of silicon-based electronics either in wafer or thin-film form, such as a-Si on glass, requires a high temperature process (approximately 300°C). Because plastic materials melt at high temperatures, TFTs are manufactured on special glass that can withstand such high temperatures and are used to produce mainly rigid products.

Our OTFT technology comprises predominantly organic materials (such as polymers and organic small molecules) that can be solution coated at low temperature (as low as 80°C) onto a wide range of low-cost plastic substrates, as well as traditional substrate materials. The similarity in stretchability and coefficient of thermal expansion between the substrate and our TRUFLEX[®] materials permits production of robust, bendable/flexible and lightweight devices. Our OTFT performance, as measured by charge mobility, exceeds a-Si performance by a factor of four, which we believe offers product designers a significant extension of capability, by enabling them to transform flat, bulky objects into lightweight, robust, and flexible products that we expect will appeal to consumers.

Our OSC materials use a polycrystalline small molecule with high mobility, together with a low molecular weight semiconducting polymer, to control the morphology, phase segregation and uniformity of the semiconducting layer and a solvent to deliver inks that are used to make devices with mobilities in excess of 4 cm²/Vs. In addition, we have developed all the other layers that are necessary to form the complete transistor stack.

Plastic substrates, such as PET, PEN, TAC and COC have relatively low T_g in the range of 100°C to 200°C. Using these plastics at temperatures above this level causes significant distortion and, in some instances, may even result in melting or thermal breakdown of the polymer. Our OTFTs can be processed at temperatures as low as 80°C, enabling the use of polymer substrates that are optically clear and low-cost. In addition, short duration processing at low temperature results in significant energy savings. Also, plastics do not have the same risk of shattering as glass and therefore less strengthening around the edge of large area plastic-based devices is necessary, such as the use of aluminum frames to support torsional rigidity. Plastics can also be processed in very thin sheets (tens of microns) which saves space that can be used for increased battery capacity. Thin plastic substrates also enable the device to conform very easily to non-planar surfaces such as the human body which makes them well suited for wearable sensor and display devices. Thin plastic sheets are also conformable, allowing electronics to be curved around irregular surfaces.

Our BL, SAM, OSC, OGI, SRL and PV inks can be deposited using standard coating techniques such as spin-coating or slot-die coating which are widely used for the lithography processes used in TFT manufacturing. As a result, our OTFT process can be integrated into existing manufacturing lines using standard industrial techniques without the need for large capital investment. Furthermore, the solubility of our inks would permit customers to digitally print the features of the OTFT device, which we believe may be attractive to potential customers seeking to lower manufacturing costs.

In February 2023, we joined the collaborative Hi-Accuracy project that brings together eleven of the most innovative and forward-thinking companies in the industry in a bid to establish the next generation of OLAEs — including OTFT and EL-QD-LED based displays. Our role will include developing an OTFT back-plane upon which a QD-LED front-plane will be printed. The resulting 300ppi RGB display will showcase the performance of our range of TRUFLEX[®] materials when used in conjunction with micron scale additive patterning processes and low temperature processing conditions. As part of the Hi-Accuracy project, printing of our OSC inks is being trialed using high resolution and high efficiency Reverse Offset Printing and Electrostatic Jetting as a route to future large area manufacture of flexible OLAE structures such as OTFTs and EL-QD-LED displays.

Products and Services

We have internally developed all the materials necessary to fabricate high-performance OTFT devices except for the contact metals and substrates on which those materials are deposited. We supply our products as a set of stable liquid inks, with each ink forming a separate layer of the device. Each of the inks forming these layers has been carefully designed to result in the device performance and electrical stability required by the customer. We supply the ink set with a detailed POR for making the desired device. In addition to supplying our OTFT stack materials as a package, prospective customers are evaluating the use of our range interlayer materials as single layers in new and existing chip and display products, such as redistribution layers, pixel definition layers, permanent resists and organic dielectric layers due to the favorable processability, patternability and other properties of our materials when compared with existing materials.

Products have been scaled up for formulated ink supply to customers in packages sizes ranging from 100mL to several liters. These are supplied with CoA and POR alongside device and design consultancy to ensure successful technology transfer.

We intend to offer foundry services to customers who wish to have electronic circuits manufactured for them. Through arrangements with the United Kingdom's CPI, we have access to a 2.5 generation (370mm x 470mm) foundry that we use for creating prototypes for evaluation by potential customers. In 2022 we began process characterization using a maskless aligner at CPI to reduce the time from CAD layout to prototype for new designs. Additionally, in partnership with The Industrial Technology Research Institute of Taiwan, we successfully demonstrated the direct patterning of one of our interlayer dielectric materials using digital lithography technology (DLT).

We do not have the ability to produce our flexible transistors at commercial scale and intend to seek relationships with existing foundries that are capable of producing our products at commercial scale to provide us with the ability to meet full production orders for customers that do not have their own facilities. We use product prototyping services to demonstrate applications enabled by OTFT to prospective customers. This allows potential customers seeking to evaluate physical samples of our materials prior to committing to purchase.

In early 2023, we announced the creation of the first monolithic micro-LED display using OTFTs. We believe that by simplifying the process of connecting transistors to LEDs, there is the potential to accelerate the commercialization of micro-LED displays. Consumer electronics companies are actively developing micro-LED displays since they promise higher brightness, lower power consumption and longer lifetime. We believe this will be particularly important for portable powered displays such as smartwatches and AR/VR displays which cannot readily accommodate large batteries.

Advantages of Our TRUFLEX[®] Technology

The most widespread technology is a-Si which is principally used in the manufacture of backplanes for LCDs. More recent developments in inorganic semiconductors include use of the metal oxide IGZO for

backplanes for large area OLED TVs and LTPS for high resolution cell phones. All these inorganic processes are operated at high temperatures and therefore require high-cost substrates, especially if they are to be processed on plastic. All are subject to failure on bending, have limited flexibility, and require additional product engineering for protection during bending to prevent failure of the display. This adds to the overall cost of production of a bendable or foldable device.

Our ability to employ TRUFLEX[®] materials at temperatures as low as 80°C enables manufacturers to use low-cost plastic substrates and the organic nature of our materials allows the transistors to be truly flexible. We believe that robust and lightweight display screens which are capable of being bent or folded would enable manufacturers of mobile devices to create products more tailored to customer demand and that our TRUFLEX[®] OTFTs are uniquely suited for this application. Our materials are organic and hence can withstand the strains experienced in severe bending such as a fold of a display. In addition, the substrate does not require the degree of protection from the edges as glass displays do which can eliminate the weight and cost associated with aluminum frames. Low temperature processing enables a wider range of plastic substrates to be used, allowing properties such as optical clarity to be optimized.

There are also opportunities to process the OTFT on top of other display elements, such as a micro-LED array since the low process temperature would not damage the emissive components. We believe this ability to pattern the backplane on top of other components could lead to alternative display or sensor design configurations with advantages such as higher aperture ratio. We also believe that our ability to build the backplane in-situ over the micro-LED array — which would eliminate the critical front and backplane hybridization step — has the potential to increase the yield of the display fabrication process. The small size of micro-LED's and tight pixel pitches makes it challenging to ensure each micro-LED aligns perfectly with the corresponding pixel driver on the backplane. Additionally, hybridization processes can introduce a thermal mismatch between the front and backplane materials causing micro-LEDs to crack or fail from the mechanical stress and can produce a non-uniform bond between the two layers. We believe our monolithic build process will greatly reduce or eliminate these issues. Moreover, when micro-LEDs are directly integrated into the backplane using a monolithic process there is no requirement for the supplementary layers and interfaces needed in some production methods to bond the two pieces together — consequently optical losses should be reduced, and overall efficiency of the display should be improved.

Market Opportunity

According to Precedence Research, the global display market size was valued at \$168.4 billion in 2022 and is projected to hit around \$297.1 billion by 2030, expanding growth at a CAGR of 7.35% from 2022 to 2030. Growth in the display market is driven primarily by increasing demand for consumer electronics, including smart phones, automotive products, e-readers and flat panel displays. We believe that display manufacturers continue to seek product differentiation as a part of their marketing strategies.

Our TRUFLEX[®] materials enable customers to make backlight units that are both flexible and can drive high currents stably. Over the last two years several manufacturers have launched TVs with mini-LED backlight units and a number of companies are developing a new generation of direct emission micro-LED displays, flexible OLED displays, and transparent OLED displays. These new formats are supported by a variety of different backplanes using tiled versions of existing technologies or PCB backplanes. We believe that TRUFLEX[®] materials can be used to provide active-matrix transistor arrays that can address all of these new product categories using low-cost, flexible substrates. As products become more sophisticated and smart technology is implemented in wider use cases, we expect that manufacturers will seek technology solutions, such as our TRUFLEX[®] technology that enable them to implement the product designs that consumers will demand.

In addition, we believe that our OTFTs are suitable for applications where a relatively low number of transistors are required over a wide area such as sensors or distributed logic circuits.

Commercialization Strategy

A large sector of our target customers are large consumer electronics companies based in Asia (Taiwan, South Korea, Japan and China) that already own or have access to display backplane manufacturing lines and engage in large scale production of display products for TV or mobile/tablet markets using a-Si

process lines. We believe that these companies are continually seeking to create novel, higher added value electronics products that cannot be manufactured using a-Si glass backplanes. We believe these potential customers will be attracted to our TRUFLEX[®] technology which would enable them to create novel, plastic-based products with improved robustness, higher flexibility and lighter weight using their existing production lines.

Other potential customers may not have access to display manufacturing lines and will seek a complete solution for their needs, including production capability. These are often companies who will use displays as a component within their products and will buy from Asian manufacturers according to what is available at the time. We can provide prototype production from the Gen 2.5 line at CPI. We intend to scale this capability by partnering with one or more foundry providers to scale up our ability to meet full production orders for customers that do not have their own facilities. Once the demand for our backplanes has exceeded our ability to supply products then the market pull would be sufficient to engage Asian display makers to transfer production to their facilities.

Our market strategy includes the identification of specific capabilities or products that we believe can most benefit from our TRUFLEX[®] technology. This identification process may involve our marketing efforts or feedback and requests from potential customers. As described below, once a commercial opportunity is identified, we will engage in a process of demonstration and evaluation with the potential customer.

Our strategy also involves the design and sale of materials for use as logic devices or circuits. Once we have identified a specific application requirement, we expect to proceed with development work through an understanding of the product specifications and engineering work to calculate the size and capabilities of pixel TFTs and storage capacitors. For digital logic applications, the situation is more complex, and circuits cannot be designed without access to supporting simulation, design, and layout software. In silicon IC design, EDA tools are used to predict the behavior of circuits made using foundry services. This allows designers to simulate the behavior of prototype circuits and check their functionality ahead of the fabrication, therefore saving time and money.

We have developed an initial PDK for our process that is designed to be used by third parties in EDA software to allow them to design digital logic devices. The PDK contains information such as design rules that are specific to our process equipment, and it will also incorporate models of OTFTs made using our materials set. This will be used for digital device simulation and layout of circuit designs. We continue to characterize the electrical performance of our materials and to use that data to improve the correlation between simulations produced using those tools and actual devices. As part of this development, we expect to populate a library of reference designs for common gates used in digital electronic circuits to further simplify third party design processes.

Sales and Marketing

We have a direct sales force consisting of two employees located in Taiwan, and sales representation in China. Our CEO and management team are also actively engaged in developing customer and partner relationships. We believe that our initial customers will be located in Taiwan, Japan and the Peoples Republic of China but we are also directly working with OEMs located in North America, Europe and Asia who have the ability to require their suppliers to use our materials. Our sales team is supported by engineers and product specialists located at our headquarters in the U.K. We intend to seek third-party distribution or sale-agent agreements with potential partners where we believe such agreements are justified by the potential market opportunity.

Our sales and marketing efforts were adversely impacted by the effects of the COVID-19 pandemic. During the pandemic, travel to and from Asia and other regions was significantly restricted. As a result, we had to cease virtually all business travel and sought to increase our presence in affected markets through other means, including engaging sales representation in China. In addition, many of our expected customers are located in Asia, which has imposed severe lock-down restrictions in an effort to combat the pandemic. Those customers have reported supply shortages and manufacturing delays as a result of the pandemic and the related restrictions, which has had a material adverse impact on the expected markets for our products. In addition, shipping costs have increased significantly as a result of limitations on other modes of

transportation. Pandemic restrictions have now been mostly lifted in these territories, allowing business travel to recommence.

Our marketing efforts include attendance at significant industry tradeshows at which we demonstrate the capabilities of our TRUFLEX[®] technology and responding to requests for proposals and other inquiries from potential customers. We publish technical papers that explain our products and technology to inform and engage with potential customers. We also have entered into a number of joint development agreements to demonstrate the capabilities of our materials and to show the feasibility of utilizing our products in specific applications. In addition, we make presentations at trade events to showcase our technology and familiarize potential customers with the value we believe our technology adds to various applications. We also publish press releases and other announcements relating to our technical capabilities or achievements and include product information and related technical materials on our website.

We expect that the time between the identification of a potential customer and the receipt of a purchase order or agreement for the sale of our products will be relatively long. In certain instances, a potential customer may contact us seeking a generic sample of our materials for evaluation. In other instances, a customer may come to us with specific performance specifications and inquire about our ability to provide products meeting their specifications after which we provide samples of materials or specific data for evaluation. After the initial evaluation, the prospective customer may request a prototype of a specific design as a proof-of-concept. We fabricate prototypes using the Gen 2.5 foundry access we have through our arrangement with CPI. A significant proportion of all work done during this phase of our sales cycle would be done at our expense, with customers making a contribution in some cases.

Assuming successful prototyping is completed, we expect that we would negotiate and enter into a development agreement with an interested customer under which we would, in collaboration with the potential customer, engage in further engineering and design work. We expect that we would receive compensation for those services. We might also engage in pilot-scale level manufacturing of the products developed for the customer as part of that process.

After the satisfactory completion of development work and any related pilot project, an interested customer would then enter into a sales agreement with us under which we would either agree to manufacture products to the customer's specifications from time to time as requested by the customer, including potential minimum quantity requirements, or we would agree to license our process to the customer for a fee based on a royalty of sales and enter into a supply agreement for our proprietary inks, utilizing a process owned and qualified by us, formulated into inks either in our own facilities or by third-party formulators and shipped directly to customers.

We expect that the sales cycle described above will take approximately 12 – 24 months. During that period, we will be required to incur significant expenses without any assurance that a customer order will be obtained. Accordingly, we will have a significant risk that we will incur those expenses without ever making a sale.

In October 2021, we entered into a joint development agreement with RiTdisplay, a Taiwan based developer of displays. Under this agreement the two parties are collaborating on the production of a full color demonstration AMOLED display.

In February 2022, we entered into a joint development agreement with Nanosys Inc., a leader in developing and delivering quantum dot and micro-LED technology. Under this agreement the two parties will work together on a new generation of low-cost solution printed micro-LED and quantum dot materials for advanced displays.

Research and Development

To-date, we have focused our resources on the development of improved performance organic semiconductors which have high charge mobility, excellent uniformity, device stability and robustly satisfy the TFT performance specifications defined by potential customers. Our portfolio of available organic semiconductors has been extended as a result of these efforts to include newly synthesized small molecules. Our chemistry team, led by our Chief Scientist, has in-depth knowledge of structure-property relationships for organic materials. Dielectric and passivation interlayer materials are also critical to enabling the OTFT

device current to be maximized while ensuring stability during extended operation under voltage or current bias stress. Some of the critical parameters for performance of an OTFT device include:

- Charge mobility — the ability of the material to conduct charge under an electric field. The higher the charge mobility number the greater the current that can be driven through the device for a given size. Also, in circuits mobility determines the maximum switching frequency of a device from one logic state to another. a-Si has a mobility of ~ 0.5 cm²/Vs, LTPS typically has mobility >50 cm²/Vs and crystalline silicon has a mobility of near 1000 cm²/Vs. SmartKem's OTFTs can achieve >3 cm²/Vs at channel length of 4 microns and >4 cm² at 10 microns.
- On/off ratio — the ratio of the current driven by the transistor during its on state to the current passed during biasing in its off state. On/off ratios of $>10^6$ are typically required for TFTs used in display pixels so that the programmed voltage does not decay during the frame time. Our OTFTs have on/off ratios in the order of 10^7 and have even demonstrated 10^9 on/off ratio in large W/L devices.
- Turn on voltage (V_{to}) — the gate voltage at which the TFT starts to increase its current output. Values close to zero volts are considered desirable for low power consumption products. The device should also achieve its transition from off to on over as small a range of gate voltages as possible since this can reduce energy consumption and hence is desirable in battery powered devices.
- Threshold voltage (V_{th}) — gate-source voltage at which the magnitude of the drain current reaches a specified low value (e.g., 10^{-9} A).
- Threshold voltage (V_{th}) stability — The ability of device to maintain a defined threshold or turn on voltage following a period of electrical stress (either at room temperature or elevated temperature). Bias voltage shifts of <2 V after 1 hour voltage stress at 60°C and +30V or -30V is a typical specification required for display applications. We have demonstrated <1 V V_{th} bias stress shift for NBTS and <2 V for PBTS in R&D tests. We are working on integrating this capability into our full five-mask device stack.

More recently, in response to requests from potential customers, our chemistry team has focused on the development of a range of specialized polymer interlayers. Some of these materials are intended for use in the display industry as redistribution layers and as pixel definition layers. Additional specialty dielectric polymer formulations are being designed for use in advanced mobile communications operating at frequencies in excess of 5GigaHz (5G applications and beyond). We believe our novel dielectrics should enable manufacturers to offer higher bandwidth and faster speed with lower power consumption. Interlayer inks are also being provided to potential customers for evaluation across a range of applications.

Once new materials have been characterized, our materials process development team customizes the formulations and process parameters to allow integration into the device process at CPI. This team establishes the BKMs for each material and generates an understanding of the parameters that can influence the performance. Initial work may also be done to plan scale up routes for the materials in anticipation of the need to supply to customers.

The generation of fabrication processes and the integration of new materials is carried out at CPI under the direction of our Chief Technology Officer. The toolsets at this site provide a rapid feedback loop between our chemistry R&D and industry relevant device performance data sets. Additionally, the equipment sets can be used to generate demonstrator OTFT backplane devices on plastic, OTFT driven displays, sensors or circuits and a wide range of other device prototypes Technology transfer to customers' pilot lines can also be supported by this team and they can help to diagnose and rectify process problems. Process engineers also travel to customers' sites to assist technology transfer alongside our field application engineering team in Taiwan. Through this work, we believe we have developed a novel method for integration of OTFT backplanes and micro-LED devices. We believe this process is feasible due to the low temperature processing of OTFT. We believe that the use of higher temperature materials, such as a-Si, LTPS and IGZO, would damage the LED devices. As a result, current practice is to attach the micro-LEDs after the backplane is fabricated. Using our process, we have demonstrated active matrix backplanes driving micro-LEDs using OTFT at high brightness ($>100,000$ nits). We have sought patent protection for our processes. In addition, the Company has successfully integrated OTFT and OLED (AMOLED) in a 200ppi display.

We are a member of the University of California, Santa Barbara (UCSB) Solid State Lighting and Energy Electronics Centre (SSLEEC) which is conducting innovative research into the development of micro-LED displays. As a member of the SSLEEC we have the right to obtain access to technologies and intellectual property developed by the Center in technology fields such as micro-LEDs and displays. In 2023, we obtained exclusive rights to a UCSB patent family related to Micro-LEDs.

Intellectual Property

Our commercial success depends in part on our ability to obtain and maintain intellectual property protection for our active organic semiconductors, formulated OSC and passive dielectric interlayer inks, processes and know-how that collectively comprise our TRUFLEX[®] technology, to operate without infringing the proprietary rights of third parties, and to prevent others from infringing our proprietary rights. Over the past 10 years, we have been building and are continuing to build the intellectual property portfolio relating to our TRUFLEX[®] technology. Our policy is to seek to protect our proprietary position by, among other methods, filing U.S. and certain foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development and implementation of our business. We also rely on trade secrets, know-how, and technological innovation to develop and maintain our proprietary position. We cannot be certain that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our technology.

Our strategy for the protection of our proprietary technology is to file international (Patent Cooperation Treaty) patent applications and pursue these in national jurisdictions that represent significant market opportunities. However, we assess on a case-by-case basis whether it is strategically more favorable to maintain trade secret protection for our inventions and “know-how” rather than pursue patent protection the latter of which documents will ultimately be in the public domain. Generally, patents have a term of twenty years from the earliest priority date, assuming that all maintenance fees are paid, no portion of the patent has been terminally disclaimed, and the patent has not been invalidated. In certain jurisdictions, and in certain circumstances, patent terms can be extended or reduced.

We believe that we are a technology leader in the design, development, and production of active and passive electronic materials for use in organic electronic applications. Excluding licensed-in IP, our patent portfolio comprises 19 patent families with 125 granted patents, 15 pending patents and 40 codified trade secrets. Our patents cover the active organic semiconductor materials, passive interlayer formulations, and deposition processes comprising our TRUFLEX[®] technology. We also have numerous patent claims and pending patent applications covering a variety of electronic devices including a novel dual gate application that enables enhanced V_{to} control and recent applications include Micro-LED devices and improved processes. Because our patent portfolio covers all material aspects of our TRUFLEX[®] technology, we believe we have strong protection for our technology and a competitive advantage over potential competitors who may seek to duplicate our ability to create flexible transistors.

We also rely on trade-secret protection for our confidential and proprietary information, and we typically use non-disclosure agreements when commencing a relationship with a potential customer or partner. We have an internal program to document our trade secrets for each major area of our technology and operations. We cannot be sure that we can meaningfully protect our trade secrets on a continuing basis. Others may independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets. The TRUFLEX[®] trademark is granted and registered to the Company in its 10 commercially interesting jurisdictions including USA, China, Korea, Taiwan, Japan, and Europe.

We own substantive rights to the chemistry, process, and stack design rules necessary to implement our technology in all jurisdictions of commercial interest.

Manufacturing and Supply

We obtain strategic intermediates and final products from multiple sources who produce our active semiconductor materials to our specifications. Our TRUFLEX[®] materials fall into two main categories,

“active” organic semiconductor materials and “passive” interlayer materials. Our active materials generally require high levels of process and product control, and therefore these are synthesized from start to end by us or a third party that has met certain certification requirements and then formulated by us into the organic semiconductor inks. We validate active components internally before use. Our passive interlayers inks use a range of commercially available intermediates, formulated to our specifications to meet differing end-use performance parameters depending on the intended use. Our active and passive inks are proprietary to us.

We synthesize the active materials either internally or using third-party suppliers that meet specific certification requirements. The raw materials used to produce the formulated passive interlayers are purchased from multiple suppliers and tested and validated internally before use. The passive and active interlayer inks are presently manufactured internally in our formulation facility located in Manchester in the U.K. We are also evaluating a base layer material manufactured on a larger scale by a third-party contractor. Initial results have been promising and we are continuing our testing and evaluation.

We use our U.K.-based formulation activity to enable customers to validate our materials on their Gen1-Gen2.5 pilot lines. Our TRUFLEX[®] inks typically comprise between 1.2% up to 25% by weight of solids with the remainder being made up by electronic grade solvents. For commercial supply quantities, to avoid the shipping costs associated with large quantities of locally available solvents, we expect to supply fully formulated ink to customers from a formulation facility located close to the customer’s manufacturing facility. We may also outsource the ink manufacture to an accredited third-party local formulator subject to our final QC testing of the formulated inks.

We have not experienced any supply shortages with respect to the materials used to formulate our proprietary inks. In addition, we have not experienced scheduling delays in obtaining access to CPI’s foundry equipment.

To date, our manufacturing and supply operations have not been adversely impacted by the COVID-19 pandemic. However, we may be impacted in the future as we seek to expand our operations and enter into foundry arrangements with third-party manufacturers.

CPI Agreement

We perform prototyping with our own employees using foundry equipment made available to us by CPI. We use the CPI facility to produce test samples for internal evaluation and for the supply of demonstrators to potential customers and for general market development. CPI is funded through a combination of U.K. government grants, collaborative research and development projects funded by the private and public sector and contracts funded by businesses. CPI provides services to companies engaged in translating ideas and inventions into commercially successful products and processes. It operates seven national facilities in the Northeast of England and Scotland and provides industry relevant expertise and assets to its customers.

We have entered into a framework services agreement with CPI Innovation Services Limited (“CPIIS”), the management company for CPI, pursuant to which we purchase services consisting primarily of access to CPI process equipment required for fabrication as well as access to CPI staff with specific skills, to the extent required, at specified costs, including a minimum annual spending requirement. We have 18 employees at the CPI facility who operate or support operations and OTFT developments using the CPI equipment on our behalf. Pursuant to the terms of this agreement, we utilize an online booking system to book usage of equipment for immediate use, subject to availability. For critical equipment that other CPI customers may seek to use, we may book up to two weeks in advance to guarantee availability. CPIIS has agreed to use its reasonable commercial endeavors to supply the requested services.

The latest agreement with CPIIS became effective upon the Closing and has a fixed term of three years. The agreement may be terminated by either party in the event of a breach by the other party. We also lease office space at CPI’s facility in Sedgfield, England.

Competition

We believe that competition in our targeted markets is based on a variety of factors, including capability, functionality, performance, reliability, ease of use and ability to supply in sufficient quantities. We believe we can, or will be able to, compete effectively based on these factors.

a-Si technology is an inorganic process widely used in the manufacture of backplanes for LCDs. More recent developments in inorganic semiconductors include use of the metal oxide IGZO for backplanes for large area OLED TVs and LTPS for high resolution cell phones. All these inorganic processes are operated at high temperatures and therefore require high-cost substrates, especially if they are to be processed on plastic. We believe that integration of TFTs with temperature sensitive devices will be made easier with our OTFT inks due to their lower temperature requirements. In addition, we believe all inorganic TFT based active-matrix technologies face challenges in bending compared with organic TFTs resulting in higher manufacturing costs.

A number of competitors have engaged in the development of organic inks. However, these competitors either opt to use polymeric semiconductors (BASF SE, Merck KGaA and Sumitomo Chemical Co., Ltd.) that process well but have a lower mobility than the polycrystalline organic materials in our TRUFLEX[®] materials, or polycrystalline semiconductors that have high mobility but relatively poor uniformity when processed. We believe our proprietary technology, which combines a polycrystalline molecule with a matched semiconducting polymer, provides higher mobility and better processability over these technologies.

Many of our potential competitors could have substantial competitive advantages such as greater name recognition, longer operating histories, broader and deeper product portfolios, larger customer bases, substantially greater financial and other resources, and larger scale manufacturing operations. However, we believe our products have the potential to compete with many of our competitors' offerings through product performance, product reliability and satisfaction of customer qualifications and standards.

Government Regulation

In addition to customer specific requirements for safety health and the environment, our formulated materials also may be subject to government regulation during their use in the country of device manufacture and from regulations covering the materials in the finished device. These could include the toxicity (potential for Carcinogenicity, Mutagenicity, and Teratogenicity) and restrictions from the Environmental Protection Agencies in the countries of manufacture.

All new chemicals we obtain are evaluated at the time of order and a Control of Substances Hazardous to Health ("COSHH") assessment is performed prior to commencement of any practical work with these materials. The COSHH assessment considers chemical hazards associated with the material, its physical properties, the scale of the planned work and the nature of that work e.g., temperature and containment. This process provides the first opportunity to screen out any materials that may be prohibited by the ultimate customer. Any use of material in Health and Safety Executive COSHH hazard category E, all but gram scale uses of non-volatile material in hazard category D and use of material in hazard category C in quantities of more than 1kg would trigger a management review. While it is possible that management authorization may be given to conduct research using materials in categories D & E, their use in a potentially formulated product would be discouraged and an alternative sought at an early stage. Materials are also screened against lists of banned and restricted materials provided by display manufacturers. Any material present on the display manufacturers banned list would not be used in formulated product.

We work with a third-party service provider to create safety data sheets for our formulated products that are shipped to customers and other end users. Our formulated products contain no materials that are restricted in the U.K. and no permissions or exemptions are required.

Our OGI material is fluorinated and spun from a fluorosolvent listed under regulation (EC) No 428/2009 of 5 May 2009 under section 1C006d. Export of formulations may require a Standard individual export license to be applied for and end use declaration made by the customer. These can be obtained through the U.K.'s SPIRE system.

To the extent our products are or become subject to U.K. export controls and regulations, these regulations may limit the export of our products and technology, and provision of our services outside of the U.K., or may require export authorizations, including by license, a license exception, or other appropriate government authorizations and conditions, including annual or semi-annual reporting. Export control and economic sanctions laws may also include prohibitions on the sale or supply of certain of our products to

embargoed or sanctioned countries, regions, governments, persons, and entities. In addition, various countries regulate the importation of certain products, through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products. The exportation, re-exportation, and importation of our products and technology and the provision of services, including by our partners, must comply with these laws or else we may be adversely affected, through reputational harm, government investigations, penalties, and a denial or curtailment of our ability to export our products and technology. Complying with export control and sanctions laws may be time-consuming and may result in the delay or loss of sales opportunities. Although we take precautions to prevent our products and technology from being provided in violation of such laws, our products and technology may have previously been, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. If we are found to be in violation of U.K. sanctions or export control laws, it could result in substantial fines and penalties for us and for the individuals working for us. Export or import laws or sanctions policies are subject to rapid change and have been the subject of recent U.K. and non-U.K. government actions. Changes in export or import laws or sanctions policies, may adversely impact our operations, delay the introduction and sale of our products in international markets, or, in some cases, prevent the export or import of our products and technology to certain countries, regions, governments, persons, or entities altogether, which could adversely affect our business, financial condition and results of operations.

Employees

As of December 31, 2022, we had 50 full-time employees and five part-time employees of which 48 are based in the United Kingdom. 24 of our employees hold advanced degrees, including 13 Ph.Ds. We believe that our scientists and technical experts are significant assets of our business, and we value and support hiring exceptional talent to further develop our TRUFLEX[®] technology and drive our business growth.

Corporate History

We were originally incorporated as Parasol Investments Corporation in the State of Delaware in May 2020. Prior to the acquisition of SmartKem Limited in February 2021, we were a “shell” company registered under the Exchange Act, with no specific business plan or purpose. In accordance with “reverse merger” accounting treatment, our historical financial statements at period ends, and for periods ended, prior to our acquisition of SmartKem Limited were replaced with the historic financial statements of SmartKem Limited in our SEC filings made after the acquisition.

Our principal executive offices are located at Manchester Technology Centre, Hexagon Tower, Delaunays Road, Blackley Manchester, M9 8GQ U.K. Our telephone number is +44 (0)161 721 1514.

Additional Information

We maintain a website at www.smartkem.com. On our website, investors can obtain, free of charge, a copy of our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, other reports and any amendments thereto filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we file such material electronically with, or furnish it to, the SEC. None of the information posted on our website is incorporated by reference into this Report. The SEC also maintains a website at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding us and other companies that file materials with the SEC electronically.

Item 1A. Risk Factors

An investment in our securities is highly speculative and involves a high degree of risk. We face a variety of risks that may affect our operations or financial results and many of those risks are driven by factors that we cannot control or predict. You should carefully consider the risks described below together with all of the other information in this Report, including our consolidated financial statements and the related notes and the information described in the section entitled “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and in our other filings with the SEC. If any of the risks described below occur, our business, financial condition, results of operations and prospects could be materially adversely affected. In that case, the market price of our common stock would likely decline and investors could lose all or a part of their investment. Only those investors who can bear the risk of loss of their entire investment should consider an investment in our securities. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our operations.

Summary of Risk Factors

- We have a history of losses, anticipate continued operating losses in the future, and may not be able to achieve or maintain profitability. If we cannot achieve or maintain profitability, stockholders could lose all or part of their investment.
- Our recurring losses from operations have raised substantial doubt regarding our ability to continue as a going concern. We will require additional capital to support our business and objectives.
- Our quarterly results of operations are likely to vary from period to period, which could cause the market price of our common stock to fluctuate or decline.
- We may not be able to develop technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.
- We compete in highly competitive markets characterized by rapid technological changes, and existing and new companies may introduce products that compete with ours, which may adversely affect our business and operating results.
- If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our existing or future products — or generate product revenue.
- We rely on the CPI for access to fabrication and expect to enter into arrangements with third-party fabricators to produce our products at commercial scale. The loss of access to the CPI facility, or our inability to enter into agreements with third-party fabricators could have a material adverse effect on our business development.
- Because we will depend on third-party fabricators to manufacture products for us, we will be susceptible to manufacturing delays and pricing fluctuations that could prevent us from shipping customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales, income and customers.
- We rely on our management team and other key employees and will need additional personnel to grow our business. The loss of one or more key employees or our inability to attract and retain qualified personnel could harm our business.
- Any failure by us to protect our proprietary technologies or maintain the right to use certain technologies may negatively affect our ability to compete.
- We incur significant costs as a result of operating as a public company.
- If we fail to maintain effective internal controls, we may not be able to report financial results accurately or on a timely basis, or to detect fraud, which could have a material adverse effect on our business or share price.
- An active trading market for our common stock may not develop or be sustained, which may make it difficult for investors to sell shares of our common stock and may make it difficult for us to raise capital.

- We do not anticipate paying dividends on our common stock, and investors may lose the entire amount of their investment.

Risks Related to our Business and the Industry in Which We Operate

We have a history of losses, anticipate continued operating losses in the future, and may not be able to achieve or maintain profitability. If we cannot achieve or maintain profitability, stockholders could lose all or part of their investment.

Since our inception, we have generated substantial net losses as we have devoted our resources to the development of our technology, and our business model has not been proven. As of December 31, 2022, we had an accumulated deficit of \$86.6 million. For the years ended December 31, 2022 and December 31, 2021 our total comprehensive loss was \$10.6 million and \$17.0 million, respectively. We expect our operating losses to continue for the foreseeable future as we continue to invest in our infrastructure and research and development of our technologies. These efforts may be more costly than we expect, and we may not be able to generate revenue to offset our increased operating expenses. If we are unable to generate substantial revenue, we may never become profitable or be able to maintain any future profitability. If this were to occur, our stockholders could lose all or part of their investment.

Our recurring losses from operations have raised substantial doubt regarding our ability to continue as a going concern. We will require additional capital to support our business and objectives.

We have incurred recurring losses since inception and, as of December 31, 2022, had an accumulated deficit of \$86.6 million. We anticipate operating losses to continue for the foreseeable future due to, among other things, costs related to research funding, further development of our technology and products and expenses related to the commercialization of our products, and it is possible we will never achieve profitability. As a result, our independent registered public accounting firm included an explanatory paragraph in its report on our consolidated financial statements as of and for the year ended December 31, 2022. Future reports on our consolidated financial statements may include an explanatory paragraph with respect to our ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might be necessary should we be unable to continue as a going concern.

We believe that our existing cash will be sufficient to fund our operations through the end of May 2023 and that we will require additional capital to continue our operations and research and development activity thereafter. There can be no assurance, however, that such financing will be available by the end of May 2023, if at all, or on acceptable terms and conditions. The precise amount and timing of the funding needs cannot be determined accurately at this time, and will depend on a number of factors, including our ability to generate significant revenue, the market demand for our products, the quality of product development efforts including potential joint collaborations, management of working capital, and the continuation of normal payment terms and conditions for purchase of services.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our working capital requirements through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making acquisitions or capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or products, or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings or other arrangements when needed, we may be required to delay, limit, reduce or terminate commercialization, our research and product development, or grant rights to develop and market our products that we would otherwise prefer to develop and market ourselves, it may also impact our ability to continue as a going concern. The perception that we may not be able to continue as a going concern may cause others to choose not to deal with us due to concerns about our ability to meet our contractual obligations.

Our quarterly results of operations are likely to vary from period to period, which could cause the market price of our common stock to fluctuate or decline.

Our results of operations have varied from period to period, and we expect that our quarterly results of operations will continue to vary as a result of a number of factors, many of which are outside of our control and may be difficult to predict, including:

- our ability to attract existing customers, including due to our perceived or actual financial condition;
- the budgeting cycles and purchasing practices of customers;
- the timing and length of our sales cycles, including the ability of our customers to design-in successfully with our technology;
- changes in customer requirements or market needs, including market acceptance of our technology;
- the timing and impact of new product introductions by us or our competitors or any other change in the competitive landscape of the semiconductor industry, including consolidation among our customers or competitors;
- deferral of orders from customers in anticipation of new products or product enhancements announced by us or our competitors;
- our ability to execute our growth strategy and operating plans;
- our ability to successfully expand our business domestically and internationally;
- our ability to successfully compete with other companies in our market;
- changes in our pricing policies or those of our competitors;
- any disruption in, or termination of, our relationship with channel partners;
- insolvency or credit difficulties confronting our customers, affecting their ability to purchase or pay for our products, or confronting our key suppliers, which could disrupt our supply chain;
- the cost and potential outcomes of potential future litigation;
- general economic conditions; and
- the amount and timing of operating costs and capital expenditures related to the expansion of our business.

Any of the above factors, individually or in the aggregate, may result in significant fluctuations in our quarterly operating results. As a result of this variability, our historical results of operations should not be relied upon as an indication of future performance. Moreover, this variability and unpredictability could result in our failure to follow through on our operating plans or meet the expectations of investors for any period. If we fail to follow through on our operating plans or meet such expectations for these or other reasons, the market price of our common stock could fall substantially.

We may not be able to develop technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.

Rapidly changing technologies and industry standards, along with frequent new product introductions, characterize the industries of many of our customers and potential customers. Our financial performance depends, in part, on our ability to design, develop, manufacture, assemble, test, market and support new products and enhancements on a timely and cost-effective basis.

We have not commercialized any of our products. Our principal focus has been on research and development activities to improve our technology and make our product offerings more attractive to potential customers. These projects are subject to various risks and uncertainties we are not able to control, including changes in customer demand or industry standards and the introduction of new or superior technologies by others. Moreover, any failure by us in the future to develop new technologies or timely react to changes in existing technologies could materially delay our development of new products, which could result in product obsolescence, decreased revenues and a loss of our market share to our competitors. In

addition, products or technologies developed by others may render our products or technologies obsolete or non-competitive. Further, if our products are not in compliance with prevailing industry standards, such non-compliance could materially and adversely affect our financial condition, cash flows and results of operations.

We compete in highly competitive markets characterized by rapid technological changes, and existing and new companies may introduce products that compete with ours, which may adversely affect our business and operating results.

The markets in which we compete are highly competitive. We expect competition to intensify in the future as existing competitors and new market entrants introduce new products into our markets. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses, and the loss of market share, any of which could seriously harm our business, financial condition, and results of operations. Additionally, our competitors may develop technology that would make ours non-competitive or obsolete. If we do not keep pace with product and technology advances and otherwise keep our product offerings competitive, there could be a material and adverse effect on our competitive position, revenue and prospects for growth. Many of our existing competitors, have, and some of our potential competitors could have, substantial competitive advantages such as:

- greater name recognition, longer operating histories and larger customer bases;
- larger sales and marketing budgets and resources;
- broader distribution and established relationships with channel partners and customers;
- broader and deeper product lines;
- greater customer support resources;
- greater resources to make acquisitions;
- lower labor and research and development costs;
- substantially greater financial and other resources; and
- larger scale manufacturing operations.

Some of our larger competitors have substantially broader product offerings and may be able to leverage their relationships with channel partners and customers based on other products to gain business in a manner that discourages users from purchasing our products, including by selling at zero or negative margins or product bundling. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier regardless of product performance or features. As a result, even if the features of our products are superior, customers may not purchase our products. In addition, innovative start-up companies, and larger companies that are making significant investments in research and development, may invent similar or superior products and technologies that compete with our products. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their resources. If we are unable to compete successfully, or if competing successfully requires us to take costly actions in response to the actions of our competitors, our business, financial condition, and results of operations could be adversely affected.

If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our existing or future products or generate product revenue.

We do not currently have a fully staffed sales organization. We intend to commercialize our products with a direct sales force. To achieve this, we will be required to build a direct sales organization. We also will have to build our marketing, sales, managerial and other non-technical capabilities or make arrangements with third parties for distribution and to perform certain of these other services, and we may not be successful in doing so. Building an internal sales organization is time-consuming and expensive and will significantly increase our compensation expense. We may be unable to secure contracts with distributors on favorable terms or at all. We have no prior experience in the marketing, sale and distribution of our products and there are significant risks involved in building and managing a sales organization, including our ability to hire,

retain and motivate qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel, and effectively oversee a geographically dispersed sales and marketing team. If we are unable to build an effective sales organization and/or if we are unable to secure relationships with third-party distributors, we will not be able to successfully commercialize our products, our future product revenue will suffer and we would incur significant additional losses.

We rely on CPI for access to fabrication and expect to enter into arrangements with third-party fabricators to produce our products at commercial scale. The loss of access to the CPI facility, or our inability to enter into agreements with third-party fabricators could have a material adverse effect on our business development.

We do not have our own fabrication facility and rely on CPI for access to its facility for fabrication of prototypes and demonstration products. If we lost access to CPI's fabrication facility, it would materially and adversely affect our ability to manufacture prototypes and demonstrate products for potential customers. The loss of access may also significantly impede our ability to engage in product development and process improvement activities. We expect to enter into arrangements with third-party fabricators to produce products for customers for demonstration products or for commercial product sale, other than for our formulated materials. The third-party fabricators are often located in Asia, but could also be in the United States. No assurance can be given that we will be able to negotiate agreements with third-party fabricators on terms that are acceptable to us. Third-party fabricators may not have the ability to provide us with access to adequate capacity for our needs and our customers' needs. We will also have less control over delivery schedules and overall support compared to competitors who have commercial fabrication operations. If the fabricators we use are unable or unwilling to manufacture our products in our required volumes, or at specified times, we may have to identify and qualify acceptable additional or alternative fabricators. This qualification process could typically take three to six months and we may not find sufficient capacity in a timely manner or at an acceptable cost to satisfy our production requirements. Some companies that supply products to our customers are similarly dependent on a limited number of suppliers. These other companies' products may represent important components of the displays into which our products are designed. If these companies are unable to produce the volumes demanded by our customers, our customers may be forced to slow down or halt production on the equipment for which our products are designed, which could materially impact our order levels and our results of operations.

Because we will depend on third-party fabricators to manufacture products for us, we will be susceptible to manufacturing delays and pricing fluctuations that could prevent us from shipping customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales, income and customers.

We expect to rely on third-party fabricators to manufacture products containing our proprietary inks for certain of our future customers. Our reliance on these third-party fabricators reduces our control over the manufacturing process and exposes us to risks, including reduced control over quality assurance, product costs, and product supply and timing. Any manufacturing disruption by these third-party fabricators could severely impair our ability to fulfill orders. Our reliance on third-party fabricators also creates the potential for infringement or misappropriation of our intellectual property. If we are unable to manage our relationships with third-party fabricators effectively, or if our third-party fabricators experience delays or disruptions for any reason, increased manufacturing lead-times, capacity constraints or quality control problems in their fabrication operations, or if they otherwise fail to meet our future requirements for timely delivery, our ability to ship products to our customers would be severely impaired, and our business and results of operations would be seriously harmed.

We expect that our sales cycles will be long and unpredictable, and our sales efforts will require considerable time and expense. As a result, our revenue is difficult to predict and may vary substantially from period to period, which may cause our results of operations to fluctuate significantly.

Our results of operations may fluctuate, in part, because of the resource intensive nature of our sales efforts, the length and variability of our expected sales cycle and the short-term difficulty in adjusting our operating expenses. We provide reference designs and prototypes intended to demonstrate our ability to satisfy customer requirements and we expect that we will be required to continue to do so before receiving sales orders, which will result in a relatively long sales cycle. Because we expect that the length of time required to close a sale will vary substantially from customer to customer and each customer has its own

requirements, it is difficult to predict exactly when, or even if, we will make a sale with a potential customer after significant work has been put in to create a model or prototype. As a result, we expect that individual sales will, in some cases, occur in quarters subsequent to or in advance of those we anticipated, or will not occur at all, which makes it difficult for us to forecast our revenue accurately in any quarter. Because a substantial portion of our expenses are relatively fixed in the short term, our results of operations will suffer if our revenue falls below expectations in a particular quarter, which could cause the market price of our common stock to decline. Additionally, to the extent our competitors develop products that our prospective customers view as equivalent or superior to ours, the average duration of our sales cycles may increase, and our sales efforts may be less successful.

Our current operations are concentrated, and in the event of an earthquake, terrorist attack or other disaster affecting these locations or those of our major suppliers, our operations may be interrupted and our business may be harmed.

Our principal executive offices and primary operating facilities are situated in England and Asia, and most of our major suppliers, which are wafer foundries and assembly houses, are located in areas that have been subject to severe earthquakes and are susceptible to other disasters such as tropical storms, typhoons or tsunamis. In the event of a disaster, such as an earthquake and tsunami in Japan, we or one or more of our major suppliers may be temporarily unable to continue operations and may suffer significant property damage. Any interruption in our ability, or that of our major suppliers, to continue operations could delay the development and shipment of our products and have a substantial negative impact on our financial results. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts or coverage of insurance will be sufficient to satisfy any damages and losses.

We rely on our management team and other key employees and will need additional personnel to grow our business. The loss of one or more key employees or our inability to attract and retain qualified personnel could harm our business.

Our future success is substantially dependent on our ability to attract, retain and motivate the members of our management team and other key employees throughout our organization. The loss of one or more members of our management team or other key employees could materially impact our sales or our research and development programs and materially harm our business, financial condition, results of operations and prospects. We do not maintain key person life insurance policies on any of our management team members or key employees. Competition for highly skilled personnel is intense. We may not be successful in attracting or retaining qualified personnel to fulfill our current or future needs. Our competitors may be successful in recruiting and hiring members of our management team or other key employees, and it may be difficult for us to find suitable replacements on a timely basis, on competitive terms, or at all.

If we fail to effectively manage our growth, our business, financial condition and results of operations would be harmed.

We are a development stage company and are subject to the strains of ongoing development and growth, which has placed significant demands on our management and our operational and financial infrastructure. To manage any growth effectively, we must continue to improve our operational, financial and management systems and controls by, among other things:

- effectively attracting, training and integrating new employees, particularly members of our sales, applications and research and development teams;
- further improving our key business applications, processes and IT infrastructure to support our business needs;
- enhancing our information and communication systems to ensure that our employees and offices around the world are well coordinated and can effectively communicate with each other and our channel partners and customers; and
- appropriately documenting and testing our IT systems and business processes.

These and other improvements in our systems and controls will require significant capital expenditures and the allocation of valuable management and employee resources. If we fail to implement these improvements effectively, our ability to manage growth and ensure ongoing operation of key business systems would be impaired, and our business, financial condition and results of operations would be harmed.

The COVID-19 global pandemic and resulting adverse economic conditions have already adversely impacted our business and could have a more material adverse impact on our business, financial condition, and results of operations.

The COVID-19 global pandemic has had and could continue to have an adverse impact on the business operations of our company and our employees, joint development partners, prospective customers, suppliers and the overall economy. Our business and operations have been disrupted and higher costs have been incurred as a result of, among other things, measures to address the health and safety of our employees, government work from home directives, quarantines, worker absenteeism as a result of illness, social distancing and travel restrictions that prevented face to face meetings with joint development partners, prospects and suppliers. We adopted remote working measures in an effort to mitigate the spread and impact of COVID-19.

The COVID-19 global pandemic also resulted in severe disruptions and volatility in the global economy and financial markets, which may result in an extended economic slowdown or a global recession that could adversely impact our business. At various times during the outbreak, the countries in which we operate and do business took dramatic action including, without limitation, ordering all nonessential workers to stay home, mandating the closure of schools and nonessential business premises and imposing isolation measures on large portions of the population. Additionally, a recurrence in volatility due to a resurgence in the COVID-19 global pandemic could impact our future access to capital and credit markets.

We are continuing to monitor the impact of COVID-19, including the emerging variants of the disease, and related risks, including risks related to efforts to mitigate the disease's spread. The fluidity of the situation, however, precludes any prediction as to its ultimate impact on us. The emergence of new variants of the coronavirus or of other illnesses may adversely impact our future operations, business development activities and our access to capital markets.

Any of the above factors, or other cascading effects of the COVID-19 pandemic that are not currently foreseeable, could materially increase our costs, severely negatively impact business development and commercialization, net income, and other results of operations, and impact our liquidity position. The duration of any such impacts cannot be predicted, and such impacts may also have the effect of heightening many of the other material risks we face.

The ongoing COVID-19 pandemic and a supply shortage experienced by the semiconductor industry have disrupted and will likely continue to disrupt normal business activity and may have an adverse effect on our results of operations.

The global spread of COVID-19 and the efforts to control it have disrupted, and reduced the efficiency of, normal business activities in much of the world. The pandemic has resulted in authorities around the world implementing numerous unprecedented measures such as travel restrictions, quarantines, shelter in place orders, factory and office shutdowns and vaccine mandates. COVID-19 measures have impacted, and will likely continue to impact, our operations and those of our customers, contract manufacturers, suppliers and logistics providers. At the same time, and to some extent relatedly, the global silicon semiconductor industry is experiencing a shortage in supply and difficulties in ability to meet customer demand. In particular, the recent government-mandated COVID-19 containment measures in China have impacted supply shipments and created ongoing risk and uncertainty. These issues have led to an increase in lead-times of the production of semiconductor chips and components.

In 2022 we experienced, and expect to continue to experience, disruption to parts of our semiconductor supply chain, including procuring necessary components and inputs, such as wafers and substrates, in a timely fashion, with suppliers increasing lead times or placing products on allocation and raising prices. We have also incurred higher costs to secure available inventory, or have extended our purchase commitments or placed non-cancellable orders with suppliers, which introduces inventory risk if our forecasts and assumptions are

inaccurate. In addition, disruptions to commercial transportation infrastructure have increased delivery times for materials and components to our facilities and, in some cases, our ability to timely ship our products to customers.

We believe the global supply chain challenges and their adverse impact on our business will persist and the degree to which the pandemic ultimately impacts our business and results of operations will depend on future developments beyond our control.

We are subject to a number of risks associated with international sales and operations.

We have small teams that are engaged in marketing, selling and supporting our products internationally. As a result, we must hire and train experienced personnel to staff and manage our foreign operations. To the extent that we experience difficulties in recruiting, training, managing and retaining international employees, particularly managers and other members of our international sales team, we may experience difficulties in sales productivity in, or market penetration of, foreign markets. We also enter into strategic distributor and reseller relationships with companies in certain international markets where we do not have a local presence. If we are not able to maintain successful strategic distributor and reseller relationships with our international channel partners or recruit additional channel partners, our future success in these international markets could be limited.

We are subject to risks associated with international operations.

We have operations in the United Kingdom and Asia and expect that most of our sales revenue will result from sales to customers in Asia. A number of risks inherent in international operations could have a material adverse effect on our results of operations, including:

- fluctuations in U.S. dollar/U.K. pound value arising from transactions denominated in foreign currencies and the translation of certain foreign currency subsidiaries balances;
- difficulties in staffing and managing multi-national operations;
- adverse changes in economic and political conditions resulting from political instability, acts of terrorism, armed conflict, social unrest, and other circumstances impacting countries in which we or our customers operate, including as a result of any escalation of the current tensions between Taiwan and China;
- limitations on our ability to enforce legal rights and remedies;
- restrictions on the repatriation of funds;
- changes in trade policies, laws, regulations, political leadership and environment, and/or security risks;
- tariff regulations;
- difficulties in obtaining export and import licenses and compliance with export/import controls and regulations;
- the risk of government financed competition;
- compliance with a variety of international laws as well as U.K. regulations, rules and practices affecting the activities of companies abroad; and
- difficulties in managing and staffing international operations and the required infrastructure costs, including legal, tax, accounting, and information technology.

We face political and other risks conducting business in Taiwan, particularly due to its tense relationships with China.

Certain of our partners are located in Taiwan, and we expect many of our customers will be located in Taiwan. Therefore, our business, financial condition and results of operations may be affected by changes in governmental and economic policies in Taiwan, social instability, and diplomatic and social developments in or affecting Taiwan due to its international political status, including current tensions with China. Any

deterioration in the relations between Taiwan and China, and other factors affecting military, political or economic conditions in Taiwan, could disrupt our business operations and materially and adversely affect our results of operations.

The ongoing conflict between Russia and Ukraine has negatively impacted and may continue to negatively impact the global economy and economic markets, which could have a materially adverse effect on our business, financial condition, and results of operations.

Russia's military invasion of Ukraine had an immediate impact on the global economy and economic markets. Financial and economic sanctions imposed on certain industry sectors and parties in Russia by the U.S., U.K. and European Union, as well as potential retaliatory actions by Russia, could also have a negative impact on the global economy. There can be no certainty regarding the impacts stemming from the conflict, including the imposition of additional sanctions, embargoes, asset freezes or other economic or military measures resulting from the invasion. The impact of these developments, and additional events that may occur as a result could adversely affect our business, supply chain, suppliers and customers and potential customers. It is not possible to predict the broader consequences of this conflict, which could include further sanctions, embargoes, regional instability, geopolitical shifts and adverse effects on macroeconomic conditions, the availability and cost of materials, supplies, labor, currency exchange rates and financial markets, all of which could negatively impact our business, financial condition and results of operations.

Failure to comply with anti-bribery, anti-corruption and anti-money laundering laws as well as export control laws, import and customs laws, trade and economic sanctions laws and other laws governing our operations could subject us to penalties and other adverse consequences.

We are subject to anti-bribery, anti-corruption and anti-money laundering laws and regulations including the U.K. Bribery Act 2010 ("Bribery Act"), the U.S. Foreign Corrupt Practices Act ("FCPA") and other anti-corruption, anti-bribery, and anti-money laundering laws in the jurisdictions in which we do business from time to time, both domestic and abroad. These laws generally prohibit us and our employees from improperly influencing government officials or commercial parties in order to obtain or retain business, direct business to any person or gain any improper advantage. The Bribery Act, FCPA and similar applicable anti-bribery and anti-corruption laws also prohibit our third-party business partners, representatives and agents from engaging in corruption and bribery. We and our third-party business partners, representatives and agents may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities. We may be held liable for the corrupt or other illegal activities of these third-party business partners and intermediaries, our employees, representatives, contractors, channel partners and agents, even if we do not explicitly authorize such activities. These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions.

We are also subject to other laws and regulations governing international operations, including regulations administered by the governments of the U.K and the U.S., and authorities in the European Union, including applicable export control regulations, economic sanctions and embargoes on certain countries and persons, anti-money laundering laws, import and customs requirements and currency exchange regulations, collectively referred to as the Trade Control laws.

Any violation of the Bribery Act, FCPA or other applicable anti-bribery, anti-corruption laws and anti-money laundering laws including Trade Control laws could result in whistleblower complaints, adverse media coverage, investigations, imposition of significant legal fees, loss of export privileges, severe criminal or civil sanctions or suspension or debarment from government contracts, substantial diversion of management's attention, drop in stock price or overall adverse consequences to our business, all of which may have an adverse effect on our reputation, business, financial condition, and results of operations.

The potential impact of "Brexit" could have a material adverse effect on our business.

The U.K.'s membership of the European Union ceased on January 1, 2021. There are significant uncertainties in relation to what the impact will be on the fiscal, monetary and regulatory landscape in the U.K., including among other things, the U.K.'s tax system, the conduct of cross-border business and export

and import tariffs. There is also uncertainty in relation to how, when and to what extent these developments will impact on the economy in the U.K., the future growth of its various industries, on levels of investor activity and confidence, on market performance and on exchange rates.

While we did not experience any significant adverse impacts on our business in 2022 as a result of the U.K.'s exit from the European Union, it is not possible to predict fully the future effects of this transition. Any of these risks, taken singularly or in the aggregate could have an adverse effect on our business, financial condition, and results of operations.

Our business may be affected by litigation and government investigations.

We may from time to time receive inquiries and subpoenas and other types of information requests from government authorities and others and we may become subject to claims and other actions related to our business activities. While the ultimate outcome of investigations, inquiries, information requests and legal proceedings is difficult to predict, defense of litigation claims can be expensive, time-consuming, and distracting, and adverse resolutions or settlements of those matters may result in, among other things, modification of our business practices, costs and significant payments, any of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Security breaches, computer malware, computer hacking attacks and other security incidents could harm our business, reputation, brand and operating results.

Security incidents have become more prevalent across industries and may occur on our systems. Security incidents may be caused by, or result in but are not limited to, security breaches, computer malware or malicious software, computer hacking, unauthorized access to confidential information, denial of service attacks, security system control failures in our own systems or from vendors we use, email phishing, software vulnerabilities, social engineering, sabotage and drive-by downloads. Such security incidents, whether intentional or otherwise, may result from actions of hackers, criminals, nation states, vendors, employees or customers.

We rely on our internal technology systems for development, marketing, operational, support and sales activities. A disruption or failure of these systems or in those of our external service providers, in the event of a major storm, earthquake, fire, telecommunications failure, cyber-attack, terrorist attack or other catastrophic event could cause system interruptions, reputational harm, delays in our product development and loss of critical data and could materially and adversely affect our ability to operate our business.

We may experience disruptions, data loss, outages and other performance problems on our systems due to service attacks, unauthorized access or other security related incidents. Any security breach or loss of system control caused by hacking, which involves efforts to gain unauthorized access to information or systems, or to cause intentional malfunctions or loss, modification or corruption of data, software, hardware or other computer equipment and the inadvertent transmission of computer malware could harm our business.

In addition, our software stores and transmits customers' confidential business information in our facilities and on our equipment, networks, corporate systems and in the cloud. Security incidents could expose us to litigation, remediation costs, increased costs for security measures, loss of revenue, damage to our reputation and potential liability. Our customer data and corporate systems and security measures may be compromised due to the actions of outside parties, employee error, malfeasance, capacity constraints, a combination of these or otherwise and, as a result, an unauthorized party may obtain access to our data or our customers' data. Outside parties may attempt to fraudulently induce our employees to disclose sensitive information in order to gain access to our customers' data or our information. We must continuously examine and modify our security controls and business policies to address new threats, the use of new devices and technologies, and these efforts may be costly or distracting.

Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently or may be designed to remain dormant until a predetermined event and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement sufficient control measures to defend against these techniques. Though it is difficult to determine what harm

may directly result from any specific incident or breach, any failure to maintain confidentiality, availability, integrity, performance and reliability of our systems and infrastructure may harm our reputation and our ability to retain existing customers and attract new customers. If an actual or perceived security incident occurs, the market perception of the effectiveness of our security controls could be harmed, our brand and reputation could be damaged, we could lose customers, and we could suffer financial exposure due to such events or in connection with remediation efforts, investigation costs, regulatory fines and changed security control, system architecture and system protection measures.

Risks Related to our Intellectual Property

Any failure by us to protect our proprietary technologies or maintain the right to use certain technologies may negatively affect our ability to compete.

To compete effectively, we must protect our intellectual property. We rely on a combination of patents, trademarks, copyrights, trade secret laws, confidentiality procedures and licensing arrangements to protect our intellectual property rights. We hold numerous patents and have a number of pending patent applications. However, our portfolio of patents evolves as new patents are issued and older patents expire, and the expiration of patents could have a negative effect on our ability to prevent competitors from duplicating certain or all of our products.

We might not succeed in obtaining patents from any of our pending applications. Even if we are awarded patents, they may not provide any meaningful protection or commercial advantage to us, as they may not be of sufficient scope or strength or may not be issued in all countries where our products can be sold. In addition, our competitors may be able to design around our patents.

There can be no assurance that an issued patent will remain valid and enforceable in a court of law through the entire patent term. Should the validity of a patent be challenged, the legal process associated with defending the patent can be costly and time consuming. Issued patents can be subject to oppositions, interferences and other third-party challenges that can result in the revocation of the patent or limit patent claims such that patent coverage lacks sufficient breadth to protect subject matter that is commercially relevant. Competitors may be able to circumvent our patents. In cases where market ramp of our products may encounter delays it is possible that some patents or licensed patents covering the product has expired or will be in force for only a short period of time following such market ramp. We cannot predict with any certainty if any third-party patent rights, or other proprietary rights, will be deemed infringed by the use of our technology. Nor can we predict with certainty which, if any, of these rights will or may be asserted against us by third parties.

To protect our product technology, documentation and other proprietary information, we enter into confidentiality agreements with our employees, customers, consultants and strategic partners. We require our employees to acknowledge their obligation to maintain confidentiality with respect to our products. Despite these efforts, we cannot guarantee that these parties will maintain the confidentiality of our proprietary information in the course of future employment or working with other business partners. We develop, manufacture and sell our products in Asia and other countries that may not protect our intellectual property rights to the same extent as the laws of the U.K. and the U.S. This makes piracy of our technology and products more likely. Steps we take to protect our proprietary information may not be adequate to prevent theft of our technology. We may not be able to prevent our competitors from independently developing technologies and products that are similar to or better than ours.

Vigorous protection and pursuit of intellectual property rights or positions characterize the semiconductor industry. This often results in expensive and lengthy litigation. We, and our customers or suppliers, may be accused of infringing patents or other intellectual property rights owned by third parties in the future. An adverse result in any litigation against us or a customer or supplier could force us to pay substantial damages, stop manufacturing, using, and selling the infringing products, spend significant resources to develop non-infringing technology, discontinue using certain processes or obtain licenses to use the infringing technology. In addition, we may not be able to develop non-infringing technology or find appropriate licenses on reasonable terms or at all.

Patent disputes in the semiconductor industry between industry participants are often settled through cross-licensing arrangements. Our portfolio of patents may not have the breadth to enable us to settle an alleged patent infringement claim through a cross-licensing arrangement, especially for patent disputes brought by non-practicing entities (patent holders who do not manufacture products but only seek to monetize patent rights) that cannot be settled through cross-licensing and cannot be avoided through cross-licensing with industry practitioners. We may therefore be more exposed to third-party claims than some of our larger competitors and customers.

Customers may make claims against us in connection with infringement claims made against them that are alleged to relate to our products or components included in our products, even where we obtain the components from a supplier. In such cases, we may incur monetary losses due to the cost of defense, settlement or damage award and non-monetary losses as a result of diverting valuable internal resources to litigation support. To the extent that claims against us, or our customers relate to third-party intellectual property integrated into our products, there is no assurance that we will be fully or even partially indemnified by our suppliers against any losses.

Furthermore, we may initiate claims or litigation against third parties for infringing our proprietary rights or to establish the validity of our proprietary rights. This could consume significant resources and divert the efforts of our technical and management personnel, regardless of the litigation's outcome.

Risks Related to our Financial Control Environment

We incur significant costs as a result of operating as a public company.

As a public company, we incur significant legal, accounting and other expenses. For example, we are subject to the information and reporting requirements of the Securities Act of 1933, as amended (the "Securities Act"), the Exchange Act and other federal securities laws, rules and regulations related thereto, including compliance with the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), and the Dodd-Frank Wall Street Reform and Consumer Protection Act. In addition, the listing requirements of any national securities exchange or other exchange and other applicable securities rules and regulations impose various requirements on public companies. Our management and other personnel are required to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations significantly increase our legal and financial compliance costs and make some activities more time-consuming and costly. Among other things, we are required to:

- maintain and evaluate a system of internal controls over financial reporting in compliance with the requirements of Section 404(a) of the Sarbanes-Oxley Act and the related rules and regulations of the SEC and the Public Company Accounting Oversight Board;
- maintain policies relating to disclosure controls and procedures;
- prepare and distribute periodic reports in compliance with our obligations under federal securities laws;
- institute a more comprehensive compliance function, including with respect to corporate governance; and
- involve, to a greater degree, our outside legal counsel, and accountants in the above activities.

The costs of preparing and filing annual and quarterly reports, proxy statements and other information with the SEC and furnishing audited reports to stockholders is expensive and compliance with these rules and regulations involves a material increase in regulatory, legal and accounting expenses and the attention of our board of directors and management. In addition, being a public company makes it more expensive for us to obtain director and officer liability insurance. In the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain this coverage. These factors could also make it more difficult for us to attract and retain qualified executives and members of our board of directors. Furthermore, if we are unable to satisfy our obligations as a public company, we could be subject to fines, sanctions and other regulatory action and potentially civil litigation.

If we fail to maintain effective internal controls, we may not be able to report financial results accurately or on a timely basis, or to detect fraud, which could have a material adverse effect on our business or share price.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in those controls. A material weakness is defined as a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected and corrected on a timely basis.

In August 2022, we determined that we made an error in the presentation and accounting of our consolidated statement of cash flows in our annual and interim consolidated financial statements during 2021 and 2022. The effect of this error was to overstate net cash used in operating activities and effect of exchange rate changes on cash for each reported period. For the year ended December 31, 2021, the effect of this error was to overstate net cash used in operating activities and effect of exchange rate changes on cash by \$0.8 million, respectively. The error and the required restatement had no effect on our cash flow from investing activities, financing activities, net change in cash or cash and cash equivalents as of the reporting date and had no impact on our consolidated balance sheet, our consolidated statements of operations and comprehensive loss and our condensed consolidated statements of stockholders' equity. As a result, we determined that there was a material error in the cash flow statement that required a restatement of the financial statements for the fiscal year ended December 31, 2021 and to our Form 10-Qs for the periods ended September 30, 2021 and March 31, 2022 (including comparative information for March 31, 2021) to restate the previously issued financial statements, with comparatives for June 30, 2021 restated in our Form 10-Q for the period ended June 30, 2022 to restate the previously issued financial statements. This was due to inadequate design and implementation of controls to evaluate and monitor the presentation and compliance with accounting principles generally accepted in the United States of America ("US GAAP") related to the cash flow statement.

Management actively and immediately engaged in implementing and assessing remediation efforts to address the material weakness. The monitoring and review controls over the preparation of financial statements have been enhanced, including designing, documenting and implementing additional reconciliations, analysis and review procedures to evaluate and monitor presentation of the cash flow statement. Our management evaluated the effectiveness of our disclosure controls and procedures as defined in Rule 13a-15 and 15d-15(e) under the Exchange Act, as of December 31, 2022. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of December 31, 2022. See "Item 9A Controls and Procedures."

Effective internal controls are necessary for us to provide reasonable assurance with respect to our financial reports and to effectively prevent financial fraud. Pursuant to the Sarbanes-Oxley Act, we are required to periodically evaluate the effectiveness of the design and operation of our internal controls. Internal controls over financial reporting may not prevent or detect misstatements because of inherent limitations, including the possibility of human error or collusion, the circumvention or overriding of controls, or fraud. If we fail to maintain an effective system of internal controls, our business and operating results could be harmed, and we could fail to meet our reporting obligations, which could have a material adverse effect on our business and our share price. Additionally, for as long as we are a "smaller reporting company" under the U.S. securities laws, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act. An independent assessment of the effectiveness of internal control over financial reporting could detect problems that management's assessment might not. Undetected material weaknesses in our internal control over financial reporting could lead to further financial statement restatements and require us to incur the expense of remediation.

If we fail to maintain proper disclosure controls and procedures or have additional material weaknesses in our internal control over financial reporting, we may be unable to accurately report our financial results or report them within the timeframes required by law or any stock exchange regulations, and we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline. Failure to maintain effective internal control over financial reporting

also could potentially subject us to sanctions or investigations by the SEC or other regulatory authorities or stockholder lawsuits, which could require additional financial and management resources.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our results of operations could fall below the expectations of investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the amounts reported in our financial statements. Significant assumptions and estimates used in preparing our financial statements include those related to assets, liabilities, revenue, expenses, and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of investors, resulting in a decline in the market price of our common stock.

Changes in accounting rules and regulations, or interpretations thereof, could result in unfavorable accounting charges or require us to change our compensation policies.

Accounting methods and policies for companies such as ours, including policies governing revenue recognition, leases, research and development and related expenses, and accounting for stock-based compensation, are subject to review, interpretation and guidance from our auditors and relevant accounting authorities, including the SEC. Changes to accounting methods or policies, or interpretations thereof, may require us to reclassify, restate or otherwise change or revise our historical financial statements, including those contained in this Report.

Risks Related to Our Common Stock

We are an “emerging growth company” and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an “emerging growth company” as defined in the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including (1) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, (2) reduced disclosure obligations regarding executive compensation in this Report and our periodic reports and proxy statements, and (3) exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. In addition, as a smaller reporting company, we are only required to provide two years of audited financial statements and two years of selected financial data in this Report. We could be an emerging growth company until the fifth anniversary of the first sale of our common stock pursuant to a registration statement occurs, although circumstances could cause us to lose that status earlier, including if the market value of our common stock held by non-affiliates exceeds \$700.0 million as of June 30 of any year or if we have total annual gross revenue of \$1.235 billion or more during any fiscal year, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than \$1.0 billion in nonconvertible debt during any three-year period, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company” which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in this Report and our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may 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 share price may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use the extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We are a smaller reporting company, and we cannot be certain if the reduced disclosure requirements applicable to smaller reporting companies will make our common stock less attractive to investors.

We are currently a “smaller reporting company,” meaning that we are not an investment company, an asset-backed issuer, or a majority-owned subsidiary of a parent company that is not a smaller reporting company, and we have a public float of less than \$250 million and annual revenues of less than \$100 million during our most recently completed fiscal year. In the event that we are still considered a smaller reporting company at such time as we cease being an “emerging growth company,” we will be required to provide additional disclosure in our SEC filings. However, similar to emerging growth companies, smaller reporting companies are able to provide simplified executive compensation disclosures in their filings; are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that independent registered public accounting firms provide an attestation report on the effectiveness of internal control over financial reporting; and have certain other decreased disclosure obligations in their SEC filings, including, among other things, only being required to provide two years of audited financial statements in annual reports and in a registration statement under the Exchange Act on Form 10. Decreased disclosures in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our results of our operations and financial prospects.

An active trading market for our common stock may not develop or be sustained, which may make it difficult for investors to sell shares of our common stock and may make it difficult for us to raise capital.

Although our common stock is quoted on the OTCQB marketplace, trading in our common stock has been sporadic and an active market for our common stock has not yet developed. Because of the lack of an active trading market, shares of our common stock trade infrequently and in low volumes, meaning that the number of persons interested in purchasing our common stock at or near bid prices at any given time may be relatively small or non-existent and the trading price of our common stock may be extremely volatile. Investors may find it difficult to obtain accurate quotations as to the market value of our common stock or to sell their shares at or near bid prices or at all. In addition, if we fail to meet the criteria set forth in SEC regulations, various requirements would be imposed by law on broker-dealers who sell our securities to persons other than established customers and accredited investors. Consequently, such regulations may deter broker-dealers from recommending or selling our common stock, which may further affect the liquidity of our common stock. No assurance can be given that an active trading market for our common stock will develop or be sustained. The lack of an active market for our common stock may make it difficult for investors to sell shares of our common stock and may make it difficult for us to raise capital.

We may never be able to satisfy the listing requirements for our common stock to be listed on a national securities exchange, which may cause the trading of our common stock to suffer, cause the trading market for our common stock to be less liquid and subject our common stock price to increased volatility.

We may not ever be able to satisfy the listing requirements for our common stock to be listed on a national securities exchange, which is often a more widely traded and liquid market. Some, but not all, of the factors which may delay or prevent the listing of our common stock on a more widely-traded and liquid market include the following: our stockholders’ equity may be insufficient; the market value of our outstanding securities may be too low; our net income from operations may be too low; our common stock may not be sufficiently widely held; we may not be able to secure market makers for our common stock; and we may fail to meet the rules and requirements mandated by the several exchanges and markets to have our common stock listed. Should we fail to satisfy the initial listing standards of the national exchanges, or our common stock is otherwise rejected for listing, the trading price of our common stock could suffer, the trading market for our common stock may be less liquid and our common stock price may be subject to increased volatility.

The designation of our common stock as a “penny stock” would limit the liquidity of our common stock.

Our common stock may be deemed a “penny stock” (as that term is defined under Rule 3a51-1 of the Exchange Act) in any market that may develop in the future. Generally, “penny stock” is common stock that is not listed on a securities exchange and trades for less than \$5.00 a share. Prices often are not available to buyers and sellers and the market may be very limited. Penny stocks in start-up companies are among the riskiest equity investments. Broker-dealers who sell penny stocks must provide purchasers of these stocks with a standardized risk-disclosure document prepared by the SEC. The document provides information about penny stocks and the nature and level of risks involved in investing in the penny stock market. A broker must also provide purchasers with bid and offer quotations and information regarding broker and salesperson compensation and make a written determination that the penny stock is a suitable investment for the purchaser and obtain the purchaser’s written agreement to the purchase. Many brokers and investors choose not to participate in penny stock transactions, which may result in further liquidity constraints and declines in the trading price of our common stock. Because of the penny stock rules, there may be less trading activity in penny stocks in any market that develops for our common stock in the future and stockholders are likely to have difficulty selling their shares of our common stock.

We do not anticipate paying dividends on our common stock, and investors may lose the entire amount of their investment.

Cash dividends have never been declared or paid on our common stock, and we do not anticipate such a declaration or payment for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions, contractual restrictions, including any loan or debt financing agreements, and on such other factors as our board of directors deems relevant. In addition, we may enter into agreements in the future that could contain restrictions on payments of cash dividends. We expect to use future earnings, if any, to fund business growth. Therefore, stockholders will not receive any funds absent a sale of their shares of our common stock. If we do not pay dividends, our common stock may be less valuable because a return on your investment will only occur if our stock price appreciates. We cannot assure stockholders of a positive return on their investment when they sell their shares of our common stock, nor can we assure that stockholders will not lose the entire amount of their investment.

FINRA sales practice requirements may limit a stockholder’s ability to buy and sell our stock.

The Financial Industry Regulatory Authority (“FINRA”) has adopted rules requiring that, in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative or low-priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer’s financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA has indicated its belief that there is a high probability that speculative or low-priced securities will not be suitable for at least some customers. If these FINRA requirements are applicable to us or our securities, they may make it more difficult for broker-dealers to recommend that at least some of their customers buy our common stock, which may limit the ability of our stockholders to buy and sell our common stock and could have an adverse effect on the market for and price of our common stock.

Substantial future sales of shares of our common stock could cause the market price of our common stock to decline.

A substantial portion of outstanding shares of our common stock has been registered for resale by the holders thereof. The resale, or expected or potential resale, of a substantial number of shares of our common stock in the public market could adversely affect the market price for our common stock and make it more difficult for you to sell shares of our common stock at times and prices that you feel are appropriate. Furthermore, we expect that selling stockholders holding shares that have been registered by us for resale will continue to offer such shares of our common stock for a significant period of time, the precise duration of which cannot be predicted. Accordingly, the adverse market and price pressures resulting from these

sales may continue for an extended period of time and continued negative pressure on the market price of our common stock could have a material adverse effect on our ability to raise additional equity capital.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. In addition, because we did not become a reporting company by conducting an underwritten initial public offering of our common stock, and because we are not currently listed on a national securities exchange, security analysts of brokerage firms may not provide coverage of our company. We cannot assure you that brokerage firms will provide analyst coverage of our company in the future, or continue such coverage if started. In addition, investment banks may be less likely to agree to underwrite secondary offerings on our behalf than they might if we became a public reporting company by means of an underwritten initial public offering, because they may be less familiar with our company as a result of more limited coverage by analysts and the media, which could harm our ability to raise additional funding in the future. The failure to receive research coverage or support in the market for shares of our common stock will have an adverse effect on our ability to develop a liquid market for our common stock, which will negatively impact the trading price of our common stock.

In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us issue an adverse or misleading opinion regarding us, or if our operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Our principal stockholders and management have substantial control over us and could delay or prevent a change in corporate control.

Our executive officers and directors, together with holders of 5% or more of our outstanding common stock and their respective affiliates, beneficially own 65.3% of our common stock. As a result, these stockholders, acting together have the ability to significantly impact the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation, or sale of all or substantially all of our assets. In addition, these stockholders, acting together, have the ability to significantly impact the management and affairs of our company. The interests of these stockholders may not be the same as or may even conflict with your interests. The concentration of ownership might decrease the market price of our common stock by:

- delaying, deferring, or preventing a change in control of the Company, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock;
- impeding a merger, consolidation, takeover, or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company.

The significant concentration of stock ownership may also adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Provisions in our certificate of incorporation and bylaws and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our certificate of incorporation and bylaws contain provisions that could depress the trading price of our common stock by acting to discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions:

- establish a classified board of directors so that not all members of our board are elected at one time;

- provide that directors may only be removed “for cause”;
- authorize the issuance of “blank check” preferred stock that our board of directors could issue from time to time to increase the number of outstanding shares and discourage a takeover attempt;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which has the effect of requiring all stockholder actions to be taken at a meeting of stockholders;
- provide that the board of directors is expressly authorized to make, alter, or repeal our bylaws;
- establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon by stockholders at stockholder meetings; and
- require supermajority approvals to remove the protective provisions in our certificate of incorporation and bylaws listed above or to amend our bylaws.

Such provisions could impede any merger, consolidation, takeover or other business combination involving the Company or discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company.

Our amended and restated certificate of incorporation designates the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit the ability of our stockholders to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our amended and restated certificate of incorporation requires that, unless we consent in writing to the selection of an alternative forum:

- any derivative action or proceeding brought on our behalf;
- any action asserting a claim of breach of any fiduciary duty owed by any current or former director, officer, other employee, or stockholder of ours to our company or our stockholders;
- any action asserting a claim arising pursuant to any provision of the Delaware General Corporate Law (the “DGCL”), our certificate of incorporation or bylaws or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; or
- any action asserting a claim governed by the internal affairs doctrine;

the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the exclusive forum or if the Court of Chancery of the State of Delaware does not have subject matter jurisdiction thereof, the federal district court of the State of Delaware.

Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation provides that the federal district courts of the United States of America are the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

The exclusive forum provisions described above do not apply to claims arising under the Exchange Act.

While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring such a claim arising under the Securities Act against us, our directors, officers, or other employees in a venue other than in the federal district courts of the United States of America. In such an instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our certificate of incorporation. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, this provision may limit or discourage a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage

such lawsuits against us and our directors, officers and other employees. Alternatively, if a court were to find the choice of forum provision contained in the amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

We note that there is uncertainty as to whether a court would enforce the provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Although we believe this provision will benefit us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers.

Because we became a reporting company under the Exchange Act by means other than a traditional underwritten initial public offering, we may not be able to attract the attention of research analysts at major brokerage firms.

Because we did not become a reporting company by conducting an underwritten initial public offering of our common stock, and because we will not be listed on a national securities exchange, security analysts of brokerage firms may not provide coverage of our company. In addition, investment banks may be less likely to agree to underwrite secondary offerings on our behalf than they might if we became a public reporting company by means of an underwritten initial public offering, because they may be less familiar with our company as a result of more limited coverage by analysts and the media, and because we became public at an early stage in our development. The failure to receive research coverage or support in the market for shares of our common stock will have an adverse effect on our ability to develop a liquid market for our common stock.

Item 1B. Unresolved Staff Comments

Not Applicable.

Item 2. Properties

Our headquarters are located in Manchester, England, where we lease approximately 10,000 square feet of commercial space for research and development, engineering, testing and corporate offices pursuant to a lease that expires in 2025. We also have a leased office in Hsinchu City Taiwan where we lease approximately 1,000 square feet of office space pursuant to a lease which expires in 2025. We use the CPI facility in Sedgefield, England for virtually all of our fabrication activities. In addition, we lease two offices at CPI pursuant to leases which expire in 2023 and two offices at NetPark, Sedgefield pursuant to leases which expire in 2024. We also maintain access to additional office space on a temporary or as-needed basis. We believe that our facilities are suitable to meet our current needs and that suitable space will be available on acceptable terms as may be required to support the expected growth in our business.

Item 3. Legal Proceedings

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

Item 5. Market For Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases Of Equity Securities

Market Information

Our common stock is traded on the OTC Market Group's OTCQB[®] Market ("OTCQB") under the ticker symbol "SMTK".

Holdings of Record

As of March 24, 2023, there were 27,034,996 shares of our common stock outstanding which were held by 102 stockholders of record as reported by our transfer agent. This number does not include beneficial owners whose shares are held in street name. The actual number of holders of our common stock is greater than this number of record holders and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers or held by other nominees.

Dividend Policy

Cash dividends have never been declared or paid on our common stock, and we do not anticipate such a declaration or payment for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions, contractual restrictions, including any loan or debt financing agreements, and on such other factors as our board of directors deems relevant. In addition, we may enter into agreements in the future that could contain restrictions on payments of cash dividends. We expect to use future earnings, if any, to fund business growth.

Recent Sales of Unregistered Securities

On November 29, 2022, the Company issued 35,714 shares of common stock at a value of \$0.70 per share to a consultant. Such issuance was exempt from registration under 4(a)(2) of the Securities Act and Regulation D promulgated thereunder.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Our Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is provided in addition to the accompanying consolidated financial statements and notes to assist readers in understanding our results of operations, financial condition, and cash flows. The following discussion and analysis of our financial condition and results of operations should be read together with our consolidated financial statements and the related notes and other financial information included in this Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties as described under the heading "Cautionary Note on Forward-Looking Statements" above. You should review the disclosure under the heading "Item 1A. Risk Factors" in this Report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statement.

Overview

We are seeking to reshape the world of electronics with our proprietary organic semiconductor platform that we believe has the potential to affect the form and function of the next generation of low-cost displays and sensors. Our patented TRUFLEX[®] inks are solution deposited at a low temperature, on low-cost substrates to make OTFT circuits. Our organic semiconductor platform can be used in a number of applications including mini- and micro-LED displays, AMOLED displays, AR and VR headsets, fingerprint sensors and integrated logic circuits. We have a research and development facility in Manchester,

UK, and manufacture product prototypes for prospective customers using our semiconductor manufacturing processes housed at the Centre for Process Innovation (CPI) at Sedgefield, UK. We have an extensive IP portfolio including over 125 issued patents across 19 patent families. Since our inception in 2009, we have devoted substantial amounts of our resources to the research and development of materials and production processes for the manufacture of organic thin film transistors and the enhancement of our intellectual property.

Our loss before income taxes was \$11.5 million and \$17.1 million for the year ended December 31, 2022, and 2021, respectively. As of December 31, 2022, our accumulated deficit was \$86.6 million. Substantially all our operating losses have resulted from expenses incurred in connection with research and development activities and from general and administrative costs associated with our operations.

Key Factors Affecting Our Performance

There are a number of industry factors that affect our business which include, among others:

Overall Demand for Products and Applications using Organic thin film transistors

Our potential for growth depends significantly on the adoption of organic thin film transistor (OTFT) materials in the display and sensor markets and our ability to capture a significant share of any market that does develop. We expect that demand for our technology will also fluctuate based on various market cycles, continuously evolving industry supply chains, trade and tariff terms, as well as evolving competitive dynamics in each of the respective markets. These uncertainties make demand difficult to forecast for us and our customers.

Intense and Constantly Evolving Competitive Environment

Competition in the industries we serve is intense. Many companies have made significant investments in product development and production equipment. To remain competitive, market participants must continuously increase product performance, reduce costs, and develop improved ways to serve their customers. To address these competitive pressures, we have invested in research and development activities to support new product development, improve ease of use, lower product costs and deliver higher levels of performance to differentiate our products in the market.

Governmental Trade and Regulatory Conditions

Our potential for growth depends on a balanced and stable trade, political, economic and regulatory environment among the countries where we do business. Changes in trade policy such as the imposition of tariffs or export bans to specific customers or countries could reduce or limit demand for our products in certain markets.

Technological Innovation and Advancement

Innovations and advancements in organic materials continue to expand the potential commercial application for our products. However, new technologies or standards could emerge, or improvements could be made in existing technologies that could reduce or limit the demand for our products in certain markets.

Intellectual Property Issues

We rely on patented and non-patented proprietary information relating to product development, manufacturing capabilities and other core competencies of our business. Protection of intellectual property is critical. Therefore, steps such as additional patent applications, confidentiality, and non-disclosure agreements, as well as other security measures are important. While we believe we have a strong patent portfolio and there is no actual or, to our knowledge, threatened litigation against us for patent-related matters, litigation or threatened litigation is a common method to effectively enforce or protect intellectual property rights. Such action may be initiated by or against us and would require significant management time and expenses.

Components of Results of Operations

Revenue

Our revenue currently consists of revenue from the sale of TRUFLEX[®] inks and demonstration products.

Cost of Revenues. Cost of revenues consists of (1) direct product costs incurred for the raw materials and manufacturing services for our products, (2) fixed product costs primarily relating to production, manufacturing and personnel and (3) depreciation consisting primarily of expenses related to our fixed assets. We expect our cost of goods sold attributable to direct product costs to increase proportionately with increases in revenue, and our cost of goods sold attributable to fixed product costs to remain substantially flat or moderately increase in connection with increases in revenue.

Other Operating Income. Our Other Operating Income includes government grants received for qualifying research and development projects, and research and development tax credits related to the United Kingdom's Research and Development tax relief for small and medium-sized enterprises, which is a government tax incentive designed to reward innovative companies for investing in research and development. The income associated with these items is recognized in the period which the research and development expenses occurred. Additionally, during the year ended December 31, 2021, the Company received government grants under the United Kingdom's Coronavirus Job Retention Scheme.

Operating Expenses

Research and Development. Research and development expenses consist primarily of compensation and related costs for personnel, including share-based compensation and employee benefits as well as costs associated with design, fabrication and testing of OTFT devices. In addition, research and development expenses include depreciation expenses related to our fixed assets. We expense research and development expenses as incurred. As we continue to invest in developing our technology for new products, we expect research and development expenses to remain flat or moderately increase in absolute dollars but to decline as a percentage of revenue. We do not believe that it is possible at this time to accurately project total program-specific expenses through commercialization. There are numerous factors associated with the successful commercialization of our technology, many of which cannot be determined with accuracy at this time based on our stage of development. Additionally, future commercial and other factors beyond our control will impact our development programs and plans.

Selling, General and Administrative. Selling, general and administrative expenses consist primarily of allocated compensation and related costs for personnel, including share-based compensation, employee benefits and travel. In addition, general and administrative expenses include third-party consulting, legal, audit, accounting services, allocations of overhead costs, such as rent, facilities and information technology. We expect general and administrative expenses to increase in absolute dollars in future periods due to additional legal, accounting, insurance, investor relations and other costs associated with being a public company, as well as other costs associated with growing our business.

Non-Operating Income (Expense)

Financial Income/(Expense), Net aggregates the following amounts:

Interest Expense. We entered into a term loan facility agreement in 2021 and incurred interest charges on the amount drawn down. The facility was repaid in full and there were no balances outstanding at December 31, 2022, and 2021.

Interest Income. Interest income is interest on our cash deposits.

Income Tax Expense. Income tax expense consists primarily of income taxes in jurisdictions in which we conduct business. We incurred income tax expense of \$24 thousand in 2022 and zero in 2021.

Foreign Currency Translation. Foreign currency translation reflects adjustments made due to currency fluctuations.

Results of Operations

The following tables set forth our results of operations for the periods presented. The information in the tables below should be read in conjunction with our consolidated financial statements and related notes included in Part II, Item 8 of this Form 10-K. The period-to-period comparisons of financial results in the tables below are not necessarily indicative of future results.

Comparison of Loss from Operations for the years ended December 31, 2022 and 2021

Our results of operations for the years ended December 31, 2022 and 2021 are as follows:

US\$000	Year Ended December 31,		Increase (Decrease)	
	2022	2021	Amount	Percentage
Revenue	\$ 40	\$ 18	\$ 22	122%
Cost of revenue	33	8	25	313%
Gross profit	7	10	(3)	(30)%
Other operating income	1,172	1,285	(113)	(9)%
Research and development expenses	5,802	8,199	(2,397)	(29)%
Selling, general and administrative expenses	5,071	8,069	(2,998)	(37)%
Transaction expenses	—	1,329	(1,329)	(100)%
Total operating expenses	10,873	17,597	(6,724)	(38)%
Loss from operations	<u>\$ (9,694)</u>	<u>\$ (16,302)</u>	<u>\$ 6,608</u>	<u>(41)%</u>

Revenue and Cost of Revenue

Our revenue currently consists of revenue from the sale of TRUFLEX[®] inks and demonstration products. The year-over-year change in revenue and gross profit reflects the largely one-off nature of these sales, consistent with our current stage of commercialization.

Other Operating Income

US\$000	Year Ended December 31,		Increase (Decrease)		% of total	% of total
	2022	2021	Amount	Percentage	2022	2021
Research & development tax credit	\$1,168	\$1,095	\$ 73	7%	100%	85%
Research & development grants	—	181	(181)	(100)%	0%	14%
Sale of fixed assets	4	—	4	100%	0%	0%
Other grants	—	9	(9)	(100)%	0%	1%
Total other operating income	<u>\$1,172</u>	<u>\$1,285</u>	<u>\$(113)</u>	<u>(9)%</u>	<u>100%</u>	<u>100%</u>

Our Other Operating Income includes government grants received for qualifying research and development projects, and research and development tax credits related to the United Kingdom's Research and Development tax relief for small and medium-sized enterprises, which is a government tax incentive designed to reward innovative companies for investing in research and development. The increase in R&D Tax Credit reflects higher eligible expenditure in 2022 compared to 2021. In 2021, R&D grant funding was secured for the "SmartLight" project that successfully demonstrated OTFT mini-LED backlights for displays with improved light uniformity and lower defects.

Operating Expenses

US\$000	Year Ended December 31,		Increase (Decrease)		% of total	% of total
	2022	2021	Amount	Percentage	2022	2021
Research and development	\$ 5,802	\$ 8,199	\$(2,397)	(29)%	53%	47%
Selling, general and administrative	5,071	8,069	(2,998)	(37)%	47%	46%
Transaction expenses	—	1,329	(1,329)	(100)%	0%	7%
Total operating expenses	<u>\$10,873</u>	<u>\$17,597</u>	<u>\$(6,724)</u>	<u>(38)%</u>	<u>100%</u>	<u>100%</u>

Operating expenses decreased by \$6.7 million, or 38%, to \$10.9 million for the year ended December 31, 2022, compared to \$17.6 million for the comparable period of 2021.

Research and development expense, which represents 53% and 47% of our total operating expenses for the twelve months ended December 31, 2022 and 2021, respectively, decreased by \$2.4 million to \$5.8 million for the period, primarily due to a \$2.7 million decrease in stock compensation expense, a \$0.6 million reduction from the effect of exchange rate movement compared to the prior year, partially offset by a \$0.9 million increase in expenses incurred in further developing core materials and in fabricating demonstrator devices to promote our technology to prospective customers and partners.

Selling, general and administrative expense, which represents 47% and 46% of our total operating expenses for the twelve months ended December 31, 2022 and 2021, respectively decreased by \$3.0 million to \$5.1 million for the period. This decrease was mainly due to a \$2.9 million decrease in stock compensation expense, a \$0.3 million reduction from the effect of exchange rate movements compared to the prior period, partially offset by \$0.2 million additional expense from the additional insurance and professional services expenses of operating as a public company and from increased marketing and related expenses promoting our products.

Transaction costs of \$1.3 million associated with the Share Exchange Agreement with SmartKem Limited, pursuant to which all of the equity interests in SmartKem Limited, except certain “deferred shares” which had no economic or voting rights and which were purchased by us for an aggregate purchase price of \$1.40, were exchanged for shares of our common stock and SmartKem Limited became our wholly owned subsidiary (the “Exchange”) were incurred in the year ended December 31, 2021. The Exchange was consummated during the first quarter of 2021 and no significant additional Exchange-related expenses were recorded thereafter.

We expect to continue to incur significant expenses and operating losses for the foreseeable future. We expect our expenses will increase in connection with our ongoing activities as we:

- continue to develop our core material, EDA tools and foundry services;
- add sales and field applications personnel and incur related expenses to support operational growth;
- increase activity directly related to promoting our products to increase revenues; and
- add financial accounting and management systems to position us for growth.

Non-Operating (Expenses)/Income and Net Loss

US\$000	Year Ended December 31,		(Increase) Decrease	
	2022	2021	Amount	Percentage
Loss from operations	\$ (9,694)	\$(16,302)	\$6,608	(41)%
Non-operating (expense)/income				
Loss on foreign currency transactions	(1,782)	(808)	(974)	121%
Interest expense	—	(19)	19	(100)%
Interest income	5	3	2	67%
Total non-operating expense	<u>(1,777)</u>	<u>(824)</u>	<u>(953)</u>	<u>116%</u>

US\$000	Year Ended December 31,		(Increase) Decrease	
	2022	2021	Amount	Percentage
Loss before income taxes	(11,471)	(17,126)	5,655	(33)%
Income tax expense	(24)	—	(24)	—
Net loss	<u>\$(11,495)</u>	<u>\$(17,126)</u>	<u>\$5,631</u>	<u>(33)%</u>

The increase in loss on foreign currency transactions was due to fluctuations in U.S. dollar/U.K. pound value arising from transactions denominated in foreign currencies and the translation of foreign currency denominated balances on intra-group loans that were first advanced in 2021.

The loss before income taxes was \$11.5 million for the year ended December 31, 2022, a decrease of \$5.7 million, compared to a loss before income taxes of \$17.1 million for the year ended December 31, 2021. The decrease in loss was attributable to lower stock compensation expense, the absence of transaction costs in 2022, partially offset by increases in loss on foreign currency transactions and lower operating expenses as described in the preceding paragraphs.

Liquidity and Capital Resources

Our future results are subject to substantial risks and uncertainties. We have operated at a loss for our entire history and anticipate that losses will continue over the coming year. To date, we have funded our liquidity and capital requirements primarily with proceeds from the private sale of our equity and debt securities and borrowing against our research and development credits. We will need to obtain additional funds to satisfy our operational needs and to fund our sales and marketing efforts, research and development expenditures, and business development activities. Our future liquidity and working capital requirements will depend on many factors including our ability to generate revenue from product sales, the timing and extent of spending to support our sales and marketing, product development and research and development efforts, our entry into one or more material agreements containing significant performance obligations and our needs for working capital to support our business operations. Until such time, if ever, as we can generate sufficient cash through revenue, we expect to finance our working capital requirements through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution, or licensing arrangements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all.

As of December 31, 2022, our cash and cash equivalents were \$4.2 million compared with \$12.2 million as of December 31, 2021. We believe that our cash and cash equivalents will be sufficient to support our expected liquidity and working capital requirements through the end of May 2023. However, in the event that we enter into contracts involving significant sales of our products, development agreements, license agreements, collaborations, acquisitions or other material transactions, we may require additional working capital to support our increased obligations. To date, we have not recorded significant revenues related to product sales and therefore do not have any present need to fund inventory or accounts receivable.

Our consolidated financial statements as of December 31, 2022 have been prepared under the assumption that we will continue as a going concern for the next twelve months. We expect to incur significant expenses and operating losses for the foreseeable future. These factors raise substantial doubt about our ability to continue as a going concern. Because our business does not generate positive cash flow from operating activities, we will need to obtain substantial additional capital in order to support our development efforts and fully commercialize our technology. We believe we will be able to raise additional capital in the event it is in our best interest to do so. Management's plans are to finance the working capital requirements through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. If we raise additional funds by issuing equity securities, our existing security holders will likely experience dilution. If we borrow money, the incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financial covenants that could restrict our operations. If we enter into a collaboration, strategic alliance or other similar arrangement, we may be forced to give up valuable rights. To the extent additional capital is not available when needed or on acceptable terms, we may be forced to abandon some or all of our development and commercialization efforts, which would have a material adverse effect on the prospects of the business. Further,

our assumptions relating to our cash requirements may differ materially from our actual requirements because of a number of factors, including significant unforeseen delays, changes in timing, scope, focus and direction of our development efforts and costs related to commercialization.

The following table shows a summary of our cash flows for the years ended December 31, 2022 and 2021, respectively:

US\$000	Year Ended December 31,		Increase (Decrease)	
	2022	2021	Amount	Percentage
Net cash used in operating activities	\$ (9,049)	\$ (9,728)	\$ 679	(7)%
Net cash used by investing activities	(79)	(341)	262	(77)%
Net cash provided by financing activities	1,830	22,204	(20,374)	(92)%
Effect of exchange rate changes on cash	(693)	(673)	(20)	3%
Net change in cash	(7,991)	11,462	(19,453)	(170)%
Cash, beginning of year	12,226	764	11,462	1,500%
Cash, end of year	\$ 4,235	\$12,226	\$ (7,991)	(65)%

Operating Activities

Net cash used in operating activities was \$9.0 million for the year ended December 31, 2022, compared to \$9.7 million for the year ended December 31, 2021, a decrease of \$0.7 million. The decrease resulted primarily from a decrease in our net loss of \$5.6 million, partially offset by a decrease of non-cash expense of \$4.6 million and a net decrease in operating assets and liabilities of \$0.3 million.

Investing Activities

Net cash used in investing activities was \$79 thousand for the year ended December 31, 2021, compared to \$0.3 million for the year ended December 31, 2021, a decrease of \$0.2 million. The decrease resulted from a reduced level of investment in laboratory and capital equipment purchases in 2022 after investment in these in previous years. In the future, we expect to continue to incur capital expenditures to support our research and development activities and wider business operations.

Financing Activities

Net cash flows provided by financing activities was \$1.8 million for the year ended December 31, 2022, compared to \$22.2 million for the year ended December 31, 2021, a decrease of \$20.4 million. During the first half of 2022, we consummated a private placement of our common stock resulting in net proceeds of \$1.8 million. In connection with the Exchange in February 2021, we consummated a private placement resulting in net cash of \$22.2 million in the first half of 2021.

Contractual Payment Obligations

Our principal commitments primarily consist of obligations under leases for office space and purchase commitments in the normal course of business for research & development facilities and services, communications infrastructure, and administrative services. These will be funded from the Company's cash balances and working capital.

US\$(000)	Payments Due by Period			
	2023	2024	2025	Total
Operating lease liabilities	\$234	\$234	\$19	\$ 487
Purchase obligations	613	68	—	681
	<u>\$847</u>	<u>\$302</u>	<u>\$19</u>	<u>\$1,168</u>

Recently Issued Accounting Pronouncements

For recently issued accounting announcements, see "Recently Issued Accounting Pronouncements" in Note 2, Significant Accounting Policies and Recent Accounting Pronouncements, in the Notes to our Consolidated Financial Statements included in this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

Our consolidated financial statements and the related notes thereto included in this Report are prepared in accordance with US GAAP. The preparation of consolidated financial statements also requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and related disclosures. These estimates are developed based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Actual results could differ significantly from the estimates made by management. To the extent that there are differences between our estimates and actual results, our future financial statement presentation, financial condition, results of operation, and cash flows will be affected.

We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates. Critical accounting policies and estimates are those that we consider the most important to the portrayal of our financial condition and results of operations because they require our most difficult, subjective, or complex judgments, often as a result of the need to make estimates about the effect of the matters that are inherently uncertain.

Accounting for Stock-Based Compensation

We account for stock-based compensation in accordance with ASC 718, *Compensation-Stock Compensation*. ASC 718 requires companies to estimate the fair value of equity-based payment awards on the date of grant using a Black-Scholes option-pricing model. We recognize compensation expenses for the value of our equity awards granted based on the straight-line method over the requisite service period of each of the awards.

We periodically grant stock options for a fixed number of shares of common stock to our employees, directors, and non-employee contractors, with an exercise price greater than or equal to the fair market value of the common stock at the date of the grant. We estimate the fair value of each stock option award using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected term of our stock-based awards, the risk-free interest rate for a period that approximates the expected term of our stock-based awards, and our expected dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by persons who receive equity awards. Prior to February 2022, the Company's common stock was not traded on an over the counter or national securities exchange and consequently the Company developed estimates for the inputs to the option-pricing model.

The assumptions used in determining the fair value of stock-based awards represent our best estimates, but the estimates involve inherent uncertainties and the application of our judgment. As a result, if factors change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different in the future.

Valuation allowance of deferred tax assets

Income taxes are recorded in accordance with ASC 740, *Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided, if based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We considered the positive and negative evidence bearing upon our ability to realize the deferred tax assets. In addition to our history of cumulative losses, we cannot be certain that future taxable income will be sufficient to realize our deferred tax assets. Accordingly, a full valuation allowance has been provided against our net deferred tax assets at both December 31, 2022, and 2021. Should we change our determination, based on the evidence available as to the amount of our deferred tax assets that can be

realized, the valuation allowance will be adjusted with a corresponding impact to the provision for income taxes in the period in which such determination is made and which may be material.

Derivative Asset for Embedded Conversion Features

We do not use derivative instruments to hedge exposures to cash flow, market, or foreign currency risks.

We evaluate convertible notes to determine if those contracts or embedded components of those contracts qualify as derivatives to be accounted for separately. In circumstances where the embedded conversion option in a convertible instrument is required to be bifurcated and there are also other embedded derivative instruments in the convertible instrument that are required to be bifurcated, the bifurcated derivative instruments are accounted for as a single, compound derivative instrument. The result of this accounting treatment is that the fair value of the embedded derivative is recorded as either an asset or a liability and marked-to-market each balance sheet date, with the change in fair value recorded in the statements of operations as other income or expense. Upon conversion or exercise of a derivative instrument, the instrument is marked to fair value at the conversion date and then that fair value is reclassified to equity.

The fair value of the embedded conversion features is estimated using a Monte Carlo simulation model, in which possible outcomes and their values are simulated repeatedly and randomly. Under the Monte Carlo method we estimated the fair value of the convertible notes conversion feature at the time of issuance and subsequent remeasurement dates, utilizing the with-and without method, where the value of the derivative feature is the difference in values between a note simulated with the embedded conversion feature and the value of the same note simulated without the embedded conversion feature. Estimating fair values of embedded conversion features requires the development of significant and subjective estimates that may, and are likely to, change over the duration of the instrument with related changes in internal and external market factors.

For more information regarding our accounting policies, see Note 2, Summary of Significant Accounting Policies and Recent Accounting Pronouncements, in our Notes to Consolidated Financial Statements in this Annual Report on Form 10-K.

Going Concern Evaluation

Our consolidated financial statements included elsewhere herein have been presented on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. We have financed our activities principally from the issuance of ordinary shares and debt securities. We have experienced recurring losses since inception and expect to incur additional losses in the future in connection with research and development activities.

In the year ended December 31, 2022, we raised net proceeds of \$1.8 million through the sale of our common stock. and at December 31, 2022, we had \$4.2 million of cash and cash equivalents after funding net cash used in operations for the year ended December 31, 2022, of \$9.0 million.

Our future viability is dependent on our ability to raise additional capital to satisfy our operational needs and to fund our sales and marketing efforts, research and development expenditures, and business development activities. Until such time, if ever, as we can generate sufficient cash through revenue, management's plans are to finance our working capital requirements through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all.

There is substantial doubt that the Company will be able to pay its obligations as they fall due, and this substantial doubt is not alleviated by management plans. The consolidated financial statements as of December 31, 2022 have been prepared assuming that the Company will continue as a going concern. Accordingly, the consolidated financial statements do not include any adjustments to the amounts and classification of assets and liabilities that may be necessary should the Company be unable to continue as a going concern.

JOBS Act Accounting Election

We are an emerging growth company, as defined in the JOBS Act. 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 provision allows an emerging growth company to either early adopt or delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are a smaller reporting company as defined in Rule 12b-2 of the Exchange Act; therefore, pursuant to Item 301(c) of Regulation S-K, we are not required to provide the information required by this Item.

Item 8. Financial Statements and Supplementary Data

SMARTKEM, INC.

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Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors

SmartKem, Inc.

Manchester, United Kingdom

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of SmartKem, Inc. (the “Company”) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive loss, stockholders’ equity, and cash flows for each of the two years in the period ended December 31, 2022, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

Going Concern Uncertainty

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has suffered recurring losses from operations and has a net capital deficiency that raise substantial doubt about its ability to continue as a going concern. Management’s plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO LLP

BDO LLP

We have served as the Company’s auditor since 2020.
Manchester, United Kingdom
March 30, 2023

SMARTKEM, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except number of shares and per share data)

	December 31, 2022	December 31, 2021
Assets		
Current assets		
Cash and cash equivalents	\$ 4,235	\$ 12,226
Accounts receivable, net	30	—
Research and development tax credit receivable	1,121	1,070
Prepaid expenses and other current assets	1,056	802
Total current assets	6,442	14,098
Property, plant and equipment, net	602	802
Right-of-use assets, net	475	154
Other assets, non-current	6	6
Total assets	\$ 7,525	\$ 15,060
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable and accrued expenses	\$ 931	\$ 1,423
Lease liabilities, current	206	87
Income taxes payable	22	—
Other current liabilities	244	—
Total current liabilities	1,403	1,510
Lease liabilities, non-current	239	28
Total liabilities	1,642	1,538
Commitments and contingencies (Note 8)		
Stockholders' Equity		
Preferred stock, par value \$0.0001 per share, 10,000,000 shares authorized, zero shares issued and outstanding, at December 31, 2022 and December 31, 2021, respectively	—	—
Common stock, par value \$0.0001 per share, 300,000,000 shares authorized, 26,984,996 and 25,554,309 shares issued and outstanding, at December 31, 2022 and December 31, 2021, respectively	3	3
Additional paid-in capital	92,930	89,954
Accumulated other comprehensive loss	(483)	(1,363)
Accumulated deficit	(86,567)	(75,072)
Total stockholders' equity	5,883	13,522
Total liabilities and stockholders' equity	\$ 7,525	\$ 15,060

The accompanying notes are an integral part of these consolidated financial statements.

SMARTKEM, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(in thousands, except number of shares and per share data)

	Year Ended December 31,	
	2022	2021
Revenue	\$ 40	\$ 18
Cost of revenue	33	8
Gross profit	7	10
Other operating income	1,172	1,285
Operating expenses		
Research and development	5,802	8,199
Selling, general and administrative	5,071	8,069
Transaction expenses	—	1,329
Total operating expenses	10,873	17,597
Operating Loss	(9,694)	(16,302)
Non-operating income/(expense)		
Loss on foreign currency transactions	(1,782)	(808)
Interest expense	—	(19)
Interest income	5	3
Total non-operating expense	(1,777)	(824)
Loss before income taxes	(11,471)	(17,126)
Income tax expense	(24)	—
Net loss	\$ (11,495)	\$ (17,126)
Net loss	\$ (11,495)	\$ (17,126)
Other comprehensive gain/(loss)		
Foreign currency translation gain	880	117
Total comprehensive loss	\$ (10,615)	\$ (17,009)
Basic & diluted net loss per common share	\$ (0.40)	\$ (0.68)
Basic & diluted weighted average shares outstanding	28,861,789	25,233,384

The accompanying notes are an integral part of these consolidated financial statements.

SMARTKEM, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share data)

	Common stock \$0.0001 Par Value		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Stockholders' Equity (Deficit)
	Shares	Amount				
Balance at January 1, 2021	13,627,887	\$ 1	\$61,276	\$(1,480)	\$(57,946)	\$ 1,851
Issuance of common stock due to exercise of stock-options	1,424,622	1	19	—	—	20
Stock-based compensation expense . . .	—	—	6,196	—	—	6,196
Repurchase of common stock	(2,307,700)	—	—	—	—	—
Effect of reverse capitalization	2,500,000	—	—	—	—	—
Issuance of common stock to vendor	147,500	—	280	—	—	280
Issuance of common stock and warrants in private placement	10,162,000	1	24,637	—	—	24,638
Issuance costs related to common stock and warrants in private placement . .	—	—	(2,454)	—	—	(2,454)
Foreign currency translation adjustment	—	—	—	117	—	117
Net loss	—	—	—	—	(17,126)	(17,126)
Balance at December 31, 2021	<u>25,554,309</u>	<u>\$ 3</u>	<u>\$89,954</u>	<u>\$(1,363)</u>	<u>\$(75,072)</u>	<u>\$ 13,522</u>

	Common stock \$0.0001 Par Value		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Stockholders' Equity (Deficit)
	Shares	Amount				
Balance at January 1, 2022	25,554,309	\$ 3	\$89,954	\$(1,363)	\$(75,072)	\$ 13,522
Stock-based compensation expense . . .	—	—	488	—	—	488
Issuance of common stock to vendor	430,687	—	658	—	—	658
Issuance of common stock in private placement	1,000,000	—	2,000	—	—	2,000
Issuance costs related to common stock in private placement	—	—	(170)	—	—	(170)
Foreign currency translation adjustment	—	—	—	880	—	880
Net loss	—	—	—	—	(11,495)	(11,495)
Balance at December 31, 2022	<u>26,984,996</u>	<u>\$ 3</u>	<u>\$92,930</u>	<u>\$ (483)</u>	<u>\$(86,567)</u>	<u>\$ 5,883</u>

The accompanying notes are an integral part of these consolidated financial statements.

SMARTKEM, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,	
	2022	2021 As restated
Cash flows from operating activities:		
Net loss	\$(11,495)	\$(17,126)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation expense	198	209
Common shares issued to vendor for services	391	263
Amortization of right of use asset	264	234
Stock option compensation expense	488	6,196
Loss on foreign currency transactions	1,782	808
Change in assets and liabilities:		
Accounts receivable, net	(32)	19
Research & development tax credit receivable	(213)	(104)
Prepaid expenses and other current assets	(42)	(532)
Accounts payable and accrued expenses	(385)	579
Lease liabilities	(265)	(276)
Other assets	—	2
Income taxes payable	22	—
Other current liabilities	238	—
Net cash used in operating activities	(9,049)	(9,728)
Cash flows from investing activities:		
Purchases of property, plant and equipment	(79)	(341)
Net cash used by investing activities	(79)	(341)
Cash flows from financing activities:		
Proceeds from term loan payable	—	738
Repayment of term loan payable	—	(738)
Proceeds from the issuance of common stock and warrants in private placement	—	24,638
Proceeds from the issuance of common stock in private placement	2,000	—
Payment of issuance costs	(170)	(2,454)
Proceeds from the exercise of stock options	—	20
Net cash provided by financing activities	1,830	22,204
Foreign currency effects on cash	(693)	(673)
Net change in cash	(7,991)	11,462
Cash and cash equivalents, beginning of year	12,226	764
Cash and cash equivalents, end of year	\$ 4,235	\$ 12,226
Supplemental disclosure of cash and non-cash investing and financing activities		
Cash paid for interest	\$ —	\$ 19
Right of use asset and lease liability additions	\$ 583	\$ 136
Issuance of common shares for consulting services	\$ 633	\$ 256

The accompanying notes are an integral part of these consolidated financial statements.

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. BUSINESS

Organization & Reverse Recapitalization

SmartKem, Inc. (“SmartKem” or the “Company”) a Delaware corporation, formerly known as Parasol Investments Corporation (“Parasol”), was formed on May 13, 2020, and is the successor, as discussed below, of SmartKem Limited, which was formed under the Laws of England and Wales. The Company was founded as a “shell” company registered under the Exchange Act, with no specific business plan or purpose until it began operating the business of SmartKem Limited following the closing of the Exchange described below.

On February 23, 2021, Parasol entered into a Securities Exchange Agreement (“the Exchange Agreement”), with SmartKem Limited. Pursuant to the Exchange Agreement all of the equity interests in SmartKem Limited, except certain deferred shares which had no economic or voting rights (the “Deferred Shares”) and which were purchased by Parasol for an aggregate purchase price of \$1.40, were exchanged for shares of Parasol common stock, par value \$0.0001 per share (“common stock”), and SmartKem Limited became a wholly owned subsidiary of Parasol (the “Exchange”).

As a result of the Exchange, Parasol legally acquired the business of SmartKem Limited, and continues as the existing business operations of SmartKem Limited as a public reporting company under the name SmartKem, Inc.

Under ASC 805, Business Combinations, SmartKem Limited was deemed the accounting acquirer based on the following predominate factors: Parasol was created as a “shell” company to effect a business combination and had no operations, the former shareholders of SmartKem Limited own more than a majority of the outstanding voting stock of the Company, the Company’s board of directors and management consists of the former board of directors and management of SmartKem Limited, SmartKem Limited was the largest entity by assets at the time of the Exchange, and the principal operating location of the Company is SmartKem Limited’s premises which are located in Manchester, United Kingdom.

The Exchange was accounted for as a reverse recapitalization, with no goodwill or other intangible assets recorded, in accordance with accounting principles generally accepted in the United States of America (“US GAAP”). Under this method of accounting, Parasol was treated as the “acquired” company for financial reporting purposes. Accordingly, for accounting purposes, the Exchange was treated as the equivalent of SmartKem Limited issuing stock for the net assets of Parasol, accompanied by a recapitalization. The net assets of Parasol are stated at historical cost, with no goodwill or other intangible assets recorded. The consolidated assets, liabilities, and results of operations prior to the Exchange are those of SmartKem Limited. Reported shares and earnings per share available to holders of the Company’s common stock, prior to the Exchange, have been retroactively restated as shares reflecting the exchange ratios established in the Exchange.

At the closing of the Exchange (the “Closing”), each SmartKem Limited ordinary share issued and outstanding immediately prior to the Closing (other than the Deferred Shares) was exchanged for 0.0111907 of a share of the Company’s common stock and each SmartKem Limited A ordinary share issued and outstanding immediately prior to the Closing was exchanged for 0.0676668 of a share of the Company’s common stock, with the maximum number of shares of our common stock issuable to the former holders of SmartKem Limited’s ordinary shares and A ordinary shares equal to 12,725,000. This includes enterprise management incentive options to purchase 124,497,910 SmartKem Limited ordinary shares (the “SmartKem Limited EMI Options”) issued and outstanding immediately prior to the Closing that were accelerated and exercised by the holders thereof for a like number of ordinary shares and exchanged for shares of the Company’s common stock pursuant to the Exchange. In aggregate 1,127,720,477 SmartKem Ltd shares were exchanged for 12,725,000 of the Company’s common stock, an average exchange ratio of 0.011283825. Immediately prior to the Closing, an aggregate of 2,500,000 shares of the Company’s common stock owned by the stockholders of Parasol prior to the Exchange were forfeited and cancelled (the “Stock Forfeiture”).

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Business

The Company is seeking to reshape the world of electronics with our proprietary organic semiconductor platform that we believe has the potential to affect the form and function of the next generation of low-cost displays and sensors. The Company's patented TRUFLEX[®] inks are solution deposited at a low temperature, on low-cost substrates to make OTFT circuits. SmartKem's organic semiconductor platform can be used in a number of applications including mini- and micro-LED displays, AMOLED displays, AR and VR headsets, fingerprint sensors and integrated logic circuits. The Company has a research and development facility in Manchester, UK, and manufactures product prototypes for prospective customers using its semiconductor manufacturing processes housed at the Centre for Process Innovation (CPI) at Sedgefield, UK. The Company has an extensive IP portfolio including over 125 issued patents across 19 patent families.

COVID-19 Pandemic

In March 2020, the World Health Organization declared the outbreak of COVID-19 as a global pandemic (the "Pandemic"). The Pandemic has had a widespread and detrimental effect on the global economy and has adversely impacted the Company's business and results of operations. The Company has experienced travel bans, states of emergency, quarantines, lockdowns, "shelter in place" orders, business restrictions and shutdowns in the countries where it operates. The Company's containment measures have impacted its day-to-day operations and disrupted its business. Because the severity, magnitude and duration of the Pandemic and its economic consequences are highly uncertain, rapidly changing and difficult to predict, the ultimate impact of the Pandemic on the Company's business, financial condition and results of operations is currently unknown. The additional costs incurred by the Company related to COVID-19 for the years ended December 31, 2022, and 2021, respectively were deemed to be immaterial to the consolidated financial statements. The Company anticipates there may be additional costs relating to the Pandemic incurred in the upcoming months that will be attributable to fiscal year 2023 and thereafter. These costs are not expected to be material.

The consolidated entity presented is referred to herein as "SmartKem", "we", "us", "our", or the "Company", as the context requires and unless otherwise noted.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

Basis for Presentation

These consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission and accounting principles generally accepted in the United States of America ("US GAAP") as defined by the Financial Accounting Standards Board (FASB) within the FASB Accounting Standards Codification ("ASC") and are presented in thousands, except number of shares and per share data.

Going Concern

The accompanying consolidated financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities, and commitments in the ordinary course of business. We have incurred recurring losses including net losses of \$11.5 million and \$17.1 million for the years ended December 31, 2022, and 2021, respectively. As of December 31, 2022, we had an accumulated deficit of \$86.6 million. We anticipate operating losses to continue for the foreseeable future due to, among other things, costs related to research funding, further development of our technology and products and expenses related to the commercialization of our products.

We expect that our cash and cash equivalents of \$4.2 million as of December 31, 2022, will be sufficient to fund our operating expenses and capital expenditure requirements through the end of May 2023. It is

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possible this period could be shortened if there are any significant increases in planned spending or development programs or more rapid progress of development programs than anticipated.

Our future viability is dependent on our ability to raise additional capital to fund our operations. We will need to obtain additional funds to satisfy our operational needs and to fund our sales and marketing efforts, research and development expenditures, and business development activities. Until such time, if ever, as we can generate sufficient cash through revenue, management's plans are to finance our working capital requirements through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. If we raise additional funds by issuing equity securities, our existing security holders will likely experience dilution. If we borrow money, the incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financial covenants that could restrict our operations. If we enter into a collaboration, strategic alliance or other similar arrangement, we may be forced to give up valuable rights. There can be no assurance however that such financing will be available in sufficient amounts, when and if needed, on acceptable terms or at all. The precise amount and timing of the funding needs cannot be determined accurately at this time, and will depend on a number of factors, including the market demand for the Company's products and services, the quality of product development efforts, management of working capital, and continuation of normal payment terms and conditions for purchase of services. If the Company is unable to substantially increase revenues, reduce expenditures, or otherwise generate cash flows for operations, then the Company will need to raise additional funding to continue as a going concern.

There is substantial doubt that the Company will be able to pay its obligations as they fall due, and this substantial doubt is not alleviated by management plans. The consolidated financial statements as of December 31, 2022 have been prepared assuming that the Company will continue as a going concern. Accordingly, the consolidated financial statements do not include any adjustments to the amounts and classification of assets and liabilities that may be necessary should the Company be unable to continue as a going concern.

Basis of Consolidation

The consolidated financial statements include the accounts of SmartKem, Inc. and its wholly-owned subsidiaries, SmartKem Delaware, Inc. and SmartKem Limited. The Company does not have any nonconsolidated subsidiaries. All intercompany balances and transactions have been eliminated on consolidation, including unrealized gains and losses on transactions between the companies.

The Company's formerly wholly owned subsidiary, SmartKem Delaware Inc. was dissolved on May 13, 2021.

Comprehensive loss

Comprehensive loss of all periods presented is comprised primarily of net loss and foreign currency translation adjustments.

Management's Use of Estimates

The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, including disclosure of contingent assets and liabilities, at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. The most significant estimates in the Company's consolidated financial statements relates to the valuation of common share, fair value of share options, fair value of embedded conversion features in the convertible notes, and the valuation allowance of deferred tax assets. These estimates and assumptions are based on current facts, historical experience and various other factors believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Due to the uncertainty of factors

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surrounding the estimates or judgments used in the preparation of the consolidated financial statements, actual results may materially vary from these estimates.

Certain Risk and Uncertainties

The Company's activities are subject to significant risks and uncertainties including the risk of failure to secure additional funding to properly execute the Company's business plan. The Company is subject to risks that are common to companies in the growth stage, including, but not limited to, development by the Company or its competitors of new technological innovations, dependence on key personnel, reliance on third party manufacturers, protection of proprietary technology, and compliance with regulatory requirements.

The Company has access under a framework agreement to equipment which is used in the manufacturing of demonstrator products employing the Company's inks. If the Company lost access to this fabrication facility, it would materially and adversely affect the Company's ability to manufacture prototypes and demonstrate products for potential customers. The loss of this access could significantly impede the Company's ability to engage in product development and process improvement activities. Alternative providers of similar services exist, but would take effort and time to bring into the Company's operations.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with original maturities of 90 days or less at acquisition to be cash equivalents. As of December 31, 2022 and 2021, the Company did not have any cash equivalents.

Accounts Receivable

Accounts receivable are stated at the amount the Company expects to collect and do not bear interest. The Company considers the following factors when determining the collectability of specific customer accounts: customer creditworthiness, past transaction history with the customer, current economic industry trends, and changes in customer payment terms. These receivables have historically been paid timely. Due to the nature of the accounts receivable balance, the Company believes there is no significant risk of non-collection. If the financial condition of the Company's customers were to deteriorate, adversely affecting their ability to make payments, allowances for doubtful accounts would be required. There was no allowance for doubtful accounts recorded as of December 31, 2022, and 2021.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentration of credit risk consist primarily of cash and cash equivalents and accounts receivable. Periodically, the Company maintains deposits in financial institutions in excess of government insured limits. Management believes that the Company is not exposed to significant credit risk as the Company's deposits are held at financial institutions that management believes to be of high credit quality and the Company has not experienced any losses in these deposits.

Property, Plant and Equipment

Property, plant and equipment is stated at cost, less accumulated depreciation. Maintenance and repairs are expensed when incurred. Additions and improvements that extend the economic useful life of the asset are capitalized and depreciated over the remaining useful lives of the assets. The cost and accumulated depreciation of assets sold or retired are removed from the respective accounts, and any resulting gain or loss is reflected in current earnings. Depreciation and amortization are provided using the accelerated declining balance method in amounts considered to be sufficient to amortize the cost of the assets to operations over their estimated useful lives. Property, plant and equipment is depreciated over an estimated useful life of approximately 4 years.

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Impairment of Long-Lived Assets

Management continually evaluates whether events or changes in circumstances might indicate that the remaining estimated useful life of long-lived assets may warrant revision, or that the remaining balance may not be recoverable. When factors indicate that long-lived assets should be evaluated for possible impairment, the Company uses an estimate of the related undiscounted cash flows in measuring whether the long-lived asset should be written down to fair value. Measurement of the amount of impairment would be based on generally accepted valuation methodologies, as deemed appropriate. If the carrying amount is greater than the undiscounted cash flows, the carrying amount of the asset is reduced to the asset's fair value. An impairment loss is recognized immediately as an operating expense in the consolidated statements of operations. Reversal of previously recorded impairment losses are prohibited. As of December 31, 2022, and 2021, Company's management believed that no revision to the remaining useful lives or impairment of the Company's long-lived assets was required.

Derivative Asset for Embedded Conversion Features

The Company does not use derivative instruments to hedge exposures to cash flow, market, or foreign currency risks.

The Company evaluates convertible notes to determine if those contracts or embedded components of those contracts qualify as derivatives to be accounted for separately. In circumstances where the embedded conversion option in a convertible instrument is required to be bifurcated and there are also other embedded derivative instruments in the convertible instrument that are required to be bifurcated, the bifurcated derivative instruments are accounted for as a single, compound derivative instrument. The result of this accounting treatment is that the fair value of the embedded derivative is recorded as a liability and marked-to-market each balance sheet date, with the change in fair value recorded in the statements of operations as other income or expense. Upon conversion or exercise of a derivative instrument, the instrument is marked to fair value at the conversion date and then that fair value is reclassified to equity.

The fair value of the embedded conversion features is estimated using a Monte Carlo simulation model, in which possible outcomes and their values are simulated repeatedly and randomly. Under the Monte Carlo method the Company estimated the fair value of the convertible notes conversion feature at the time of issuance and subsequent remeasurement dates, utilizing the with-and without method, where the value of the derivative feature is the difference in values between a note simulated with the embedded conversion feature and the value of the same note simulated without the embedded conversion feature. Estimating fair values of embedded conversion features requires the development of significant and subjective estimates that may, and are likely to, change over the duration of the instrument with related changes in internal and external market factors.

Fair Value of Financial Instruments

ASC 820, *Fair Value Measurements*, provides guidance on the development and disclosure of fair value measurements. Under this accounting guidance, fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability.

The accounting guidance classifies fair value measurements in one of the following three categories for disclosure purposes:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Inputs other than Level 1 prices for similar assets or liabilities that are directly or indirectly observable in the marketplace.

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Level 3: Unobservable inputs which are supported by little, or no market activity and values determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant judgment or estimation.

Fair value measurements discussed herein are based upon certain market assumptions and pertinent information available to management as of and during the years ended December 31, 2022, and 2021. The carrying value of the Company's cash, accounts receivable, other receivables, prepaid expenses and other current assets, accounts payable and accrued expenses approximate fair value because of the short-term maturity of these financial instruments.

Convertible Notes

The Company accounts for its convertible notes in accordance with ASC 470-20, *Debt with Conversion and Other Options* ("ASC 470-20"), which requires the liability and equity components of convertible debt instruments to be separately accounted for in a manner that reflects the issuer's nonconvertible debt borrowing rate.

Debt discount created by the bifurcation of embedded feature in the convertible notes are reflected as a reduction to the related debt liability. The discount is amortized to interest expense over the term of the debt using the effective-interest method.

Warrants

The accounting treatment of warrants issued is determined pursuant to the guidance provided by ASC 480, *Distinguishing Liabilities from Equity*, and ASC 815, *Derivatives and Hedging*, as applicable. Each feature of a freestanding financial instrument including, without limitation, any rights relating to subsequent dilutive issuance, dividend issuances, equity sales, rights offerings, forced conversions, dividends, and exercise are assessed with determinations made regarding the proper classification in the Company's consolidated financial statements. The Company determined that all warrants meet the criteria to be classified as equity.

Non-retirement Post-employment Benefits

The company records employee severance benefits as non-retirement post-employment benefits that are accounted for under ASC 712-10. A liability is accrued when it becomes probable that a payment will be made, and the amount is estimable. In most cases, a payment is not deemed probable until the employer makes the decision to terminate the employee. All severance payments identified were paid and expensed in the period incurred.

Leases

Operating lease assets are included within operating lease right-of-use assets, and the corresponding operating lease obligation on the consolidated balance sheets as of December 31, 2022 and 2021. The Company has elected not to present short-term leases as these leases have a lease term of 12 months or less at lease inception and do not contain purchase options or renewal terms that the Company is reasonably certain to exercise. All other lease assets and lease liabilities are recognized based on the present value of lease payments over the lease term at commencement date. Because most of the Company's leases do not provide an implicit rate of return, the Company used an incremental borrowing rate based on the information available at adoption date of ASC 842 (January 1, 2019) in determining the present value of lease payments.

Revenue

The Company applies the provisions of ASC 606, *Revenue from Contracts with Customers*. The Company recognizes revenue under the core principle to depict the transfer of control to the Company's customers in an amount reflecting the consideration the Company expects to be entitled to. In order to

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achieve that core principle, the Company applies the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contact and (5) recognize revenue when a performance obligation is satisfied.

The Company's current contracts with customers do not contain significant estimates or judgments. All of the Company's revenue contains a single performance obligation that is recognized upon fulfillment of the sales order.

The Company derives its revenues primarily from sales of TRUFLEX[®] inks and of demonstrator units to customers evaluating organic semiconductor technology. The transaction price is stated in each customer agreement and is allocated to a single performance obligation. Revenue is recognized upon shipment of each TRULFEX[®] ink or demonstrator, at a point in time. The Company does not have any significant financing components as payment is received at or shortly after the point of sale. Costs incurred to obtain a contract will be expensed as incurred when the amortization period is less than a year.

Collaboration Arrangements

The company entered into several joint development agreements during the year. The business arrangement between the two parties is not accounted for as a Collaborative Arrangement, as defined within the guidance under ASC 808, as both parties are not exposed to significant risks and rewards dependent on the commercial success of the activity.

It has also determined that other party is a vendor and not a customer, as defined within the guidance under ASC 606, as the other party did not primarily contract with SmartKem to obtain goods or services that are an output of the entity's ordinary activities in exchange for consideration. It was SmartKem that contracted with the other party to obtain design services from it.

These agreements are accounted for under the guidance of ASC 705, *Cost of Sales and Service*. Within ASC 705-20, Accounting for Consideration Received from a Vendor, the section discusses the accounting for consideration received by an entity from a vendor or supplier. Consideration from a vendor includes cash amounts that an entity receives or expects to receive from a vendor (or from other parties that sell the goods or services to the vendor). Consideration from a vendor also includes credit or other items (e.g., a coupon or voucher) that the entity can apply against amounts owed to the vendor (or to other parties that sell the goods or services to the vendor). Consideration from a vendor should be accounted for as a reduction of the purchase price of the goods or services acquired from the vendor unless the consideration from the vendor is one of the following, a) in exchange for a distinct good or service; b) a reimbursement of costs incurred by the entity to sell the vendor's products; or c) consideration for sales incentives offered to customers by manufacturers.

Research and Development Expenses

The Company expenses research and development costs as incurred. Research and development costs include salaries, employee benefit costs, direct project costs, supplies and other related costs. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received.

Patent and Licensing Costs

Patent and licensing costs are expensed as incurred because their realization is uncertain. These costs are classified as research and development expenses in the accompanying consolidated statements of operations and comprehensive loss.

Other Operating Income

The Company's other operating income includes government grants received for qualifying research and development projects, and research and development tax credits related to the United Kingdom's

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Research and Development tax relief for small and medium-sized enterprises, which is a government tax incentive designed to reward innovative companies for investing in research and development. Such incentives are recorded as other income when it is probable the amounts are collectible and can be reasonably estimated.

For the year ended December 31, 2022 and 2021, the Company recorded grant income and research & development tax credits of \$1,172 thousand and \$1,285 thousand, respectively, which are recorded as other operating income in the accompanying consolidated statements of operations. As of December 31, 2022, and December 31, 2021, the Company had receivables related to research & development tax credits for payments not yet received of \$1,121 thousand and \$1,070 thousand, respectively.

Ordinary Shares Valuation

Due to the absence of public trading market for the Company's common stock before February 2022, the Company utilized methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, Valuation of Privately-Held Company Equity Securities Issued as Compensation, to estimate the fair value of its ordinary shares. In determining the exercise prices for options to be issued, the estimated fair value of the Company's common stock on each grant date was estimated based upon a variety of factors, including:

- the issuance prices of shares of common stock;
- the rights and preferences of holders of preferred stock;
- the progress of the Company's research and development programs;
- the Company's stage of development and business strategy;
- external market conditions affecting the technology industry and trends within the technology industry;
- the Company's financial position, including cash on hand;
- the Company's historical and forecasted performance and operating results;
- the lack of active public market for the Company's ordinary shares;
- the likelihood of achieving a liquidity event, such as a securities offering, initial public offering or a sale of the Company's common stock

From February 2022, the Company's common stock is publicly traded, and the Company no longer has to estimate the fair value of the common stock, rather the value is determined based on quoted market prices.

Significant changes to the key assumptions underlying the factors used could result in different fair values of ordinary shares at each valuation date.

Shares of common stock are classified in stockholders' equity and represent issued share capital.

Share-based compensation

All share-based payments, including grants of stock options, are measured based on the fair value of the share-based awards at the grant date and recognized over their respective vesting periods. Outstanding options generally expire 10 years after the grant date. The Company has issued options that vest based on service requirements and issued options that vest based on performance requirements. Options become exercisable when service requirements are met. In the case of performance-based options, options become exercisable when there is a liquidity event, such as a change in control or sale or admission (listing as a public company or initial public offering ("IPO")), and the employee, or consultant, must be providing services to the Company at the time of the event. Due to the Exchange, all options outstanding immediately prior to the

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event with a performance obligation requirement became vested and exercisable. Non-cash stock-based compensation expense for the year ended December 31, 2022 and 2021 were \$0.5 million and \$6.2 million, respectively (see also Note 10).

The estimated fair value of stock options at the grant date is determined using the Black-Scholes pricing model. The Black-Scholes option pricing model requires inputs such as the fair value of common stock on date of grant, expected term, expected volatility, dividend yield, and risk-free interest rate. The assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment. As a result, if factors change and management uses different assumptions, stock-based compensation expense could be materially different for future awards. The Company records forfeitures when they occur.

Functional Currency and Operations

Prior to the Exchange, SmartKem Limited's ("the predecessor's") functional currency was the British Pound Sterling ("GBP"), and the consolidated financial statements were presented in United States dollars ("USD"). The predecessor's functional currency was the respective local currency of the primary economic environment in which an entity's operations are conducted. The predecessor translated the consolidated financial statements into the presentation currency using exchange rates in effect on the balance sheet date for assets and liabilities and average exchange rates for the period for statement of operations accounts, with the difference recognized in accumulated other comprehensive income/ (loss).

The Company's functional currency is the U.S. dollar ("USD"). The functional currency of the Company's foreign operation is the respective local currency. Assets and liabilities of foreign operations denominated in local currencies are translated at the spot rate in effect at the applicable reporting date. The consolidated statements of operations and comprehensive loss are translated at the weighted average rate of exchange during the applicable period. The resulting unrealized gain/loss is recognized as foreign currency translation as a component of other comprehensive income.

Income Taxes

Valuation allowance of deferred tax assets

Income taxes are recorded in accordance with ASC 740, Income Taxes ("ASC 740"), which provides for deferred taxes using an asset and liability approach. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided, if based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We considered the positive and negative evidence bearing upon its ability to realize the deferred tax assets. In addition to the Company's history of cumulative losses, the Company cannot be certain that future taxable income will be sufficient to realize its deferred tax assets. Accordingly, a full valuation allowance has been provided against its net deferred tax assets at both December 31, 2022 and 2021. Should the Company change its determination, based on the evidence available as to the amount of its deferred tax assets that can be realized, the valuation allowance will be adjusted with a corresponding impact to the provision for income taxes in the period in which such determination is made and which may be material.

As of December 31, 2022, and 2021, there were no material uncertain tax positions.

Contingent Liabilities

A provision for contingent liabilities is recorded when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. With respect to legal matters, provisions

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are reviewed and adjusted to reflect the impact of negotiations, estimated settlements, legal rulings, advice of legal counsel and other information and events pertaining to a particular matter. The Company is a party to certain litigation and disputes arising in the normal course of business. As of December 31, 2022, the Company does not expect that such matters will have a material adverse effect on the Company's business, financial position, results of operations, or cash flows.

Issuance Costs

Direct and incremental legal and accounting costs associated with the Company's issuance of common stock and warrants are deferred and classified as a component of other assets on the consolidated balance sheet until completion of the issuance. Upon completion of the issuance, deferred offering costs are reclassified from other assets to equity in additional paid-in capital and recorded against the net proceeds received in the issuance. For the year ended December 31, 2022, \$170 thousand of offering costs were recorded in additional paid-in capital and for the year ended December 31, 2021, \$2,454 thousand of offering costs were recorded in additional paid-in capital.

For the year ended December 31, 2021, \$1.3 million of direct and incremental costs associated with the Exchange were recorded as Transaction Expenses in the Consolidated Statement of Operations and Comprehensive Loss.

Segment Information

The Company has determined that it operates and reports in one segment, which focuses on the development of materials and processes used to make organic thin-film transistors (OTFTs) for the manufacture of flexible electronics. The Company's operating segment is reported in a manner consistent with the internal reporting provided to the chief operating decision maker ("CODM"). The Company's CODM has been identified as its Chairman and Chief Executive Officer.

Basic and Diluted Loss Per Share

Basic and diluted net loss per share is determined by dividing net loss by the weighted average ordinary shares outstanding during the period. For all periods presented with a net loss, the shares underlying the ordinary share options and warrants have been excluded from the calculation because their effect would be anti-dilutive. Therefore, the weighted-average shares outstanding used to calculate both basic and diluted loss per share are the same for periods with a net loss.

The loss per share information in these consolidated financial statements is reflected and calculated as if the Company had existed since January 1, 2021. Accordingly, loss per share for all periods was calculated based on the number of shares retroactively adjusted for the exchange ratio determined in the reverse recapitalization (see also note 1).

The Company has 2,168,000 pre-funded common stock warrants outstanding as of December 31, 2022, which became exercisable on April 23, 2021 based on terms and conditions of the agreements. As the pre-funded common stock warrants are exercisable for \$0.01, these shares are considered outstanding common shares and included in computation of basic and diluted Earnings Per Share as the exercise of the pre-funded common stock warrants is virtually assured. The Company included these pre-funded common stock warrants in basic and diluted earnings per share when all conditions were met on April 23, 2021.

The following potentially dilutive securities have been excluded from the computation of diluted weighted average shares outstanding as they would be anti-dilutive:

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	December 31,	
	2022	2021
Options	2,829,756	1,953,882
Warrants	985,533	985,533
Total	3,815,289	2,939,415

Recent Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-13, *Financial Instruments: Credit Losses (Topic 326)*, which requires measurement and recognition of expected losses for financial assets held. The new standard changes the impairment model for most financial instruments, including trade receivables, from an incurred loss method to a new forward-looking approach, based on expected losses. The estimate of expected credit losses will require organizations to incorporate considerations of historical information, current conditions and reasonable and supportable forecasts. The standards update is effective prospectively for annual and interim periods in fiscal years beginning after December 15, 2019, with early adoption permitted, for U.S. Securities Exchange filer. However, the standard is not applicable until January 1, 2023, because the company has elected to apply the extended transition period available for emerging growth companies. Emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies, which is effective prospectively for annual and interim periods beginning after December 15, 2022.

3. PREPAID EXPENSES AND OTHER CURRENT ASSETS:

Prepaid expenses and other current assets consist of the following:

	December 31, 2022	December 31, 2021
Prepaid service charges and property taxes	\$ 55	\$ 58
Prepaid utilities	51	51
Prepaid insurance	358	412
Prepaid administrative expenses	35	63
Prepaid technical fees	22	141
Prepaid consulting fees	304	27
VAT receivable	195	50
Other receivable and other prepaid expenses	36	—
Total prepaid expenses and other current assets	\$1,056	\$802

As of December 31, 2022 and 2021, there was \$169 thousand and \$217 thousand, respectively, of non-current prepaid insurance related to directors’ and officers’ liability insurance that was included in the amounts above.

4. PROPERTY, PLANT AND EQUIPMENT:

Property, plant and equipment consist of the following:

	December 31, 2022	December 31, 2021
Plant and equipment	\$ 1,478	\$ 1,633
Furniture and fixtures	218	245
Computer hardware and software	24	26

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	December 31, 2022	December 31, 2021
	1,720	1,904
Less: Accumulated depreciation	(1,118)	(1,102)
Property, plant and equipment, net	\$ 602	\$ 802

Depreciation expense was \$198 thousand and \$209 thousand for the year ended December 31, 2022 and 2021, respectively, and is classified as research and development expense.

5. ACCOUNTS PAYABLE AND ACCRUED EXPENSES:

Accounts payable and accrued expenses consist of the following:

	December 31, 2022	December 31, 2021
Accounts payable	\$230	\$ 510
Accrued expenses – lab refurbishments	117	131
Accrued expenses – technical fees	130	66
Accrued expenses – variable rent & utilities	15	20
Accrued expenses – audit & accounting fees	128	191
Accrued expenses – other	80	112
Credit card liabilities	20	10
Payroll and social security liabilities	211	383
Total accounts payable and accrued expenses	\$931	\$1,423

6. LEASES:

The Company has operating leases consisting of office space, lab space, and equipment with remaining lease terms of 1 to 3 years, subject to certain renewal options as applicable.

There was no sublease rental income for the year ended December 31, 2022 and 2021. The Company is not the lessor in any lease agreement, and no related party transactions for lease arrangements have occurred.

The table below presents certain information related to the lease costs for the Company’s operating leases for the periods ended:

	For the Year Ended December 31,	
	2022	2021
Operating lease cost	\$262	\$225
Short-term lease cost	10	32
Variable lease cost	186	140
Total lease cost	\$458	\$397

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The total lease cost is included in the consolidated statements of operations as follows:

	For the Year Ended December 31,	
	2022	2021
Research and development	\$430	\$373
Selling, general and administrative	28	24
Total lease cost	\$458	\$397

Right of use lease assets and lease liabilities for our operating leases were recorded in the consolidated balance sheets as follows:

	December 31, 2022	December 31, 2021
Assets		
Operating lease right of use assets	\$475	\$154
Total lease assets	\$475	\$154
Liabilities		
Current liabilities:		
Operating lease liability – current portion	\$206	\$ 87
Noncurrent liabilities:		
Operating lease liability, net of current portion	239	28
Total lease liabilities	\$445	\$115

The Company had no right of use lease assets and lease liabilities for financing leases as of December 31, 2022 and 2021.

The table below presents certain information related to the cash flows for the Company's operating leases for the periods ended:

	For the Year Ended December 31,	
	2022	2021
Operating cash outflows from operating leases	\$265	\$276
Supplemental non-cash amounts of operating lease liabilities arising from obtaining right of use assets	\$583	\$136

The table below presents certain information related to the weighted average remaining lease term and the weighted average discount rate for the Company's operating leases as of the period ended:

	For the Year Ended December 31,	
	2022	2021
Weighted average remaining lease term (in years) – operating leases	2.19	1.40
Weighted average discount rate – operating leases	7.73%	6.07%

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Undiscounted operating lease liabilities as of December 31, 2022, by year and in the aggregate, having non-cancelable lease terms in excess of one year were as follows:

	As of December 31, 2022
2023	\$234
2024	234
2025	19
Total undiscounted lease payments	487
Less imputed interest	(42)
Total net lease liabilities	\$445

7. NOTES PAYABLE:

On January 26, 2021, the Company entered into a term loan facility agreement for the amount of \$738 thousand. The funds were available to be drawn on from the effective date of the agreement through to January 27, 2021. The Company drew down the full loan amount on January 26, 2021. The Company's research and development tax credit was to be utilized as collateral. The Lender was to be paid immediately following payment of research and development tax credit from the United Kingdom's HM Revenue and Customs. The final repayment was due six months from the agreement date, if the loan and any interest was not repaid in full prior to this date. The loan carried a monthly interest rate of 1.25%. The interest accrued daily and compounded monthly on the monthly anniversary of the draw down date of the loan.

For the year ended December 31, 2021, the Company incurred an effective interest rate of 26.20% relating to notes payable. The interest expense recognized based on the debt's effective interest rate for the year ended December 31, 2022 and 2021, was zero and \$19 thousand, respectively, relating to notes payable. The Company repaid the note payable in full on March 2, 2021. There were no notes payable outstanding at the years ended December 31, 2022 and 2021.

8. COMMITMENTS AND CONTINGENCIES:

Legal proceedings

In the normal course of business, the Company may become involved in legal disputes regarding various litigation matters. In the opinion of management, any potential liabilities resulting from such claims would not have a material effect on the consolidated financial statements.

Commitments

Expenditure commitments contracted for but not yet incurred totaled \$681 thousand and primarily consists of purchase commitments in the normal course of business for research & development services, communications infrastructure and administrative services.

9. STOCKHOLDERS' EQUITY:

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. The Company's amended and restated certificate of incorporation and the Company's amended and restated bylaws do not provide for cumulative voting

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

rights. The holders of one-third of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

The Company has never paid any cash dividends to shareholders and does not anticipate paying any cash dividends to shareholders in the foreseeable future. Any future determination to pay cash dividends will be at the discretion of our board of directors and will be dependent upon financial condition, results of operations, capital requirements and such other factors as the board of directors deems relevant.

Market Information

Our common stock is traded on the OTC Market Group's OTCQB[®] Market ("OTCQB") under the ticker symbol "SMTK".

Preferred Stock

The Company currently has no shares of preferred stock outstanding. The board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences, and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock.

Common Stock Warrants

On February 23, 2021, a total of 985,533 fully vested common stock warrants were issued to a vendor for financial advisory services provided in connection with the sale of the Company's common stock. The common stock warrants are exercisable at a per share price of \$2.00 until they expire on February 23, 2026. During the years ended December 31, 2021 and December 31, 2022, no warrants issued to vendors for financial advisory services were exercised. The grant date fair value for these warrants of \$0.91 per warrant for a total fair value of \$896 thousand, was determined using the Black-Scholes options valuation model. The Company recorded the warrants at fair value, as both an increase and decrease in additional paid-in capital during the year ended December 31, 2021.

A summary of the Company's warrants to purchase common stock activity is as follows:

	Number of Shares	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (Years)
Warrants outstanding at January 1, 2021	—	\$ —	—
Exercised	—	—	—
Forfeited or Expired	—	—	—
Granted	985,533	2.00	5.00
Warrants outstanding at January 1, 2022	985,533	\$2.00	4.15
Exercised	—	—	—
Forfeited or Expired	—	—	—
Granted	—	—	—
Warrants outstanding at December 31, 2022	<u>985,533</u>	<u>\$2.00</u>	<u>3.15</u>

SMARTKEM, INC. AND SUBSIDIARIES
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On February 23, 2021, a total of 2,168,000 pre-funded common stock warrants were issued to investors with an exercise price of \$0.01 per share for total proceeds to the Company of \$4,314 thousand. During the years ended December 31, 2021, and December 31, 2022, no warrants issued to investors were exercised. The grant date fair value for these warrants of \$1.99 is based on the stock price at issuance date of \$2.00 less the exercise price of \$0.01. The pre-funded common stock warrants have no expiration date and terminate upon exercise.

A summary of the Company's pre-funded warrants to purchase common stock activity is as follows:

	Number of Shares	Weighted- Average Exercise Price
Pre-funded warrants outstanding at January 1, 2021	—	\$ —
Exercised	—	—
Forfeited or Expired	—	—
Granted	2,168,000	0.01
Pre-funded warrants outstanding at January 1, 2022	2,168,000	\$0.01
Exercised	—	—
Forfeited or Expired	—	—
Granted	—	—
Pre-funded warrants outstanding at December 31, 2022	<u>2,168,000</u>	<u>\$0.01</u>

The grant date fair value of common stock warrants is determined using the Black-Scholes option-pricing model. There was no public trading market for our shares before February 2022 and the Company estimated its expected stock volatility based on historical volatility of publicly traded peer companies. The Company did not issue any warrants in the year ended December 31, 2022.

Common Stock Issued to Vendors for Services

On February 23, 2021, the Company issued 50,000 shares of common stock for advisory services.

On May 27, 2021, and November 29, 2021, the Company issued 25,000 and 12,500 shares of common stock, respectively, as payment for investor relations services.

On August 13, 2021, the company issued 60,000 shares of common stock for advisory services.

On February 28, 2022, May 27, 2022, and November 29, 2022, the Company issued 12,500, 22,473 and 35,714 shares of common stock, respectively, as payment for investor relations services.

On June 29, 2022, the Company issued 360,000 shares of common stock as payment for a one-year internet advertising contract.

10. SHARE-BASED COMPENSATION:

On February 23, 2021, the Company approved the 2021 Equity Incentive Plan ("2021 Plan"), in which a maximum aggregate number of shares of common stock that may be issued under the 2021 Plan is 2,275,000 shares. Subject to the adjustment provisions of the 2021 Plan, the number of shares of the Company's common stock available for issuance under the 2021 Plan will also include an annual increase on the first day of each fiscal year beginning with 2022 fiscal year and ending on the Company's 2031 fiscal year in an amount equal to the least of: 1) 2,275,000 shares of the Company's common stock; 2) four percent (4%) of the outstanding shares of the Company's common stock on the last day of the immediately preceding fiscal year; or 3) such number of shares of the Company's common stock as the administrator may determine.

SMARTKEM, INC. AND SUBSIDIARIES

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As of January 1, 2021, there were 1,810,749 SmartKem Limited options that were outstanding. Of these options 1,424,622 were accelerated and exercised by the holders thereof for a like number of ordinary shares of SmartKem Limited and exchanged for shares of the Company’s common stock pursuant to the Exchange. As a result of the reverse merger and recapitalization, an aggregate of 402,586 options were issued during February 2021 under the 2021 Plan in consideration for the cancellation of the SmartKem Limited options that were outstanding. Of these options, 336,557 had an exercise price of \$0.001 per share and 66,029 had an exercise price of \$2.00 per share and all expire on the ten-year anniversary of the grant date. These options were fully vested on the grant date.

During the year ended December 31, 2022, the Company issued additional options exercisable for 918,000 shares of common stock to employees, directors and consultants. The options vest over a period of three or four years, have an exercise price of \$2.00 per share and expire on the ten-year anniversary of the grant date.

Determining the appropriate fair value of share-based awards requires the input of subjective assumptions, including the fair value of the Company’s common shares, and for share options, the expected life of the option, and expected share price volatility. The Company uses the Black-Scholes option pricing model to value its share option awards. The assumptions used in calculating the fair value of share-based awards represent management’s best estimates and involves inherent uncertainties and the application of management’s judgment. As a result, if factors change and management uses different assumptions, the share-based compensation expense could be materially different for future awards. Options granted under the 2021 Plan for year ended December 31, 2022, and December 31, 2021, were valued using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31, 2022	Year Ended December 31, 2021
Expected term (years)	6 years – 6.3 years	5 years – 6 years
Risk-free interest rate	3.1% – 3.6%	0.3% – 1.2%
Expected volatility	64%	54% – 58%
Expected dividend yield	0%	0%

Prior to February 2022, in the absence of a public trading market for the common stock, on each grant date, the Company developed an estimate of the fair value of the shares of common stock underlying the option grants. The Company estimated the fair value of the shares of common stock by referencing arms-length transactions inclusive of the shares of common stock underlying which occurred on or near the valuation date(s). The Company determined the fair value of the common stock using methodologies, approaches and assumptions consistent with the AICPA Practice Guide, Valuation of Privately Held Company Equity Securities Issued as Compensation and based in part on input from an independent third-party valuation firm. From February 2022, the Company’s common stock is publicly traded, and the Company no longer has to estimate the fair value of the shares of common stock, rather the value is determined based on quoted market prices.

The Company estimates its expected volatility by using a combination of historical share price volatilities of similar companies within our industry. The risk-free interest rate assumption is based on observed interest rates for the appropriate term of the Company’s options on a grant date. The contractual term is 10 years, and the expected option term is lower.

The following table reflects share activity under the option plans for the years ended December 31, 2022, and 2021:

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Number of Shares	Weighted- Average Exercise Price	Weighted- Average Contractual Term (Years)	Weighted- Average Fair Value at Grant Date	Aggregate Intrinsic Value (in thousands)
Options outstanding at January 1, 2021	1,810,749	\$0.06143	9.70	\$3.46867	
Exercised	(1,424,622)	0.01447			
Cancelled	(405,936)	0.06452			
Forfeited	(136,221)	0.00100			
Granted	<u>2,109,912</u>	<u>1.68113</u>			
Options outstanding at December 31, 2021	1,953,882	\$1.72323	9.31	\$1.12355	
Exercised	—	—			
Cancelled	—	—			
Forfeited	(42,126)	2.00000			
Granted	<u>918,000</u>	<u>2.00000</u>			
Options outstanding at December 31, 2022	<u>2,829,756</u>	<u>\$1.80889</u>	<u>8.77</u>	<u>\$0.98273</u>	
Options exercisable at December 31, 2022	<u>986,636</u>	<u>\$1.45189</u>	<u>8.26</u>		<u>\$162</u>
Vested and expected to vest after December 31, 2022	<u>2,829,756</u>	<u>\$1.80889</u>	<u>8.77</u>		

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the options and the fair value of our common stock at the end of the year for those options that had exercise prices lower than the fair value of our common stock.

No options were exercised in the year end December 31, 2022. The aggregate intrinsic value of options exercised during the year ended December 31, 2021, was \$2.4 million. The total fair value of options vesting in the year ended December 31, 2022 was \$690 thousand. The total fair value of options vesting in the year ended December 31, 2021 was \$6.6 million.

The weighted-average grant date fair value per option granted for the year ended December 31, 2022 and 2021 was \$0.68. and \$1.14 respectively.

Stock-based compensation, including stock options is included in the consolidated statements of operations as follows:

	For the Year Ended December 31,	
	<u>2022</u>	<u>2021</u>
Research and development	\$216	\$2,982
Selling, general and administrative	<u>272</u>	<u>3,214</u>
Total	<u>\$488</u>	<u>\$6,196</u>

As of December 31, 2022, there was \$1.4 million of compensation cost related to non-vested stock option awards not yet recognized that will be recognized on a straight-line basis through the end of the vesting periods in July 2026. The amount of future stock option compensation expense could be affected by any future option grants or by any forfeitures.

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

11. INCOME TAXES

United States and foreign profit/(loss) from operations before income taxes was as follows:

	For the Year Ended December 31,	
	2022	2021
United States	\$ 584	\$ (5,039)
Foreign	(12,055)	(12,087)
Loss before income taxes	\$(11,471)	\$(17,126)

A reconciliation of the statutory income tax rate to the Company's effective tax rate consists of the following:

	Year Ended December 31,	
	2022	2021
Taxes at domestic rate	21.0%	21.0%
State and local income taxes	—%	—%
Non-US statutory rates	2.9%	(0.8)%
Permanent items	(6.3)%	(7.3)%
Change in valuation allowance	(17.9)%	(22.4)%
Statutory Rate Change	—%	9.6%
Other	0.1%	(0.1)%
Effective tax rate	(0.2)%	(0.0)%

The components of income tax provision/(benefit) are as follows:

	December 31,	
	2022	2021
Current		
Federal	—	—
State	2	—
Foreign	22	—
Total Current	\$ 24	\$ —
Deferred		
Federal	—	—
State	—	—
Foreign	—	—
Total Deferred	—	—
Total	\$ 24	\$ —

Deferred income taxes reflect the net tax effects of temporary differences between the carrying value of assets and liabilities for financial reporting purposes and amounts used for income tax purposes. The temporary differences that give rise to deferred tax assets and liabilities are as follows:

SMARTKEM, INC. AND SUBSIDIARIES
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	December 31,	
	2022	2021
Deferred tax assets/(liabilities):		
Net operating loss carryforwards	\$ 9,151	\$ 7,506
Property plant and equipment	(150)	(190)
Other	68	229
	9,069	7,545
Valuation allowance	(9,069)	(7,545)
Deferred tax assets, net of allowance	\$ —	\$ —

The Company recorded a full valuation allowance against its net deferred tax assets as of December 31, 2022, and 2021. The Company considered the positive and negative evidence bearing upon its ability to realize the deferred tax assets. In addition to the Company’s history of cumulative losses, the Company cannot be certain that future taxable income will be sufficient to realize its deferred tax assets. Accordingly, a full valuation allowance has been provided against its net deferred tax assets. When the Company changes its determination as to the amount of its deferred tax assets that can be realized, the valuation allowance is adjusted with a corresponding impact to the provision for income taxes in the period in which such determination is made.

As of December 31, 2022, and 2021, the Company had net operating loss carry-forwards of approximately \$39.5 million and \$30.7 million, respectively. The net operating loss carry-forwards were generated in the tax years from 2009 to 2022 with an unlimited carry-forward period. The Company has no uncertain tax positions, or penalties and interest accrued, that if recognized would reduce net operating loss carry-forwards or affect tax expense.

The Company files tax returns as prescribed by the tax laws in the United States and United Kingdom in which they operate. In the normal course of business, the Company is subject to examination by the federal jurisdiction based on the statute of limitations. As of December 31, 2022, open years related to the United States and United Kingdom are 2019 to 2021.

The Company has no open tax audits with any taxing authority as of December 31, 2022. As of December 31, 2022, and December 31, 2021, the Company had no accrued interest and penalties related to uncertain tax positions and no amounts have been recognized in the Company’s statements of operations.

12. DEFINED CONTRIBUTION PENSION:

The Company operates a defined contribution pension scheme. The assets of the scheme are held separately from those of the Company in an independently administered fund. The pension cost charge represents contributions payable by the Company to the fund. Pension cost is included in the consolidated statements of operations as follows:

	For the Years End December 31,	
	2022	2021
Research and development	\$108	\$ 98
Selling, general and administrative	52	42
Total pension cost	\$160	\$140

As of December 31, 2022, there was \$1 thousand owed to the pension scheme that is recorded under accounts payable and accrued expenses on the consolidated balances sheets. As of December 31, 2021, there were no amounts owed to the pension scheme.

SMARTKEM, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

13. RELATED PARTY TRANSACTIONS:

In addition to transactions and balances related to share-based compensation to officers and directors, the Company incurred expenses of \$110 thousand and \$65 thousand, for the year ended December 31, 2022 and 2021, respectively, due to reimbursement of expenses and compensation for members of the Board of Directors. These expenses are recorded in selling, general & administrative in the consolidated statements of operations. As of December 31, 2022 and December 31, 2021, there was \$16 thousand and \$18 thousand, respectively, payable to members of the Board of Directors that are recorded in accounts payable and accrued expenses on the consolidated balance sheets.

During the year ended December 31, 2021, the Company reimbursed an owner for legal fees and other expenses as a result of the Exchange (see Note 1). The reimbursement of these fees for services resulted in an expense of \$66 thousand for the year ended December 31, 2021 and there was zero payable as of December 31, 2021.

During the year ended December 31, 2021, the Company obtained consulting services from an individual who is a family member of a Director of the Company. The consulting services resulted in an expense of \$35 thousand for the year ended December 31, 2021 and there was zero payable as of December 31, 2021.

Octopus Share Purchase

On January 27, 2022, we sold an aggregate of 1,000,000 shares of our common stock at a purchase price of \$2.00 per share to Octopus Titan VCT plc and Octopus Investments Nominees Limited in accordance with the Letter Agreement, dated as of February 23, 2021, between the Company and Octopus Titan VCT plc and certain related parties. During the year ended December 31, 2022, the Company reimbursed an owner for legal fees and other expenses as a result of the Octopus Share Purchase. The reimbursement of these fees for services resulted in an expense of \$11 thousand for the year ended December 31, 2022 and there was zero payable as of December 31, 2022.

14. SUBSEQUENT EVENTS:

Under the evergreen adjustment provisions of the 2021 Plan, on January 1, 2023 the number of shares of the Company's common stock available for issuance under the 2021 Plan was increased by 1,079,399 or four percent (4%) of the total number of shares of Common Stock outstanding on December 31, 2022. After giving effect to increase, the total number of shares of Common Stock that may be issued under Plan will be 4,376,571.

In January 2023, 50,000 shares of our common stock were issued to a vendor in consideration for services to be provided.

ITEM 9. Changes In And Disagreements With Accountants On Accounting And Financial Disclosure

None.

Item 9A. Controls and Procedures

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well-designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in reports filed or submitted under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosures.

As of the end of the year covered by this Form 10-K, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Exchange Act) pursuant to Rule 13a-15 of the Exchange Act. Based upon, and as of the date of, this evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures as of December 31, 2022, were effective.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act). Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our internal control over financial reporting as of the end of the period covered by this Report, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management concluded that, as of December 31, 2022, our internal control over financial reporting was effective.

Changes in Internal Control over Financial Reporting

In August 2022, we determined that we made an error in the presentation and accounting of our consolidated statement of cashflows in our annual and interim consolidated financial statements during 2021 and 2022. The effect of this error was to overstate net cash used in operating activities and effect of exchange rate changes on cash for each reported period. For the year ended December 31, 2021, the effect of this error was to overstate net cash used in operating activities and effect of exchange rate changes on cash by \$0.8 million, respectively. The error and the required restatement had no effect on our cash flow from investing activities, financing activities, net change in cash or cash and cash equivalents as of the reporting date and had no impact on our consolidated balance sheet, our consolidated statements of operations and comprehensive loss and our consolidated statements of stockholders' equity.

As a result, we determined that there was a material error in the cash flow statement that required a restatement of the financial statements for the fiscal year ended December 31, 2021 and to our Form 10-Qs for the periods ended September 30, 2021 and March 31, 2022 (including comparative information for

March 31, 2021) to restate the previously issued financial statements, with comparatives for June 30, 2021 restated in our Form 10-Q for the period ended June 30, 2022 to restate the previously issued financial statements. This was due to inadequate design and implementation of controls to evaluate and monitor the presentation and compliance with accounting principles generally accepted in the United States of America related to the cash flow statement.

Under the direction of the Audit Committee, management has actively engaged in the planning for, and implementation of, remediation efforts to address the material weakness in respect of inadequate design and implementation of controls to evaluate and monitor the presentation and compliance with accounting principles generally accepted in the United States of America related to the cash flow statement. The remediation plan included enhancement of our existing monitoring and review controls over the preparation of financial statements, including designing and documenting additional procedures, reconciliations and analysis to evaluate and monitor presentation of the cash flow statement. As of December 31, 2022, management, with the participation of our Chief Executive Officer and Chief Financial Officer, has determined that the material weaknesses identified in prior years and in the first three quarters of 2022 have been remediated.

Management believes that progress continues to be made towards improving the effective internal control environment, on a quarterly basis, as we continue to design and implement common policies, IT general controls, procedures and controls for financial reporting. We have many individual policies, procedures and controls already in place and appropriate financial systems have been implemented to establish an effective internal control environment. Under the direction of the Audit Committee, management will continue to review and make necessary changes to the overall design of our internal control environment, as well as to policies and procedures to improve the overall effectiveness of internal controls during each of the quarters and the year ending December 31, 2023.

Other than the changes to remediate the material weaknesses noted above, there was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended December 31, 2022, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to an exemption for nonaccelerated filers and emerging growth companies from the internal control audit requirements of Section 404(b) of the Sarbanes-Oxley Act.

Item 9B. Other Information

On March 29, 2023, the Company entered into an employment agreement with Barbra Keck, the Company's Chief Financial Officer (the "Keck Employment Agreement") setting forth the terms and conditions of her employment and her expectations as Chief Financial Officer. The Keck Employment Agreement provides, among other things, for: (i) a term of three years beginning from December 14, 2022, the date of Ms. Keck's appointment as Chief Financial Officer, subject to automatic renewal for successive one year terms unless either party provides sixty (60) days prior written notice of its intent not to renew; (ii) an annual base salary of \$300,000 (subject to adjustment upwards to \$350,000 in the board of director's discretion, but at the latest immediately upon the listing of the Company's common stock on either The Nasdaq Stock Market or the NYSE American Exchange); (iii) eligibility for an annual bonus having a maximum of 40% of her then base salary; and (iv) in the event that Ms. Keck's employment is terminated without "cause" or she resigns "for good reason" (each as defined in the Keck Employment Agreement), or her employment is terminated at the end of the any term as the result of the Company providing notice of non-renewal, subject to execution and non-revocation of a release of claims in the Company's favor, Ms. Keck will be eligible for: (a) payments equal to twelve (12) months of her base salary (at the rate in effect immediately prior to the date of termination), less applicable withholdings and authorized deductions, to be paid in equal installments in accordance with our customary payroll practices), (b) a pro-rata bonus for the year of termination and (c) in the event Ms. Keck timely elects to continue any health insurance employee benefits pursuant to COBRA, monthly payments equal to the applicable COBRA costs for a period of six (6) months. Ms. Keck is subject to non-compete and non-solicit provisions, which apply during the term

of her employment and for a period of twelve (12) months following termination of her employment for any reason. The Keck Employment Agreement also contains customary confidentiality and assignment of inventions provisions. The description of the Keck Employment Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Keck Employment Agreement, which has been filed as Exhibit 10.25 to this Annual Report and is incorporated herein by reference.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The following table sets forth the names, positions and ages of our executive officers and directors as of March 24, 2023:

Name	Position	Age
Ian Jenks	Chairman of the Board, Chief Executive Officer and President	68
Barbra C. Keck	Chief Financial Officer and Director	45
Beverley Brown, Ph.D.	Chief Scientist	61
Simon Ogier, Ph.D.	Chief Technology Officer	48
Klaas de Boer ⁽¹⁾⁽²⁾⁽³⁾	Director	57
Steven DenBaars, Ph.D. ⁽¹⁾⁽²⁾⁽³⁾	Director	60

(1) Member of the Audit Committee.

(2) Member of the Compensation Committee.

(3) Member of the Corporate Governance and Nominating Committee.

Executive Officers

Ian Jenks has served as our Chief Executive Officer and President since December 2017 and as a member of our board of directors since February 2021. Mr. Jenks has more than 30 years of board-level experience in the industrial technology industry and has served as chief executive officer of companies operating in the United States and Europe. Mr. Jenks founded and since August 2010 has acted as the chief executive officer of Ian Jenks Limited, a consulting company providing consulting services to companies in the industrial technology industry. Mr. Jenks's past directorships include Techstep ASA, a provider of managed mobile services in the Nordics, Paysafe plc., an international provider of payment processing services, and Brady plc, a provider of commodity trading software. Mr. Jenks has also served and continues to serve as a director of a number of private companies. Mr. Jenks received a B.Sc. in Aeronautical Engineering from Bristol University. We believe that Mr. Jenks' significant management experience and experience in the technology industry qualify him to serve on our board of directors.

Barbra C. Keck has served as our Chief Financial Officer since December 2022 and has served as a member of our board of directors since February 2021. From February 2021 to December 2022, Ms. Keck served as the chief financial officer of Deverra Therapeutics, Inc., a developer of cell therapies. From January 2009 until May 2020, she held positions of increasing responsibility at Delcath Systems, Inc., an interventional oncology company, starting as controller and ultimately becoming a senior vice president in March 2015 and chief financial officer in February 2017. Ms. Keck received an M.B.A. in Accountancy from Baruch College and a Bachelor of Music in Music Education from the University of Dayton. We believe that Ms. Keck's significant management experience, including as our Chief Financial Officer, qualifies her to serve on our board of directors.

Beverley Brown, Ph.D. has served as our Chief Scientist since July 2014. She provides services to us through her consulting company, B Brown Consultants Ltd. Prior to joining our company, she held a number of research and development positions with increasing responsibilities at Imperial Chemical Industries Ltd., Zeneca Group PLC and at the Avecia Group PLC. She formed BAB Consultants Ltd in 2006 and for approximately eight years provided consulting services to a number of chemical companies, as well as to the U.K. government and CPI. Dr. Brown has worked in the field of organic semiconductor technology and in the area of printable electronics for almost 20 years. Dr. Brown holds a Ph.D. in Organic Chemistry from the University of Glasgow.

Simon Ogier, Ph.D. has served as our Chief Technology Officer since June 2019. From August 2015 to June 2019 Dr. Ogier was CTO at NeuDrive Limited, a developer of organic semiconductor materials for sensor and other electronic applications, where he was responsible for the development of processes to

fabricate OTFTs and to integrate them into biosensor devices. From April 2007 to July 2015, Dr. Ogier was Head of Research and Development within the U.K.'s Printable Electronics Technology Centre ("PETEC") at CPI. He was responsible for the establishment of the PETEC facility and for developing the technical programs of work to build a capability within the U.K. for printed/plastic electronics processing. Dr. Ogier is a member of the IEC TC119 standards committee for Printed Electronics, leading the development of international standard IEC62899-203 (Semiconductor Ink) and is a Fellow of the Institute of Physics. Dr. Ogier has over 19 years of experience developing high performance organic semiconductors for transistor applications. Dr. Ogier has co-authored a number of journal articles and is a co-inventor on a number of patents families. He received a bachelor's degree and Ph.D. in Physics from the University of Leeds.

Non-Employee Directors

Klaas de Boer has served as a member of our board of directors since February 2021 and has served as a member of the board of directors of SmartKem Limited since 2017. From January 2008 until June 2021, Mr. de Boer served as the managing partner of Entrepreneurs Fund Management LLP, a venture capital firm. Mr. de Boer served as a director of Lifeline Scientific Inc., Heliocentris Energy Solutions AG and serves as chair of AIM listed Xeros Technology Group plc. Mr. de Boer has been a venture capitalist for more than 20 years. Mr. de Boer received his M.Sc. degree in Applied Physics from Delft University of Technology and his M.B.A. from INSEAD. We believe that Mr. de Boer's venture capital experience, experience with complex technology companies and previous experience as a director of publicly traded companies qualify him to serve on our board of directors.

Steven DenBaars has served as a member of our board of directors since June 2022. Professor DenBaars is a Distinguished Professor of Materials and Co-Director of the Solid-State Lighting and Energy Electronics Center at University of California, Santa Barbara. Professor DenBaars joined UCSB in February 1991, and currently holds the Mitsubishi Chemical Chair in Solid State Lighting and Displays. He has served on the board of directors of Akoustis Technologies, Inc. (NASDAQ:AKTS), a developer and manufacturer of radio frequency filters for mobile devices, since May 2015 and has served on its technology committee since July 2017. He has also been a member of the board of directors of Aeluma, Inc., a privately held start-up engaged in the manufacture high performance sensors for mobile devices and vehicles, since June 2021. Professor DenBaars was formerly a co-founder and board member of privately held technology start-up companies, Soraa Inc. and Soraa Laser Diode Inc. Professor DenBaars has a Bachelor of Science in Metallurgical Engineering from the University of Arizona and a Master of Science and a Ph.D. in Material Science and Electrical Engineering from the University of Southern California. Professor DenBaars is a member of the National Academy of Engineering, and a Fellow of IEEE and National Academy of Inventors. We believe that Professor DenBaars's years of experience in the electronics industry and his extensive research involving semiconductors qualify him to serve on our board of directors.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A current copy of our code is posted on our website, which is located www.smartkem.com. We intend to disclose future amendments to certain provisions of our code of business conduct and ethics, or waivers of such provisions applicable to any principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, and our directors, on our website identified above or in filings with the SEC.

Director Independence

Our securities are not listed on a national securities exchange or on any inter-dealer quotation system that has a requirement that a majority of directors be independent. We evaluate independence by the standards for director independence set forth in the Nasdaq Marketplace Rules. Under such rules, our board of directors has determined that all current members of the board of directors, except Mr. Jenks and Ms. Keck, are independent directors. Neither Mr. Jenks nor Ms. Keck are independent directors under these rules because they are executive officers of the Company. Robert Bahns, who resigned from the board of directors in September of 2022, was not an independent director, because he was an executive officer

of the Company. Simon King, who served as a director until our 2022 annual meeting of stockholders, was an independent director. In making such independence determination, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our board of directors considered the association of our directors with the holders of more than 5% of our common stock. There are no family relationships among any of our directors and executive officers. At the time, if any, that shares of our common stock are listed on Nasdaq or another national securities exchange, we intend to comply with any applicable requirements of such exchange with respect to the composition of our board of directors.

Classified Board of Directors

In accordance with the terms of our amended and restated certificate of incorporation, our board of directors is divided into three staggered classes of directors as follows:

- Class I director is Mr. DenBaars;
- Class II director is Mr. de Boer; and
- Class III directors are Mr. Jenks and Ms. Keck.

At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2025 for the Class I director, 2023 for the Class II director and 2024 for Class III directors.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the number of directors will be fixed from time to time by a resolution of a majority vote of the directors then in office. Any increase or decrease in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the total number of our directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

Board Committees

As our common stock is not presently listed for trading or quotation on a national securities exchange, we are not presently required to have board committees. However, our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which operates pursuant to a charter adopted by the board of directors. Members serve on these committees until their resignation or until otherwise determined by the board of directors. The composition and functioning of all of our committees complies with all applicable requirements of the Sarbanes-Oxley Act and SEC rules and regulations and, at the time, if any, that shares of our common stock are listed on Nasdaq or another national securities exchange, we intend to comply with any applicable requirements of such exchange with respect to the composition of our committees of the board of directors.

Audit Committee

Mr. DenBaars and Mr. de Boer serve on the audit committee, which is chaired by Mr. de Boer. Our board of directors has determined that each has sufficient knowledge in financial and auditing matters to serve on the audit committee and that each are “independent” for audit committee purposes as that term is defined under SEC and Nasdaq Marketplace Rules. Prior to her employment as our Chief Financial Officer, the board of directors had designated Ms. Keck as an “audit committee financial expert,” as defined under the applicable rules of the SEC. At the time she became our Chief Financial Officer, Ms. Keck no longer met the independence requirements for membership on the audit committee and stepped down as a member. As a result, the audit committee currently does not have an “audit committee financial expert.” At the time, if any, that shares of our common stock are listed on Nasdaq or another national securities exchange, we intend to comply with any applicable requirements of such exchange with respect to the composition of our audit committee, including the requirement to have an “audit committee financial expert.”

The audit committee's responsibilities include, but are not limited to:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending, based upon the audit committee's review and discussions with management and our independent registered public accounting firm, whether our audited financial statements will be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and making recommendations to our board of directors regarding all such transactions; and
- reviewing earnings releases.

Compensation Committee

Mr. DenBaars and Mr. de Boer serve on the compensation committee, which is chaired by Mr. DenBaars. Our board of directors has determined that each member of the compensation committee is "independent" as defined under the Nasdaq Marketplace Rules. The compensation committee's responsibilities include, but are not limited to:

- annually reviewing and approving the corporate goals and objectives to be considered in determining the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and based on such evaluation: (i) recommending to the board of directors the cash compensation of our Chief Executive Officer and (ii) reviewing and recommending to the independent directors on the board of directors regarding grants and awards to our Chief Executive Officer under equity-based plans;
- reviewing and approving the cash compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;
- evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the Nasdaq Marketplace Rules;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- reviewing and recommending to the board of directors the compensation of our directors;
- preparing the compensation committee report required by SEC rules, if and when required, to be included in our annual proxy statement; and

- reviewing and approving the retention, termination or compensation of any consulting firm or outside advisor to assist in the evaluation of compensation matters.

Nominating and Corporate Governance Committee

Mr. de Boer and Mr. DenBaars serve on the nominating and corporate governance committee, which is chaired by Mr. de Boer. Our board of directors has determined that each member of the nominating and corporate governance committee is “independent” under the Nasdaq Marketplace Rules.

The nominating and corporate governance committee’s responsibilities include, but are not limited to:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board’s committees;
- periodically reviewing and reassessing the adequacy of the code of business conduct and ethics and the corporate governance guidelines; and
- overseeing the evaluation of our board of directors and management.

Our board of directors may, from time to time, establish other committees.

Item 11. Executive Compensation

Summary Compensation Table

From our inception to the closing of the Exchange, no compensation was earned by or paid to our executive officers. SmartKem Limited became our wholly owned subsidiary upon the closing of the Exchange on February 23, 2021, and its senior management became our senior management. The following table shows the compensation awarded to or earned by our principal executive officer during the fiscal year ended December 31, 2022 and December 31, 2021, our two other most highly compensated executive officers who were serving as executive officers as of December 31, 2022 and December 31, 2021, and up to two additional individuals for whom disclosure would have been provided but for the fact that the individual was not serving as an executive officer as of December 31, 2022. The persons listed in the following table are referred to herein as the “named executive officers.”

Officer Name and Principle Position	Year	Salary	Bonus	Option Awards ⁽¹⁾	All Other Compensation ⁽²⁾	Total
		\$	\$	\$	\$	\$
Ian Jenks	2022	313,500	76,500	156,840	22,093	568,933
<i>Chief Executive Officer</i>	2021	294,379	179,881	611,775	20,787	1,106,822
Beverly Brown ⁽³⁾	2022	217,163	41,053	47,052	—	305,268
<i>Chief Scientist</i>	2021	236,101	74,321	543,617	—	854,039
Simon Ogier	2022	165,051	60,575	191,180	12,033	428,838
<i>Chief Technology Officer</i>	2021	163,790	20,474	—	9,830	194,094

(1) The amounts reported represent the aggregate grant-date fair value of the stock options awarded to the named executive officer, calculated in accordance with ASC 718. Such grant-date fair value does not take into account any estimated forfeitures related to service-based vesting conditions.

- (2) Represents our contributions to our workplace pension scheme and private healthcare insurance.
- (3) Represents consulting fees paid to Dr. Brown's consulting company.

In accordance with the U.K. Pensions Act 2008 (the "Pensions Act"), we have established a workplace pensions scheme available for all our employees in the UK, which is equivalent to a defined contribution plan. In accordance with the Pensions Act, all eligible employees are automatically enrolled upon joining our company unless they advise they wish to opt out. As defined by the Pensions Act, the current required contributions are 5% employee and 3% employer. We match employee contributions to a maximum of 6% of base salary. Contributions made by us vest immediately.

Employment and Change in Control Agreements

We have entered into an employment agreement with Mr. Jenks (the "Jenks Employment Agreement") dated as of February 23, 2021 (the "Commencement Time") setting forth the terms and conditions of his employment and his expectations as our Chief Executive Officer and President. The Jenks Employment Agreement provides, among other things, for: (i) a term of three years beginning from the Commencement Time, subject to automatic renewal for successive one year terms unless either party provides sixty (60) days prior written notice of its intent not to renew; (ii) an annual base salary of \$300,000; (iii) eligibility for an annual bonus having a target of 30% of his then base salary; and (iv) in the event that Mr. Jenks' employment is terminated without "cause" or he resigns "for good reason" (each as defined in the Jenks Employment Agreement), or his employment is terminated at the end of the any term, as the result of our company providing notice of non-renewal, subject to execution and non-revocation of a release of claims in our favor, Mr. Jenks' will be eligible for: (a) payments equal to six (6) months of Mr. Jenks' base salary (at the rate in effect immediately prior to the date of termination), less applicable withholdings and authorized deductions, to be paid in equal installments in accordance with our customary payroll practices), (b) a pro-rata bonus for the year of termination and (c) in the event Mr. Jenks timely elects to continue his health insurance employee benefits pursuant to COBRA, monthly payments equal to the applicable COBRA costs for a period of six (6) months. Mr. Jenks is subject to non-compete and non-solicit provisions, which applies during the term of his employment and for a period of 12 months following termination of his employment for any reason. The Jenks Employment Agreement also contains customary confidentiality and assignment of inventions provisions.

We entered into a consultancy agreement with B Brown Consultants Ltd, Dr. Brown's consultancy company, dated as of February 23, 2021 (the "Brown Consultancy Agreement"). The Brown Consultancy Agreement provides, among other things, for: (i) Dr. Brown (or, with the approval of our board a substitute) is to provide defined services to SmartKem; (ii) the Brown Consultancy Agreement will continue for a fixed term of three years unless terminated (a) by either party giving not less than 12 months' prior notice in writing, or (b) by SmartKem for "cause"; and (iii) a monthly fee, payable monthly in arrears within 30 days of receipt of an invoice, by reference to daily rate of \$1,119 plus applicable value added taxes and an hourly rate of \$139.90 plus applicable value added taxes. SmartKem also agreed to reimburse certain expenses incurred in connection with the services to be provided under the Brown Consultancy Agreement.

We entered into a service agreement with Dr. Ogier, dated as of February 23, 2021 (the "Ogier Employment Agreement"). The Ogier Employment Agreement provides, among other things, for: (i) a three-month Probationary Period whereby Dr. Ogier may be terminated at any time during such period upon one week's notice or payment in lieu of notice; (ii) upon the completion of the Probationary Period by Dr. Ogier, the Ogier Employment Agreement will continue until terminated (a) by either party giving not less than six months' prior notice in writing, (b) by SmartKem electing to make a "Payment in Lieu" whereby SmartKem pays to Dr. Ogier an amount equal to his salary which he would have been entitled to receive during the notice period referenced in clause (a), or (c) for "cause"; (iii) an annual base salary of \$163,788; and (iv) Dr. Ogier's participation in SmartKem's pension program and death in service (life insurance) scheme.

Outstanding Equity Awards at December 31, 2022

The following table presents information regarding the outstanding options held by each of our named executive officers as of December 31, 2022.

Name	Grant Date	Type	Option Awards		Option Exercise Price (\$)	Option Expiration Date ⁽¹⁾
			Number of Securities Underlying Unexercised Options (#)			
			Exercisable	Unexercisable		
Ian Jenks	3/31/2021	ISO	261,241	335,884	\$ 2.00	3/31/2031
	07/08/2022	ISO	—	150,000	\$ 2.00	07/08/2032
Beverly Brown ⁽²⁾	2/23/2021	NQSO	178,086	—	\$0.001	2/23/2031
	3/31/2021	ISO	81,633	104,968	\$ 2.00	3/31/2031
Simon Ogier	07/08/2022	NQSO	—	45,000	\$ 2.00	07/08/2032
	3/31/2021	EMI	81,633	104,969	\$ 2.00	3/31/2031
	07/08/2022	NQSO	—	45,000	\$ 2.00	07/08/2032

- (1) The expiration date shown is the normal expiration date and the latest date that options may be exercised subject to certain extraordinary events.
- (2) Consists of SmartKem Unapproved Options held by Dr. Brown's consulting company.

Director Compensation

The following table sets forth information concerning the compensation paid to our directors during 2022.

Director Name	Year	Cash Compensation	Stock Option Awards ⁽¹⁾	All Other Compensation	Total
		\$	\$	\$	\$
Barbra Keck ⁽²⁾	2022	34,239 ⁽³⁾	6,274	— ⁽⁴⁾	40,513
Klaas de Boer ⁽⁵⁾	2022	36,000	6,274	—	42,274
Steven DenBaars ⁽⁶⁾	2022	18,000	18,821	—	36,821
Simon King ⁽⁷⁾	2022	—	—	—	—

- (1) The amounts reported represent the aggregate grant-date fair value of the stock options awarded to the named executive officer, calculated in accordance with ASC 718. Such grant-date fair value does not take into account any estimated forfeitures related to service-based vesting conditions.
- (2) The aggregate number of shares of common stock underlying stock options outstanding as of December 31, 2022 held by Ms. Keck was 474,000. Options to purchase 450,000 shares of common stock were issued to Ms. Keck in connection with her appointment as our Chief Financial Officer.
- (3) Represents amounts paid for board service prior to Ms. Keck's appointment as our Chief Financial Officer on December 14, 2022.
- (4) Ms. Keck has served as our Chief Financial Officer since December 14, 2022. Pursuant to the Keck Employment Agreement, Ms. Keck is entitled to an annual base salary of \$300,000 and an annual bonus of up to 40% of her base compensation subject to achievement of key performance indicators as determined by the board of directors. Ms. Keck was not paid any additional compensation for her services as a director subsequent to her appointment as our Chief Financial Officer. Ms. Keck is currently an executive officer, but is not a "named executive officer."
- (5) The aggregate number of shares of common stock underlying stock options outstanding as of December 31, 2022 held by Mr. de Boer was 24,000.
- (6) The aggregate number of shares of common stock underlying stock options outstanding as of December 31, 2022 held by Mr. DenBaars was 18,000.
- (7) Dr. King served as a member of our board of directors until our 2022 annual meeting of stockholders, which occurred on June 30, 2022. The aggregate number of shares of common stock underlying stock options outstanding as of December 31, 2022 held by Dr. King was nil.

Robert Bahns resigned from the board of directors effective September 19, 2022 and had also served as our Chief Financial Officer until such time. Mr. Bahns was an executive officer of our Company, but is not a “named executive officer.” Mr. Bahns received no additional compensation for services provided as a director.

Non-Employee Director Compensation

On March 31, 2021, the board of directors, upon recommendation of the Compensation Committee, adopted a non-employee director compensation policy (the “Policy”), pursuant to which each non-employee director is entitled to receive an annual cash retainer of \$36,000. In addition, each non-employee director was initially granted options to purchase 18,000 shares of common stock, which will vest 25% on the one-year anniversary of the grant date and the remainder in equal monthly installments over three years and is entitled in each subsequent year to receive options to purchase 6,000 shares of common stock, which will vest on the one-year anniversary of the grant date. All equity awards granted pursuant to Policy are subject to the terms and conditions of the Company’s 2021 Equity Incentive Plan and/or the UK Tax-Advantaged Sub-Plan.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Securities Authorized for Issuance Under Equity Compensation Plans

General

The 2021 Equity Incentive Plan which includes a UK Tax-Advantaged Sub-Plan for employees of SmartKem based in the United Kingdom (the “2021 Plan”) was approved by our board of directors and stockholders on February 23, 2021. The general purpose of the 2021 Plan is to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to our employees, directors, and consultants, and to promote the success of our business.

The following table provides information with respect to our compensation plans under which equity compensation was authorized as of December 31, 2022.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column a) c ⁽²⁾
Equity compensation plans approved by security holders ⁽¹⁾ . .	2,829,756	\$1.81	447,607
Equity compensation plans not approved by security holders . . .	—	\$ —	—
Total	2,829,756	\$1.81	447,607

(1) The amounts shown in this row include securities under the 2021 Plan.

(2) In accordance with the “evergreen” provision in our 2021 Plan, an additional 1,079,399 shares were automatically made available for issuance on the first day of 2023, which represents 4.0% of the number of shares outstanding on December 31, 2022; these shares are excluded from this calculation.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of March 24, 2023, 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 directors and current executive officers as a group.

We have determined beneficial ownership in accordance with SEC rules. Except as indicated in the footnotes below, and subject to applicable community property laws, we believe, based on the information furnished to us, the persons and entities named in the table below have sole voting and investment power with respect to all shares shown as beneficially owned by them. The percentage of beneficial ownership is based on 27,034,996 shares of our common stock outstanding as of March 24, 2023. In computing the number of shares beneficially owned by a person or entity and the percentage ownership of that person or entity, we deemed to be outstanding all shares of our common stock as to which such person or entity has the right to acquire within 60 days of March 24, 2023, through the exercise of any option or other right. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person or entity. Unless otherwise noted below, the address of each beneficial owner named below is c/o SmartKem, Inc., Manchester Technology Center, Hexagon Tower, Delaunays Road, Blackley Manchester, M9 8GQ U.K.

Name of Beneficial Owner	Shares Beneficially Owned (#)	Percentage Beneficially Owned (%)
5% Stockholders:		
Octopus Investments Limited, 33 Holborn, London EC1N 2HT ⁽¹⁾	7,476,028	27.7%
Entrepreneurs Fund LP, 2nd Floor, Windward House, La Route de la Liberation, St Helier, Jersey, JE2 3BQ, The Channel Islands ⁽²⁾	3,585,252	13.3%
Orin Hirschman, 6006 Berkeley Ave., Baltimore, MD 21209 ⁽³⁾	2,532,500	9.4%
Mark Tompkins Apt. 1, Via Guidino 23, 6900 Lugano-Paradiso Switzerland	2,292,162	8.5%
Named Executive Officers and Directors:		
Ian Jenks ⁽⁴⁾	944,883	3.5%
Barbra C. Keck ⁽⁵⁾	9,375	*0%
Beverley Brown ⁽⁶⁾	295,276	1.1%
Simon Ogier ⁽⁷⁾	295,276	1.1%
Klaas de Boer ⁽⁸⁾	209,375	*0%
Steven DenBaars	25,000	*0%
All directors and current executive officers as a group (6 persons)	1,779,185	6.6%

* Less than 1%

- (1) Consists of 7,416,307 shares of our common stock held by Octopus Titan VCT Plc and 59,721 shares of our common stock held by Octopus Investments Nominees Limited (collectively, the “Octopus Funds”). Octopus Investments Limited (“Octopus”) is the sole manager of each of the Octopus Funds. Through Octopus’s position with Octopus Funds, Octopus is deemed to control the voting and disposition of the shares of our common stock held by the Octopus Funds. Octopus disclaims beneficial ownership of the shares of our common stock held by the Octopus Funds except to the extent of its pecuniary interest therein.
- (2) Consists of 3,585,252 shares of our common stock held by Entrepreneurs Fund LP (“Entrepreneurs Fund”). Entrepreneurs Fund General Partner Limited (the “Entrepreneurs General Partner”) is the general partner of the Entrepreneurs Fund. By virtue of such relationship, Entrepreneurs General Partner may be deemed to have voting and investment power with respect to the securities held by Entrepreneurs Fund. Entrepreneurs Fund General Partner disclaims beneficial ownership of the shares of our common stock held by Entrepreneurs Fund except to the extent of its indirect pecuniary interest therein.
- (3) Based upon information contained in a Schedule 13G/A filed by AIGH Capital Management, LLC (“AIGH CM”) and Mr. Orin Hirschman on February 15, 2023. Consists of shares of common our common stock held by AIGH Investment Partners, L.P. (“AIGH LP”), WVP Emerging Manger Onshore Fund, LLC (“WVP”) and by AIGH Investment Partners, LLC (“AIGH LLC”). Excludes pre-funded

warrants to purchase up to an aggregate of 2,130,500 shares of our common stock, none of which are exercisable within 60 days of March 14, 2021 as a result of the provisions contained therein which prevent the holder of such pre-funded warrants from exercising them if such exercise would result in the holders thereof, or certain related parties, having beneficial ownership of more than 9.99% of our common stock. Mr. Hirschman is the managing member of AIGH CM, which is an advisor or sub-advisor with respect to the securities held by AIGH LP and WVP, and president of AIGH LLC. Mr. Hirschman has voting and investment control over the securities indirectly held by AIGH CM and directly by AIGH LP and AIGH LLC.

- (4) Includes 633,880 shares of our common stock held and options to acquire 311,003 shares of our common stock exercisable within 60 days of March 24, 2023.
- (5) Consists of options to acquire 9,375 shares of our common stock exercisable within 60 days of March 24, 2023.
- (6) Includes 20,002 shares of our common stock held by B Brown Consultants Ltd and options to acquire 275,274 shares of our common stock exercisable within 60 days of March 24, 2023, held by Dr. Brown. Dr. Brown exercises dispositive and voting power over the securities owned by B Brown Consultants Ltd.
- (7) Includes 198,087 shares of our common stock held and options to acquire 97,189 shares of our common stock exercisable within 60 days of March 24, 2023.
- (8) Consists of 200,000 shares of our common stock purchased by Mr. de Boer's spouse in the Offering and options to acquire 9,375 shares of our common stock exercisable within 60 days of March 24, 2023.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The following is a description of transactions since January 1, 2021, and each currently proposed transaction in which:

- The Company (“we”) has been or is to be a participant;
- the amount involved exceeded or will exceed the lesser of \$120,000 or 1% of our total assets at year-end for our last two completed fiscal years; and
- any of our directors, executive officers or beneficial owners of more than 5% of our capital stock, or any immediate family member of, or person sharing the household with, any of these individuals or entities, had or will have a direct or indirect material interest, other than compensation and other arrangements that are described in the section titled “Executive Compensation.”

Service Agreement with Robert Bahns

On September 19, 2022, we entered into a service agreement with Robert Bahns pursuant to which Mr. Bahns provided advisory services to the Company on a part-time basis for a salary of £62,700 per annum. Mr. Bahns served as our Chief Financial Officer and as a member of our board of directors until September 19, 2022. Mr. Bahns no longer provides services to the Company.

Registration Rights Agreement

Following the closing of the Exchange, on February 23, 2021, we sold 10,162,000 shares of our common stock and pre-funded warrants to purchase up to 2,168,000 shares of our common stock for aggregate gross proceeds of \$24.6 million pursuant to a private placement offering of our common stock (or pre-funded warrants in lieu thereof) at a purchase price of \$2.00 per share or \$1.99 per pre-funded warrant, as applicable. Pursuant to the offering, we offered to certain purchasers whose purchase of shares of our common stock in the offering would otherwise have resulted in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the closing of the offering, the opportunity to purchase, if any such purchaser so chose, pre-funded warrants in lieu of shares of our common stock that would otherwise have resulted in such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock, at a purchase price of \$1.99 per pre-funded warrant. Each pre-funded warrant is exercisable for one share of our common stock at an exercise price of \$0.01 per share. In connection with the Exchange and the Offering, we entered into a registration

rights agreement (the “Registration Rights Agreement”), pursuant to which we agreed to file, no later than 60 calendar days from the closing of the Offering a registration statement covering, among other things, (i) the shares of our common stock issued in the Offering (including shares of our common stock issuable upon the exercise of the pre-funded warrants sold in the Offering); (ii) the shares of our common stock issuable upon exercise of the warrants issued to the placement agent in the Offering; (iii) the shares of our common stock issued or issuable as a result of the Exchange; (iv) 2,500,000 shares of our common stock held by the stockholders of Parasol prior to the Exchange; and (v) 50,000 shares of our common stock issued to certain advisors in connection with the Exchange and the Offering ((i)-(v) collectively, the “Registrable Shares”). We must use commercially reasonable efforts to keep such registration statement effective for the earlier of (i) five years from the date it is declared effective by the SEC, (ii) the date on which all Registrable Shares have been transferred other than to certain enumerated permitted assignees under the Registration Rights Agreement, or (iii) the date on which no Registrable Securities are outstanding. All of our directors, except Mr. DenBaars, executive officers and holders of more than 5% of our capital stock are parties to the Registration Rights Agreement.

Octopus Share Purchase

In connection with the Offering, we entered into an agreement (the “Octopus Letter Agreement”), with Octopus Titan VCT plc and certain related parties (the “Octopus Investors”), a holder of more than 5% of our common stock, pursuant to which the Octopus Investors agreed to purchase \$2.0 million of our common stock on the same economic terms as the shares of common stock sold in the Offering subject to the satisfaction of certain U.K related tax requirements (the “Octopus Share Purchase”). The Octopus Share Purchase was conditioned on, among other things, the requirement that our gross assets must be less than £15.0 million at the time of the purchase and less than £16.0 million after giving effect to the Octopus Share Purchase.

On January 27, 2022, we entered into a subscription agreement (the “Subscription Agreement”) with the Octopus Investors effecting the Octopus Share Purchase. Pursuant to the Subscription Agreement, we issued the Octopus Investors an aggregate of 1,000,000 shares of common stock (the “Octopus Shares”), at a purchase price of \$2.00 per share. On January 27, 2022, we also entered into a registration rights agreement (the “Octopus Registration Rights Agreement”) with the Octopus Investors, pursuant to which we agreed, subject to customary exceptions, to file, no later than fifteen (15) calendar days after we file our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, a registration statement with the SEC covering the Octopus Shares. We are required to use commercially reasonable efforts to cause such registration statement to be declared effective within 150 calendar days after the closing of the Octopus Share Purchase. We must use commercially reasonable efforts to keep such registration statement effective for the earlier of (i) five years from the date it is declared effective by the SEC, (ii) the date on which all Octopus Shares have been transferred other than to certain enumerated permitted assignees under the Octopus Registration Rights Agreement, or (iii) the date on which no Octopus Shares are outstanding.

Related Party Transactions with Parasol Investments Corporation

On May 14, 2020, in connection with advances made in connection with costs incurred by us, we issued a promissory note to Mark Tompkins, a stockholder and director of our company, pursuant to which we agreed to repay Mr. Tompkins the sum of any and all amounts that Mr. Tompkins may advance to us on or before the date that we consummate a business combination with a private company or reverse takeover transaction or other transaction after which we would cease to be a shell company (as defined in Rule 12b-2 under the Exchange Act). We have used the proceeds from the note to cover our expenses. Although Mr. Tompkins had no obligation to advance funds to us under the terms of the note, we anticipated that he might do so as fees and expenses were incurred. As a result, we issued the note in anticipation of such advances. Interest did not accrue on the outstanding principal amount of the note except if an Event of Default (as defined in the note) occurred. In the event of an Event of Default, the entire note would automatically become due and payable (the “Default Date”) and starting from five (5) days after the Default Date, interest on the note would accrue at the rate of eighteen percent (18%) per annum. The total amount due under the note was \$47,500 which was paid in full at the closing of the Exchange.

Prior to the closing of the Exchange, we used the office space and equipment of our management at no cost

Related Party Transactions with SmartKem Limited

On February 23, 2021, at the direction of the holders of A ordinary shares, which consisted of shares held by Octopus Titan VCT and Entrepreneurs Fund LP, beneficial owners of more than 5% of SmartKem Limited's capital stock, provided in accordance with SmartKem Limited's articles of association 876,884,527 A ordinary shares were reclassified as ordinary shares.

On February 23, 2021, conditional on the consummation of the Exchange, the holders of EMI Options covering 124,497,910 ordinary shares exercised them for \$18,916, with options covering 123,087,910 shares exercised at a price of \$0.000014 per share and the options covering the remaining 1,410,000 shares exercised at a price of \$0.0122 per share.

Policies and Procedures for Related Party Transactions

Our board of directors has adopted a policy that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock, any members of the immediate family of any of the foregoing persons and any firms, corporations or other entities in which any of the foregoing persons is employed or is a partner or principal or in a similar position or in which such person has a 5% or greater beneficial ownership interest (collectively "related parties"), are not permitted to enter into a transaction with us without the prior consent of our board of directors acting through the Audit Committee or, in certain circumstances, the chairman of the Audit Committee. Any request for us to enter into a transaction with a related party, in which the amount involved exceeds \$100,000 and such related party would have a direct or indirect interest must first be presented to our Audit Committee, or in certain circumstances the chairman of our Audit Committee, for review, consideration and approval. In approving or rejecting any such proposal, our Audit Committee, or the chairman of our Audit Committee, is to consider the material facts of the transaction, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances, the extent of the benefits to us, the availability of other sources of comparable products or services and the extent of the related party's interest in the transaction.

Director Independence

Our securities are not listed on a national securities exchange or on any inter-dealer quotation system that has a requirement that a majority of directors be independent. We evaluate independence by the standards for director independence set forth in the Nasdaq Marketplace Rules. Under such rules, our board of directors has determined that all current members of the board of directors, except Mr. Jenks and Ms. Keck, are independent directors. Neither Mr. Jenks nor Ms. Keck are independent directors under these rules because they are executive officers of the Company. Robert Bahns, who resigned from the board of directors in September of 2022, was not an independent director, because he was an executive officer of the Company. Simon King, who served as a director until our 2022 annual meeting of stockholders, was an independent director. In making such independence determination, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our board of directors considered the association of our directors with the holders of more than 5% of our common stock. There are no family relationships among any of our directors and executive officers. At the time, if any, that shares of our common stock are listed on Nasdaq or another national securities exchange, we intend to comply with any applicable requirements of such exchange with respect to the composition of our board of directors.

Item 14. Principal Accountant Fees and Services

Principal Accountant Fees and Services

The following table summarizes the fees paid for professional services rendered by BDO LLP, our independent registered public accounting firm, for each of the last two fiscal years:

US\$(000)	For the Years End December 31,	
	2022	2021
Audit fees	\$368	\$456
Audit-related fees	—	—
Tax fees	—	10
All other fees	—	—
Total	<u>\$368</u>	<u>\$466</u>

Audit Fees

Represents fees, including out of pocket expenses, for professional services provided in connection with the audit of our annual financial statements, the review of our quarterly financial statements, accounting consultations or advice on accounting matters necessary for the rendering of an opinion on our financial statements, services provided in connection with the offerings of our securities and audit services provided in connection with other statutory or regulatory filings.

Tax Fees

Tax fees represent fees billed for tax compliance and consultation and planning services.

Procedures for Approval of Fees

The Audit Committee is responsible for appointing, setting compensation and overseeing the work of the independent auditors. The Audit Committee has established a policy regarding pre-approval of all auditing services and the terms thereof and non-audit services (other than non-audit services prohibited under Section 10A(g) of the Exchange Act or the applicable rules of the SEC or the Public Company Accounting Oversight Board) to be provided to us by the independent auditor. However, the pre-approval requirement may be waived with respect to the provision of non-audit services for us if the “de minimums” provisions of Section 10A(i)(1)(B) of the Exchange Act are satisfied.

The Audit Committee has considered whether the provision of Audit-Related Fees, Tax Fees, and all other fees as described above is compatible with maintaining BDO LLP’s independence and has determined that such services for fiscal year 2021 were compatible. All such services were approved by the Audit Committee pursuant to Rule 2-01 of Regulation S-X under the Exchange Act to the extent that rule was applicable.

The Audit Committee is responsible for reviewing and discussing the audited financial statements with management, discussing with the independent registered public accountants the matters required in Auditing Standards No. 16, receiving written disclosures from the independent registered public accountants required by the applicable requirements of the Public Company Accounting Oversight Board regarding the independent registered public accountants’ communications with the Audit Committee concerning independence and discussing with the independent registered public accountants their independence, and recommending to our board of directors that the audited financial statements be included in our annual report on Form 10-K.

PART IV

Item 15. Exhibit and Financial Statement Schedules

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

1. Financial Statements: See Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules: All schedules are omitted because they are not required, are not applicable or the information is included in the consolidated financial statements or notes thereto.

(b) The following exhibits are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

See Exhibit Index.

EXHIBIT INDEX

Exhibit No.	Description
2.1*	Share Exchange Agreement, dated as of February 23, 2021, among the Registrant, SmartKem Limited and the shareholders of SmartKem Limited (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on February 24, 2021)
3.1	Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.3 to the Company's Current Report on Form 8-K filed on February 24, 2021)
3.2	Amended and Restated Bylaws of the Registrant, as currently in effect (incorporated by reference to Exhibit 3.4 to the Company's Current Report on Form 8-K filed on February 24, 2021)
4.1	Form of Registration Rights Agreement (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on February 24, 2021)
4.2	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on February 24, 2021)
4.3	Form of Placement Agent Warrant (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on February 24, 2021)
4.4	Description of Securities (incorporated by reference to Exhibit 4.4 to the Company's Annual Report on Form 10-K filed on March 28, 2022)
10.1*	Engagement Letter, dated December 15, 2020, by and between GP Nurmenkari Inc. and SmartKem Limited (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.2#	2021 Equity Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.3#	U.K. Tax Advantaged Sub-Plan (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.4	Form of Lock-Up Agreement (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.5*	Form of Subscription Agreement (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.6#	Employment Agreement, dated as of February 23, 2021, by and between the Registrant and Ian Jenks (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.7#	Employment Agreement, dated as of February 23, 2021, by and between SmartKem Limited and Robert Bahns (incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.8#	Employment Agreement, dated as of February 23, 2021, by and between SmartKem Limited and Simon Ogier (incorporated by reference to Exhibit 10.8 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.9#	Consultancy Agreement, dated as of February 23, 2021, by and between SmartKem Limited and B Brown Consultants Ltd. (incorporated by reference to Exhibit 10.9 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.10*	License of Office Space, dated September 16, 2020, by and between SmartKem Limited and CPI Innovation Services Limited (incorporated by reference to Exhibit 10.10 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.11*	License of Office Space, dated April 21, 2020, by and between SmartKem Limited and CPI Innovation Services Limited (incorporated by reference to Exhibit 10.11 to the Company's Current Report on Form 8-K filed on February 24, 2021)

Exhibit No.	Description
10.12* **	Lease of The Whole of the 8 th Floor, Hexagon Tower, Manchester, M9 8GP, dated April 16, 2019, between AG Hexagon BV and SmartKem Limited. (incorporated by reference to Exhibit 10.12 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.13**	Framework Services Agreement, dated February 23, 2021, by and between SmartKem Limited and CPI Innovation Services Limited (incorporated by reference to Exhibit 10.13 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.14	Facility Agreement, dated January 26, 2021, by and between SmartKem Limited and FRCF 2 Limited (incorporated by reference to Exhibit 10.14 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.15	Debenture Agreement, dated January 26, 2021, by and between SmartKem Limited and FRCF 2 Limited (incorporated by reference to Exhibit 10.15 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.16	Form of Director and Officer Indemnification Agreement (incorporated by reference to Exhibit 10.16 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.17	Form of Pre-Exchange Indemnity Agreement (incorporated by reference to Exhibit 10.17 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.18	Letter Agreement, dated as of February 23, 2021, among the Registrant and Octopus Titan VCT plc and certain related parties (incorporated by reference to Exhibit 10.18 to the Company's Current Report on Form 8-K filed on February 24, 2021)
10.19	Subscription Agreement, dated January 27, 2022, by and between the Company and the Purchasers (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 27, 2022)
10.20	Registration Rights Agreement, dated January 27, 2022, by and between the Company and the Purchasers (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on January 27, 2022)
10.21**	Contract Variation relating to the Framework Services Agreement, dated February 23, 2021, by and between SmartKem Limited and CPI Innovation Services Limited (incorporated by reference to Exhibit 10.21 to the Company's Current Report on Form 10-K/A filed on August 23, 2022)
10.22* **	Renewal Lease by Reference of Lease of The Whole of the 8th Floor, Hexagon Tower, Manchester, M9 8GP, dated April 12, 2022, between AG Hexagon BV and SmartKem Limited (incorporated by reference to Exhibit 10.3 on the Company's Quarterly Report on Form 10-Q filed on May 13, 2022)
10.23#	Service Agreement, dated September 7, 2022, by and between SmartKem Limited and Nigel Prue. (incorporated by reference to Exhibit 10.1 on the Company's Current Report on Form 8-K filed September 8, 2022)
10.24#	Service Agreement, dated September 19, 2022, by and between SmartKem Limited and Robert Bahns (incorporated by reference to Exhibit 10.1 on the Company's Current Report on Form 8-K filed September 19, 2022)
10.25†	Employment Agreement, dated as of December 14, 2022, by and between the Registrant and Barbra Keck
21.1†	List of Subsidiaries
23.1†	Consent of BDO LLP, independent register public accounting firm (BDO LLP: London, United Kingdom: PCAOB ID # 1295)
31.1†	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2†	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

Exhibit No.	Description
32.1††	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2††	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS†	Inline XBRL Instance Document — the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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 in Inline XBRL and contained in Exhibit 101)

* Annexes, schedules and/or exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally a copy of any of the omitted schedules and exhibits to the SEC on a confidential basis upon request.

† Filed herewith.

†† This certification is not deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the registrant specifically incorporates it by reference.

Indicates management contract or compensatory plan.

** Portions of the exhibit, marked by brackets, have been omitted because the omitted information (i) is not material and (ii) would likely cause competitive harm if publicly disclosed. The Registrant hereby undertakes to furnish supplementally a copy of any of the omitted schedules and exhibits to the SEC on a confidential basis upon request.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, duly authorized.

Date: March 30, 2023

SMARTKEM, INC.

By: /s/ Ian Jenks

Name: Ian Jenks
Title: Chief Executive Officer and Chairman
of the Board (Principal Executive Officer)

By: /s/ Barbra C. Keck

Name: Barbra C. Keck
Title: Chief Financial Officer
(Principal Financial Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Ian Jenks and Barbra C. Keck, jointly and severally, his or her true and lawful attorneys-in-fact and agent, each with the power of substitution, for him in any and all capacities, to sign any amendments to this report, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Ian Jenks</u> Ian Jenks	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	March 30, 2023
<u>/s/ Barbra C. Keck</u> Barbra C. Keck	Chief Financial Officer and Director (Principal Financial Officer)	March 30, 2023
<u>/s/ Klaas de Boer</u> Klaas de Boer	Director	March 30, 2023
<u>/s/ Steven DenBaars</u> Steven DenBaars	Director	March 30, 2023

Subsidiaries of Registrant

SmartKem Limited, a company incorporated under the laws of England and Wales

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

SmartKem, Inc.
Manchester, United Kingdom

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-269557, 333-264184, 333-254904) of our report dated March 30, 2023 relating to the consolidated financial statements of SmartKem, Inc., which appears in the Annual Report on Form 10-K. Our report contains an explanatory paragraph regarding SmartKem, Inc.'s ability to continue as a going concern.

/s/ BDO LLP

BDO LLP
Manchester, United Kingdom

March 30, 2023

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Ian Jenks, certify that:

1. I have reviewed this annual report on Form 10-K of SmartKem, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal controls over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2023

/s/ Ian Jenks

Ian Jenks
Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Barbra Keck, certify that:

1. I have reviewed this annual report on Form 10-K of SmartKem, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal controls over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2023

/s/ Barbra Keck

Barbra Keck
Chief Financial Officer

**Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with this Annual Report of SmartKem, Inc. (the “Company”) on Form 10-K for the year ended December 31, 2022 (the “Report”) as filed with the Securities and Exchange Commission on the date hereof, the undersigned, Ian Jenks, Chief Executive Officer of the Company, hereby certifies, to the knowledge of the undersigned, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 30, 2023

/s/ Ian Jenks

Ian Jenks

Chief Executive Officer

**Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with this Annual Report of SmartKem, Inc. (the “Company”) on Form 10-K for the year ended December 31, 2022 (the “Report”) as filed with the Securities and Exchange Commission on the date hereof, the undersigned, Barbra Keck, Chief Financial Officer of the Company, hereby certifies, to the knowledge of the undersigned, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 30, 2023

/s/ Barbra Keck

Barbra Keck

Chief Financial Officer

