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 , 2023

☐ **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: 1-16525

CVD EQUIPMENT CORPORATION
(Exact name of registrant as specified in its charter)

New York	**11-2621692**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*

355 South Technology Drive Central Islip , New York 11722
(Address including zip code of registrant's Principal Executive Offices)

(631) 981-7081
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par value $0.01	**CVV**	**NASDAQ Capital Market**

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

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 13or 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 ☒

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: $ 48,002,094 at June 30, 2023.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date: 6,824,511 shares of Common Stock, $0.01 par value at March 25, 2024.

DOCUMENTS INCORPORATED BY REFERENCE: None .

INFORMATION CONCERNING FORWARD-LOOKING STATEMENTS

Except for historical information contained herein, this Annual Report on Form 10-K contains forward–looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. Readers are cautioned not to place undue reliance on forward-looking statements, as there can be no assurance that the plans, intentions or expectations upon which they are based will occur. These statements involve known and unknown risks and uncertainties that may cause our actual results or outcomes to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These forward-looking statements are based on various factors and are derived utilizing numerous important assumptions and other important factors that could cause actual results to differ materially from those in the forward-looking statements. Important assumptions and other factors that could cause actual results to differ materially from those in the forward-looking statements, include, but are not limited to:

- *competition in our existing and potential future product lines of business, including our PVT150 / PVT 200 systems;*
- *our ability to attract and retain key personnel and employees;*
- *our ability to obtain financing on acceptable terms if and when needed;*
- *uncertainty as to our ability to develop new products for the high power electronics market including our plan to commercialize and market a PVT200 to grow silicon carbide crystals for 200 mm wafers;*
- *uncertainty as to our future growth and profitability; and*
- *uncertainty as to our ability to adequately obtain raw materials and on commercially reasonable terms.*

Other factors and assumptions not identified above were also involved in the derivation of these forward-looking statements and the failure of such assumptions to be realized as well as other factors may also cause actual results to differ materially from those projected. We assume no obligation to update these forward-looking statements to reflect actual results, changes in assumptions, or changes in other factors affecting such forward-looking statements. Past performance is no guaranty of future results.

You should not place undue reliance on any forward-looking statements, which speak only as of the dates they are made. When used with this Report, the words "believes", "anticipates", "expects", "estimates", "plans", "intends", "will" and similar expressions are intended to identify forward-looking statements.

Item 1. <u>Description of Business.</u>

<u>Definitions</u>

The use of the words "CVD," "we," "us," or "our," refers to CVD Equipment Corporation, a New York corporation incorporated on October 13, 1982, and its wholly owned subsidiaries, CVD Materials Corporation (including its wholly owned subsidiaries, and CVD MesoScribe Technologies Corporation and Tantaline CVD Holding ApS, collectively "CVD Materials"), and FAE Holdings 411519R LLC except where the context otherwise requires.

<u>Overview</u>

CVD has served the advanced materials markets with chemical vapor deposition, physical vapor transport and thermal process equipment for over 40 years. We are headquartered in Central Islip, New York with one other location in Saugerties, New York.

We design, develop, and manufacture a broad range of equipment used to develop and manufacture materials and coatings for the compound semiconductor, semiconductor, aerospace, battery energy storage markets as well as advanced industrial applications, and research.

We conduct our business through three reportable operating segments: i) CVD Equipment that supplies chemical vapor deposition, physical vapor transport and thermal process equipment; ii) SDC that designs and manufactures ultra-high purity gas and chemical delivery control systems; and iii) CVD Materials that provide products related to advanced materials and coatings.

<u>Developments</u>

On May 26, 2023, we sold our Tantaline subsidiary located in Nordborg, Denmark in exchange for a nominal amount at closing and an earn-out provision based on any net income that Tantaline may earn during the five-year period ending December 31, 2027. The decision to sell Tantaline was based on our ongoing strategy to focus on the equipment business consisting of the CVD Equipment and SDC segments and reduce its focus on the non-core CVD Materials business.

On August 8, 2023, we entered into an agreement with a third party to sell certain assets and license certain propriety information of MesoScribe. We will continue to fulfill remaining orders for MesoScribe products through the end of 2024 at which time we plan to cease the remaining operations of MesoScribe and dispose of any remaining equipment.

The decisions to sell our Tantaline subsidiary and wind down the operations of MesoScribe were based on our ongoing strategy to focus on the equipment business consisting of the CVD Equipment and SDC segments.

<u>Key Company Strengths</u>

Based on more than 40 years of equipment experience, we use our capabilities in process development, engineering, and vertical manufacturing to transform emerging applications into mainstream manufacturing solutions.

We have built a library of design expertise, know-how and innovative solutions to assist our customers in developing these intricate processes and to accelerate their production and commercialization. This library of equipment design solutions, along with our manufacturing and systems integration facilities, allows us to provide application-specific design, process, and manufacturing solutions to our customers.

Our core competencies in equipment and software design, manufacturing and process development are used to engineer our finished products and to accelerate the commercialization path of our customer base. Our proprietary real-time software allows for rapid configuration, and provides our customers with enabling tools to understand, optimize and repeatedly control their processes. These factors reduce cost, improve quality, and reduce the time it takes between customers' orders and the shipment of our products. Our Application Laboratory allows customers the option to bring their process tools to our laboratory and to work collaboratively with our scientists and engineers to optimize process performance.

To expand our presence into our major target markets, we are developing a line of proprietary standard use products to complement our customized legacy systems. Historically, we manufactured products for research and development on an application-specific basis to meet an individual customer's specific research and production requirements. Our proprietary systems leverage the technological expertise that we have developed through designing these custom systems into a broader standardized product line. The standard product line can be configured from a wide range of available options to meet diverse product and budgetary requirements. Manufacturing these standardized systems in higher volumes may provide us the flexibility to reduce both the cost and delivery time of our systems. These systems, which we market and sell under the CVD, FirstNano and EasyTube® product names, are sold to commercial companies, universities and research laboratories in the United States and throughout the world.

Sales of our proprietary standard systems, custom systems and process solutions have been driven by our installed customer base, which includes Fortune 500 companies. The performance and success of our products has historically driven repeat orders from existing customers as well as generated business from new customers. Furthermore, with our proprietary solutions and expanded focus on "*enabling tomorrow's technologies*"™ we have been developing a new customer base in addition to growing with our existing customers.

Key Growth Strategies

Our core strategy is to focus on growth market applications in end markets related to the "electrification of everything," aerospace and industrial applications. The phrase "electrification of everything" refers to the shift from fossil fuels to the use of electricity to power devices, buildings, electric vehicles ("EVs"), and many other applications. With respect to aerospace, our systems are being used by our customers to produce ceramic matrix composite materials ("CMCs") that will be used in next generation gas turbine jet engines with the objective of reducing jet fuel consumption and contributing to the decarbonization of that industry.

Our current strategy yielded multisystem orders of PVT150 equipment that was delivered to one company that manufactures silicon carbide wafers.

In February 2024, we received an order from an additional customer for our new PVT200 system used to grow silicon carbide crystals for the manufacture of 200 mm wafers. This represents our second customer for our PVT equipment. This customer plans to evaluate our equipment for potential additional purchases of PVT equipment. We have also received orders from OneD Battery Materials in 2023, a company that is engaged in providing battery nanomaterials.

Both technologies are essential for the support of the EV market. These systems should provide us with standard product offering to continue to support the EV focused market as well as energy storage, power conversion and power transmission. We plan to expand our product offerings in the power electronics market to build off the introduction of the PVT150 and PVT200 systems. We are also evaluating our ability to provide other equipment used in the manufacturing process of silicon carbide wafers.

During 2022, we also received an order from an aerospace company for a production chemical vapor infiltration (CVI) system that will be used to manufacture CMCs for gas turbine jet engines. In 2023, we received an order from the same aerospace company for an additional three CVI systems.

In February 2024, we received a multisystem order from an industrial customer for approximately $10 million that will be used for depositing a silicon carbide protective coating on OEM components.

We have generally gained new customers through our industry reputation, as well as limited print advertising and trade show attendance. We have increased the number of trade shows and industry conferences in 2023. In addition, we added to our sales and marketing team in 2022 and expanded our sales team in early 2023.

Major Target Markets

Our major target markets are high power electronics, EV battery materials / energy storage and aerospace, defense and industrial applications – all of which have the objective of improving energy efficiency.

High Power Electronics

Demand for silicon carbide wafers to support high power electronics for energy storage and transmission/charging resulted in a multi-system order from a US-based, silicon carbide wafer manufacturer. Through December 31, 2023, we have received and delivered orders for 30 of our PVT150 physical vapor transport systems from one customer, which uses our systems to grow silicon carbide crystals that are made into 150 mm silicon carbide wafers for use in power electronics. In late 2023, we launched our PVT200 system designed to manufacture silicon carbide crystals for 200 mm wafer and received our first order from a second customer. We plan to expand our marketing and future product development for the PVT product line as well as expand our product offerings to manufacturers of silicon carbide wafers.

EV Battery Materials / Energy Storage

We have experienced increased interest and demand for nanotechnology materials including carbon nanotubes (CNTs), graphene and silicon nanowires (Si-NWs) to support the development and manufacturing for battery materials used in electric vehicles. We received two system orders in 2021 to deposit coatings onto powders used in silicon-graphite anodes, including a production system and a second for research and material development. We received additional system orders from this customer in 2023 that were completed during 2023.

Aerospace & Defense

CVD is a leading manufacturer of CVI and tow-coating systems to manufacture CMCs for aerospace gas turbine jet engine applications. Our customers include two of the leaders in aerospace gas turbine engines.

We continue to engage customers in the aerospace market regarding CMCs. During 2022, we received an order for a production CVI system valued at approximately $3.7 million. We received an additional order for three CVI systems during 2023 from the same customer. These systems will be used to manufacture CMCs for aerospace gas turbine jet engines.

We believe our future growth will be derived from production applications in our major target markets. Our legacy product line continues to provide advanced equipment and subsystems to enable development of emerging technology and research applications.

Our major targeted markets are further described as follows (the term "legacy product" refers to products and systems within our product offerings that we have produced in our history):

Major Target Markets:	***Description and Growth Drivers:***	***CVD Equipment Products and Services:***
High Power Electronics	The shift to electrification has the objectives of reducing emissions and reducing dependency on fossil fuels. This has driven the demand for electric vehicle and associated high power electronics used in charging and motor power conversion.	**Production Applications:** - PVT150 SiC crystal growth system launched in 2022. - PVT200 SiC crystal growth system launched in 2023. - HVPE400: polycrystalline GaN (legacy product).
EV Battery Materials / Energy Storage	The shift to electrification also requires improvements in energy storage, specifically with the use of novel anode materials.	**Production Applications:** - PowderCoat-1100 production system launched in 2021 grows Si nanowires on carbon nanoparticles. - Carbon-150: Single substrate system for CNT growth. Versatile substrate format, on wafer or foil. - Carbon-300: Multiple substrate batch tube system for CNT growth. Versatile substrate format, on wafer or foil. **R&D Applications:** - ET-3000: Versatile CNT growth system for research and development.
Aerospace, Defense and Industrial	Next generation gas turbine jet engines are incorporating CMC material for the hot section or exhaust of the engine to improve fuel efficiency. Silicon carbide coating is use as a protective barrier in many OEM components used in LED and other applications.	**Production and R&D Applications:** - Fiber tow coat system. Mass production system for multi-layer coating for CMCs. - Silicon bond coat environmental barrier depositing system. Deposits Si on machined gas turbine jet engine CMC components and other OEM components. - Chemical Vapor Deposition/ Chemical Vapor Infiltration production coating system for multi-layer CMC coatings on SiC fiber preforms.

Other Markets	***CVD Equipment Products:***
	- Universal liquid and gas storage cabinets, management, and delivery systems (SDC segment). - Production MOCVD Super Conducting Tape system. - ET-3000: MOCVD for compound semiconductor R&D. - ET-3000 for graphene. - ET-6000: Multi-Tube Chemical Vapor Deposition Tube furnace (metals, oxides and nitrides). - PowderCoat-300 for powder material R&D (including battery anode). - TMD: cluster tool for advanced material development.

Our wholly owned subsidiary, CVD Materials Corporation, includes our MesoScribe product lines. Our MesoScribe product line supports the aerospace and defense markets with novel robust direct write instrumentation. We plan to wind down the operations of MesoScribe in 2024 after satisfaction of customer purchase orders.

Bookings

During 2023, bookings of new orders from customers was approximately $25.8 million, representing a decrease of approximately 22.1% compared to 2022 bookings of $33.1 million. The decline in bookings was related to $8.8 million of orders of PVT150 systems that were received in 2022 as compared to no such orders in 2023.

Segments

CVD Equipment - supplies state-of-the-art chemical vapor deposition and thermal process equipment targeting growth production markets as well as systems for use in research and development. This includes systems marketed under the FirstNano product brand. Utilizing our over 40 years of expertise in the design and manufacture of chemical vapor deposition and thermal process equipment, we provide material processing capability and control at a competitive cost of ownership.

The targeted growth production markets include high power electronics (both silicon carbide (SiC) and gallium nitride (GaN)), aerospace advanced materials primarily for gas turbine jet engines, and nanomaterials used in batteries. The product group also consists of legacy products serving the production and R&D applications such as semiconductors, LEDs, carbon nanotubes, nanowires, solar cells and a number of other industrial & research applications.

Our developments and opportunities for the carbon composite business come from achievements in our Applications Laboratory. The Applications Laboratory, along with the sales and marketing team continue to explore carbon-based products and applications that can be made from our CNT, infiltrated carbon/CVI and carbon nano fiber technology (CNF). Some applications include CNT and infiltrated carbon/CVI based battery material and CNF capacitors for 5G technology.

To support new emerging applications, we provide equipment to and collaborate with laboratory scientists to bring state-of-the-art processes from the research laboratory into production. CVD Equipment group provides process development value through our Application Laboratory where our personnel interact directly with the scientists and engineers of our customer base to develop solutions to tomorrow's challenges today. CVD Equipment segment operates from our 135,000 sq. ft. facility in Central Islip, New York.

SDC - designs and manufactures ultra-high purity gas and chemical delivery control systems for state-of-the-art semiconductor fabrication processes, aerospace, solar cells, LEDs, carbon nanotubes, nanowires, and a number of industrial applications. Our SDC products are sold on a stand-alone basis and are also integrated into certain CVD equipment. This internal supply of chemical and gas delivery systems and components provide a competitive advantage for our CVD Equipment group over its competition. SDC operates from a 22,000 square foot facility fitted with a clean room manufacturing space located in Saugerties, New York.

CVD Materials - consist of MesoScribe's direct write printed electronics business. MesoScribe provides MesoPlasma™ printing services and products (heaters, antennas, and sensors) to aerospace, satellite, power generation, defense, and other markets requiring high performance. MesoScribe operations are located at our main facility in Central Islip, New York.

On August 8, 2023, we entered into an agreement with a third party to sell certain assets and license certain proprietary information of MesoScribe. We will continue to fulfill remaining orders for MesoScribe products through the end of 2024 at which time we plan to cease the remaining operations of MesoScribe and dispose of any remaining equipment.

Intellectual Property

Our success is dependent, in part upon the development and protection of our proprietary technology and other proprietary rights. We have historically and continue to protect our proprietary information and intellectual property such as design specifications, blueprints, technical processes, and employee know-how through the use of patents and non-disclosure agreements. In the area of patents, we believe there is value in having protected intellectual property and will continue to file for patent protection of our proprietary technology that we believe has the potential to be incorporated into our products and sold to multiple customers. We also maintain certain trademarks relating to certain of our products and product lines and claim copyright protection for certain proprietary software and documentation.

While patent, copyright and trademark protections for our intellectual property are important to different degrees for our various products and solutions, we believe our future success in highly dynamic markets is most dependent upon the technical competence and creative skills of our personnel and our ability to accelerate the commercialization of next generation intellectual properties. We attempt to protect our trade secrets and other proprietary information through non-disclosure agreements with our customers, suppliers, employees and consultants and other security measures.

Research and Development

We develop new products based on market analysis or by customer request. The technology included in our product development includes mechanical hardware, software and controls systems and overall configuration. We have conducted research and development over the last 40 years and have a wealth of technology from which systems and solutions can be derived from and productized. Together with a number of leading universities and startup companies with whom we partner from time to time, we conduct research on SiC growth, the growth and infiltration of carbon nanotubes, graphene and nanowires as well as on selected aerospace manufacturing processes. Our intention is that together with customers and universities, we will leverage our collective expertise in this field, which we believe will allow us to capitalize on commercial opportunities in the future.

Products and Technology

Chemical Vapor Deposition/Infiltration – Chemical vapor deposition is a method of coating or growing material through a chemical recombination at elevated temperatures onto or within pores of a substrate material. A single or collection of gases or vapor introduced on to the surface or into pores of a substrate material that is heated to such a degree that the gases decompose and deposits a desired layer onto and or into a substrate material. Chemical vapor infiltration (CVI) is a variant of a chemical vapor deposition process that is performed at low pressures to allow for coating the internal surfaces of a porous material. Using heat and low pressure, precursor vapors penetrate the pores/fiber of the material and deposit to form a conformal coating on the internal surfaces. Both processes are accomplished by combining appropriate gases in a reaction chamber, of the kind we manufacture, at elevated temperatures (typically 500° to 2,500° Celsius). Our chemical vapor deposition and CVI systems are complete and include all necessary heating techniques, precise control instrumentation, gas delivery and abatement subsystems and components and include state-of-the-art proprietary process control software. We provide both standard and emerging applications specified products. Some of the standard systems we offer are for SiC, GaN, Aluminum Nitride (AlN), CMCs, silicon (Si), CNT, graphene, silicon nanowires. The systems are sold under the CVD and FirstNano product brands.

Physical Vapor Transport (PVT) – While the PVT150 was officially launched for production in 2022, we have sold PVT systems in prior years and have pioneered both resistive heating and more effectively inductively heated PVT systems. The PVT150 system was specifically designed to address the SiC crystal growth market for 150 mm substrates or wafers. Designed to provide enhanced process parameter control it allows existing and future customers the ability to tightly control and monitor the crystal growth process for 150mm substrates. A 200 mm version called the PVT200 was developed during 2023 and the first order was received in February 2024. The crystal growth technique utilized a high temperature furnace to vaporize from seed granular material of SiC and further deposit out in an ordered crystal structure onto substrate wafer. The process takes days to over a week to complete and yield a SiC crystal ready for further processing into wafers.

Rapid Thermal Processing (RTP) – Used to heat semiconductor materials to elevated temperatures of up to 1,200 ° Celsius at rapid rates of up to 200° Celsius per second. Our RTP systems are offered for implant activation, oxidation, silicide formation and many other processes. We offer systems that can operate both at atmospheric and reduced pressures.

Annealing, Diffusion and Low-Pressure Chemical Vapor Deposition (LPCVD) Furnaces – These furnaces are used for dislocation removal in crystals, dopant diffusion, oxidation, for SiC, Si, SiOx and other applications. The systems are normally operated at atmospheric and/or reduced pressure with gaseous atmospheres related to the process. An optional feature of the system allows for the heating element to be moved away from the process chamber allowing the wafers to rapidly cool or be heated in a controlled environment. Our temperature control system enables more precise control of the wafers. The systems are equipped with an automatic process controller, permitting automatic process sequencing and monitoring with safety alarm provisions.

Ultra-High Purity Gas and Liquid Control Systems – Our standard and custom designed gas and liquid control systems, which encompass gas cylinder storage cabinets, custom gas and chemical delivery systems, gas and liquid valve manifold boxes and gas isolation boxes, provide safe storage and handling of pressurized gases and chemicals. Our system design allows for automatic or manual control from both a local and remote location. These subsystems and components are provided to the general market as well as support the CVD Equipment segment.

Quartzware – The majority of our process equipment solutions, utilize quartz components which we partially manufacturer internally. In addition, the equipment typically requires routine maintenance, consumable and spare parts. One such spare part and consumable which is core to our technology offering is quartz hardware. We provide standard and custom fabricated quartzware used in our equipment and to a lesser extent for other customer tools.

MesoPlasma™ Direct Write Printing – A materials deposition process that provides robust direct write high-definition instrumentation, fine feature patterns, and coatings onto conformal components. The technique involves powder material that is injected into a thermal plasma where it is rapidly heated and deposited onto the substrate or component. The versatility of the process enables a wide range of materials to be deposited including ceramic dielectrics, nickel-based sensor alloys, metallic conductors, precious metals, and protective coatings. Products include temperature sensors, heaters, antennas and patterns per customer specifications.

Markets and Marketing

We serve multiple emerging and mature global markets including compound semiconductor high power electronics, aerospace, defense, battery energy storage, silicon and other microelectronic and micromechanical devices, semiconductor, universities, and research centers. Due to the highly technical nature of our products, we believe it is essential to engage with customers directly through our sales personnel, our network of domestic and international independent sales representatives, and distributors specializing in the type of equipment, products, and services that we sell. Our primary marketing activities include direct sales engagement, participation in trade associations and trade shows and our internet websites. We expanded our marketing activities in 2023 through attendance at key tradeshows and online marketing.

Customers

Our systems and products are used in both production applications and advanced materials research. We market and sell primarily to companies that are the engaged in producing compound semiconductor wafers, aerospace gas turbine jet engine component material, defense, battery energy storage, silicon and other microelectronic and micromechanical devices, semiconductor, universities and research centers. We have both a domestic and international customer base.

Given the complexity and magnitude of the systems we sell, revenue from a single customer in any one year can exceed 10% of our total sales. During the year ended December 31, 2023, three customers represented 14.3%, 13.5% and 10.9% of our revenues, while in 2022 one customer represented 29.2% of our revenues. While we believe that our relationships with these customers are generally positive, the loss of a large customer would have to be replaced by others, and our inability to do so could have a material adverse effect on our business and financial condition.

For the year ended December 31, 2023, approximately $4.1 million or 17% of our revenues were generated by sales to customers outside the U.S., compared to approximately $4.4 million or 17% for the year ended December 31, 2022.

Competition

We can experience intense direct competition from both domestic and international competitors in all our product segments. Our CVD Equipment product lines including FirstNano, target multiple markets and both production and research customers. Competition is substantial in both the production applications and research. In production application, competition comes from larger companies offering enhanced services. In research applications, the competition comes from small companies that compete with us mostly on price. We are aware of other competitors that offer a substantial number of products and services comparable to ours. Many of our competitors (including customers who may elect to manufacture systems for internal use) have financial, marketing and other resources greater than our own. To date, we believe that each of our product and service segments has been able to compete favorably in markets that include these competitors, primarily based on know-how, technical performance, quality, delivery, price and aftermarket support. We continue to focus on products, which serve markets that are growing and where we have a technical and commercially competitive advantage.

CVD Equipment competes with companies located in Asia, Europe, and the US in both the production and research market. In the production and research markets, some of our potential customers built their own equipment. Additionally, there are large established companies who compete with us and pose a competitive risk in the market. Due to budgetary and funding constraints, many customers are price sensitive. We believe that our systems are among the most advanced available for the targeted market and coupled with our vertical integration in engineering and manufacturing, we believe that we can compete effectively.

SDC's gas management and chemical delivery control systems are among the most advanced available. We further believe that SDC is differentiated from our competitors through our deep understanding of how the systems in which our products are incorporated are used in field applications. We have gained this understanding as a result of having designed and built complex process gas systems for our CVD Equipment group as well as for a number of the world's leading semiconductor, aerospace, medical, solar manufacturers, research laboratories and universities.

CVD Materials consists of our MesoScribe subsidiary. There is no viable direct competitor for the MesoScribe services. There are technology competitors in the direct write applications and other additive manufacturing technologies competing for the same contracts and business opportunity.

Sources of Supply

Many of the components used in producing our products are purchased from unrelated suppliers. We have OEM status with our suppliers, but we are not obligated to purchase a pre-determined quantity. We are not dependent on a principal or major supplier and alternate suppliers are available. Historically, subject to lead times, the components and raw materials we used in manufacturing our products were readily obtainable.

We maintain a fully equipped machine shop that we use to fabricate a significant portion of our metal components in-house, including the most intricately designed parts of our equipment. We expanded our machine shop in 2022 to allow us to expand our ability to fabricate parts. Our quartz fabrication capability is currently sufficient to meet our quartzware needs. We believe our vertical manufacturing integration is a competitive advantage.

Materials procured from suppliers and/or manufactured internally undergo a rigorous quality control process to ensure that the parts meet or exceed our requirements and those of our customers. Upon final assembly, all equipment undergoes a final series of complete testing to ensure maximum product performance.

Backlog

As of December 31, 2023, our backlog was approximately $18.4 million, compared to $17.8 million as of December 31, 2022, an increase of $0.6 million. Our backlog at December 31, 2023 consists of approximately $16.3 million remaining performance obligations for contracts in progress and the balance of approximately $2.1 million represents orders received from customers. We continue to work at diversifying our customer base away from any one customer as we focus on new opportunities with new and existing customers within our existing marketplaces and in new applications. The timing for completion of backlog varies depending on the product mix and can be as long as two years or as short as 30-60 days.

There can be no assurance that our backlog will result in actual revenue in any particular period, or at all, or that any contract included in backlog will be profitable. The actual amount and timing of any revenue is subject to various contingencies, many of which are beyond our control, such as cancellations and delays. As a result of these contingencies, we may adjust our backlog if we determine that such orders are no longer firm. In addition to adjustments from these types of contingencies, variations in backlog from time to time are attributable, in part, to changes in sales mix, the timing of contract proposals, the timing of contract awards, delivery schedules on specific contracts. As a result, we believe our backlog and orders, at any point in time, are not necessarily indicative of the total sales anticipated for any future period.

Government Regulations

We are subject to a variety of federal, state and local government regulations, such as environmental, labor and export control regulations. We believe that we have obtained all necessary permits to operate our business and that we are in material compliance with all laws and regulations applicable to us. These regulations are subject to change and the effect of these changes could materially impact our business in certain technology areas and regions.

Utilizing our in-house safety team, engineering expertise and consultants as required, we continue to monitor and comply with applicable Environmental Health and Safety regulations at our facilities as well as the installation of equipment at our customer facilities.

With respect to our sales to customers located in China or elsewhere outside the United States, products which (i) are manufactured in the United States, (ii) incorporate controlled U.S. origin parts, technology, or software, or (iii) are based on U.S. technology, are subject to the U.S. Export Administration Regulations (“EAR”). We continue to monitor, review, and maintain ongoing compliance with the EAR with respect to our export sales.

Product Liability

Our products are used in our customers’ manufacturing processes, which in some cases contain explosive, flammable, corrosive, and toxic gases. There are potential exposures to personal injury as well as property damage, particularly if operated without regard to the design limits of the systems and components. Additionally, the end products of some of our customers are used in areas such as aerospace and high-tech devices where safety is of great concern. Management reviews its insurance coverage on an annual basis or more frequently, if appropriate, and we believe we have the types and amounts of insurance coverage that are sufficient for our business.

Human Capital

We consider our employees a vital asset to our business and strive to ensure we foster a work environment of respect, communication, objective orientation, and personal life balance. We believe this results in a higher level of employee satisfaction and hence improved performance and employment longevity. On December 31, 2023, we had 128 employees. We had 70 employees in manufacturing, 30 in engineering (including research and development and efforts related to product improvement), 5 in field service, 9 in sales and marketing and 14 in general management, maintenance and administration, compared to 136 employees as of December 31, 2022. None of our employees were subject to a collective bargaining agreement.

The implementation of our business strategy depends on our ability to hire, train, and retain qualified and diverse professionals, and we must emphasize employee development and training in order to do so. We are committed to identifying and developing the talents of our next generation of managers and intend to establish a strong succession-planning program for our critical positions, including internships for technical and engineering resources from local universities. Moreover, a key strategic focus of our management team is to foster and maintain a strong and healthy culture, where collaboration to achieve results and focus on the success of our customers and shareholders is paramount.

Employee Safety

The health and safety of our employees and partners is our highest priority, and this is consistent with our operating philosophy. We maintain strong environmental, health and safety protocols that focus on implementing policies and training programs, as well as performing self-audits to ensure our colleagues and partners leave the workplace safely on a daily basis.

Employee Compensation

Management continues to review our employee compensation programs to better align the compensation of our employees with our objectives, performance, and personal performance, and to provide the proper short-term and long-term incentives to attract, retain and motivate them to achieve superior results. We believe we must offer wages that are competitive and consistent with employee positions, skill levels, experience, and knowledge, and in order to do so we may work with a nationally recognized outside compensation and benefits consulting firm to independently evaluate the effectiveness of our executive and non-executive compensation and benefit programs and to provide benchmarking against our peers within our industry.

Equal Opportunity

We are committed to building and sustaining a culture of equal opportunity that encourages all of our employees to reach their full potential. Our CVD team, like the technologies we enable, is a rich combination of diverse individuals coming together to make a material difference for our people, our customers, and the world. As a company that enables tomorrow’s technologies, we recognize that a diverse employee population makes CVD a stronger, more innovative, and a more engaging place to work. We are always striving to attract talented individuals from a diverse candidate pool.

Available Information

Our website address is www.cvdequipment.com and the contents of our website, including our investor relations website, is not incorporated by reference into this filing or any other report we file with or furnish to the SEC. We have no duty to update or revise any forward-looking statements in this Annual Report on Form 10-K or in other reports filed with the SEC, whether as a result of new information, future events or otherwise, unless we are required to do so by law. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Item 1A. <u>Risk Factors</u>

In addition to the other information set forth in this Annual Report on Form 10-K, our shareholders should carefully consider the risk factors described below. The risks set forth below may not be the only risk factors relating to the Company. Any of these factors, many of which are beyond our control, could materially adversely affect our business, financial condition, operating results, cash flow and stock price.

Risk categories:

- Risks related to sales and product development
- Risks related to manufacturing and supply chain
- Risks related to cybersecurity, intellectual property and regulatory compliance
- Risks related to financial and accounting matters
- Risks related to product liability
- Risks related to our stock
- General risk factors

<u>Risks related to sales and product development</u>

Historically, we have maintained a highly concentrated customer base so that changes in ordering patterns, delays or order cancellations could have a material adverse effect on our business and results of operations.

During 2023, three customers represented 14.3%, 13.5% and 10.9% of our total revenues. The loss of a major customer would have to be replaced by others, and our inability to do so may have a material adverse effect on our business and financial condition. We expect that contracts or orders from a relatively limited number of customers will, at times, continue to account for a substantial portion of our business. The mix and type of customers, and sales to any single customer, may vary significantly from quarter to quarter and from year to year. If any major customer did not place orders, or if they substantially reduced, delayed, or cancelled orders, we may not be able to replace the business in a timely manner or at all, which can and has had a material adverse effect on our results of operations and financial condition.

Our lengthy and variable sales cycle makes it difficult to predict our financial results.

The marketing, sale and manufacture of our products, often requires a lengthy sales cycle ranging from several months to over one year before we can complete production and delivery. The lengthy sales cycle makes forecasting the volume and timing of sales difficult and raises additional risks that customers may cancel or decide not to enter into contracts. The length of the sales cycle depends on the size and complexity of the project, the customer's in-depth evaluation of our products, and, in some cases, the protracted nature of a bidding process.

Because a significant portion of our operating expenses are fixed, we have and may continue to incur substantial expense before we earn associated revenue. If customer cancellations occur, they could result in the loss of anticipated sales without allowing us sufficient time to reduce our operating expenses.

If any of our customers cancel or fail to accept a large system order, our financial position and results of operations could be materially and adversely affected.

Our backlog includes orders for customized systems including our chemical vapor deposition equipment and furnaces which are built to client specifications. These customized systems can have prices up to several million dollars, depending on the configuration, specific options included and any specific requirements of the customer. Because our orders are subject to cancellation or delay by the customer, our backlog at any point in time is not necessarily representative of actual sales for succeeding periods, nor does our backlog provide any assurance of achievement of revenues or that we will realize a profit from completing these orders. Our financial position and results of operations could be materially and adversely affected should any large system order be cancelled prior to shipment, or not be accepted by the customer due to alleged non-conformity with product specifications or otherwise. Likewise, a significant change in the liquidity or financial position of any of our customers that purchase large systems, could have a material impact on the collectability of our accounts receivable and our future operating results. Our backlog does not provide any assurance that we will realize a profit from those orders or indicate in which period revenue will be recognized.

If demand declines for chemical vapor deposition/infiltration, physical vapor transport, gas control and related equipment, or for carbon nanotube and nanowire deposition systems, our financial position and results of operations could be materially adversely affected.

Our products are utilized to develop and manufacture materials and coatings for industrial and research applications that are used in numerous markets including but not limited to power electronics, battery materials, aerospace, nano and advanced electronic components. A significant part of our growth strategy involves continued expansion of the sales of our products for industrial as well as research and development purposes by companies, universities, and government-funded research laboratories. The availability of funds for these purposes may be subject to budgetary and political restrictions, as well as cost-cutting measures by manufacturers in the markets in which we operate.

If the availability of funds or the demand for capital equipment in the markets in which we operate declines, the demand for our products would also decline and our financial position and results of operations could be harmed.

The demand for our products and the profitability of our products can change significantly from period to period because of numerous factors.

The industries in which we operate are characterized by ongoing factors, including:

- global and regional economic developments and conditions including in Europe and Asia;

- governmental budgetary and political constraints;
- changes in the capacity utilization and production volume for research and industrial applications in the markets in which we operate;
- the profitability and capital resources of manufacturers in the markets in which we operate;
- changes in technology;
- the availability of funds for research and development; and
- the effects of supply chain disruptions.

For these and other reasons, our results of operations for past periods may not necessarily be indicative of future operating results.

Our business might be adversely affected by our dependence on foreign business.

Because a material portion of our revenues are traditionally derived from international customers, our operating results could be negatively affected by a decline in the economies of any of the countries or regions in which we do business. Each region can exhibit unique characteristics, which can cause capital equipment investment patterns to vary significantly from period to period. Periodic local or international economic downturns, trade balance issues and political instability, as well as fluctuations in interest and currency exchange rates, could negatively affect our business and results of operations.

The majority of our sales to date have been primarily priced in U.S. dollars. While our business has not been materially affected in the past by currency fluctuations, there is a risk that it may be materially adversely affected in the future. Such risks include possible losses due to both currency exchange rate fluctuations and from possible social and political instability.

Our reputation and operating performance may be negatively affected if our products are not timely delivered.

We provide complex products that often require substantial lead-time for design, ordering parts and materials, and for assembly and installation. The time required to design, order parts and materials and to manufacture, assemble and install our products, may in turn lead to delays or shortages in the availability of some products. If a product is delayed or is the subject of shortage because of problems with our ability to design, manufacture or assemble the product on a timely basis, obtain necessary materials and components, or if a product or software otherwise fails to meet performance criteria, we may lose revenue opportunities entirely, or experience delays in revenue recognition associated with a product or service. In addition, we may incur higher operating expenses during the period required to correct the problem.

We may not be able to keep pace with the rapid change in the technology we use in our products.

We believe that our continued success in the markets in which we operate depends, in part, on our ability to continually improve existing technologies and to develop and manufacture new products and product enhancements on a timely and cost-effective basis. We must be able to introduce these products and product enhancements into the market in a timely manner, in response to customer's demands for higher-performance research and assembly equipment, customized to address rapid technological advances in capital equipment designs.

Technological innovations are inherently complex and require long development cycles and appropriate professional staffing. Our future business success depends on our ability to develop and introduce new products, or new uses for existing products, that successfully address changing customer needs. Our success also depends on our ability to achieve market acceptance of our new products. To maintain our success in the marketplace, we may have to substantially increase our expenditures on research and development. If we do not develop and introduce new products, technologies or uses for existing products in a timely manner and continually find ways to reduce the cost of developing and producing them in response to changing market conditions or customer requirements, our business could be seriously harmed.

We face significant competition, and we are relatively small in size and have fewer resources in comparison with many of our competitors.

We face significant competition throughout the world, which may increase as certain markets in which we operate continue to evolve. Our future performance depends, in part, upon our ability to continue to compete successfully worldwide. Some of our competitors are diversified companies that have substantially greater financial resources and more extensive research, engineering, manufacturing, marketing and customer service and support capabilities than we can provide. We face competition from companies whose strategy is to provide a broad array of products, some of which compete with the products and services that we offer, as well as companies, universities and research laboratories that have the capacity to design and build their own equipment internally. These competitors may bundle their products and services in a manner that may discourage customers from purchasing our products. In addition, we face competition from smaller emerging processing equipment companies, whose strategy is to provide a portion of the products and services that we offer at often lower prices than ours, using innovative technology to sell products into specialized markets. Loss of competitive position could impair our prices, customer orders, revenue, gross margin, and market share, any of which would negatively affect our financial position and results of operations. Our failure to compete successfully with these other companies would seriously harm our business. There is a risk that larger, better financed competitors will develop and market more advanced products than those we currently offer, or that competitors with greater financial resources may decrease prices, thereby putting us under financial pressure.

Risks related to manufacturing and our supply chain

Manufacturing interruptions or delays could affect our ability to meet customer demand and lead to higher costs, while the failure to estimate customer demand accurately could result in excess or obsolete inventory.

Our business depends on timely supply of equipment, services and related products that meet the rapidly changing technical and volume requirements of our customers. Some key parts to our products are subject to long lead-times and/or obtainable only from a single supplier or limited group of suppliers. Cyclical industry conditions and the volatility of demand for manufacturing equipment increase capital, technical, operational and other risks for us and for companies throughout our supply chain. Further, these conditions may cause some suppliers to scale back operations, exit businesses, merge with other companies, or file for bankruptcy protection and possibly cease operations. We have also experienced and continue to experience significant disruptions in our supply chain, resulting in delays and higher costs to procure certain components and materials that we utilize in our business.

We may also experience significant interruptions of our manufacturing operations, delays in our ability to deliver products or services, increased costs or customer order cancellations as a result of:

- The failure or inability of suppliers to timely deliver sufficient quantities of quality parts on a cost-effective basis;
- Volatility in the availability and cost of materials, including rare earth elements;
- Difficulties or delays in obtaining required import or export approvals;
- Information technology or infrastructure failures; and
- Natural disasters or other events beyond our control (such as earthquakes, floods or storms, regional economic downturns, pandemics, social unrest, political instability, terrorism, or acts of war).

If a supplier fails to meet our requirements concerning quality, cost, or other performance factors, we may transfer our business to alternative sources, which could entail manufacturing delays, additional costs, or other difficulties. In addition, if we need to rapidly increase our business and manufacturing capacity to meet increases in demand or expedited shipment schedules, this may exacerbate any interruptions in our manufacturing operations and supply chain and the associated effect on our working capital.

We are presently experiencing supply chain delays and cost increases that may adversely affect our business.

Geopolitical developments across Europe and Asia have and may continue to restrict our ability to procure raw materials and components such as nickel and integrated circuits. Since 2021, we have experienced increased costs on certain components as well as delays in supply chain delivery, which may also impact our ability to recognize revenue and reduce our gross profit margins, as well as extend our manufacturing lead times and reduce our manufacturing efficiencies. We have begun placing orders with more lead time to help mitigate the manufacturing delays, as well as assessing other suppliers or components to attempt to mitigate the potential cost impacts. In addition, we are utilizing our in-house flexible manufacturing to attempt to further mitigate both potential schedule delivery delays and material cost increase, as well as increasing sales prices. While we have taken actions to mitigate the potential negative impacts to our revenue and profitability, there can be no assurance of the ultimate impact and the length of time that the supply chain factors may impact our revenues and profitability.

Inflation has and may continue to adversely affect our business, financial condition, and results of operations.

Recent global inflation has adversely affected our costs, including the cost of materials, production, and labor. As such, we have had to implement measures to mitigate the negative impacts of inflation on our costs. As the selling prices in our customer contracts are fixed, any increase in the cost of materials, labor and other costs as we manufacture any system would negatively impact our gross margins and results of operations. Longstanding or increased periods of inflation could perpetuate these material adverse effects on our business, financial condition and results of operations.

If our critical suppliers fail to deliver enough quality materials and components in a timely and cost-effective manner, it could negatively affect our business.

We use numerous unrelated suppliers of materials and components. Due to geopolitical developments across Europe and Asia, we are experiencing reduced availability of raw materials and components. In turn, any reduction in the availability of these materials and components may reduce our ability to obtain sufficient amounts in a cost-effective manner. We generally do not have guaranteed supply arrangements with our suppliers. Because of the variability and uniqueness of our customer's orders, we try to avoid maintaining an extensive inventory of materials and components for manufacturing. While we are not dependent on any principal or major supplier for most of our material and component needs, switching to an alternative supplier may take significant amounts of time and added expense, which could result in a disruption of our operations and adversely affect our business. It is not always practical or even possible to ensure that component parts are available from multiple suppliers; accordingly, we procure some key parts from a single supplier or a limited group of suppliers. At certain times, increases in demand for capital equipment can result in longer lead-times for many important system components, which may cause delays in meeting shipments to our customers. The delay in the shipment of even a few systems could cause significant variations in our quarterly revenue, operating results and the market value of our common stock.

Our manufacturing facilities are in Central Islip, New York and Saugerties, New York could be affected due to multiple weather risks, including risks to our Central Islip facility from hurricanes and similar phenomena.

Our manufacturing facilities are located in Central Islip, New York and Saugerties, New York could be affected by multiple weather risks, most notably hurricanes for our Central Islip facility which is located on Long Island, New York. Although we carry property and casualty insurance and business interruption insurance, future possible disruptions of operations or damage to property, plant and equipment due to hurricanes or other weather risks could result in impaired production and affect our ability to meet our commitments to our customers and impair important business relationships, the loss of which could adversely affect our operations and profitability. We do, however, maintain a backup power source at our Central Islip facility, are working to establish deeper redundancies between our New York facilities to help mitigate this risk.

Risks related to cybersecurity, intellectual property and regulatory compliance

If we are subject to cyberattacks, we could incur substantial costs and, if such attacks are successful, we could incur significant liabilities, reputational harm, and disruption to our operations.

We manage, store, and transmit proprietary information and sensitive data relating to our operations. We may be subject to breaches of the information technology systems we use for these purposes. Experienced computer programmers and hackers may be able to penetrate our network security and misappropriate and/or compromise our confidential information (and or third-party confidential information), create system disruptions, or cause shutdowns. Computer programmers and hackers also may be able to develop and deploy viruses, worms, and other malicious software programs that attack our systems or our products, or that otherwise exploit any security vulnerabilities.

While we have an active security training program for all employees during the year, utilize intrusion prevention and detection systems, as well as hardware firewall and virus security, the costs to address the foregoing security problems and security vulnerabilities before or after a cyber-incident could be significant. Our remediation efforts may not be successful and could result in interruptions, delays, or cessation of service, and loss of existing or potential customers, impeding our sales, manufacturing, distribution, or other critical functions. In addition, breaches of our security measures and the unapproved dissemination of proprietary information or sensitive data about us, our customer, or other third parties, could expose us, our customers, or other third parties to a risk of loss or misuse of this information, result in litigation and potential liability for us, damage our reputation, or otherwise harm our business.

Our financial position and results of operations may be materially harmed if we are unable to recoup our investment in research and development.

The rapid change in technology in our industry requires that we continue to make substantial investments in research and development and selective acquisitions of technologies and products, to enhance the performance and functionality of our product line, to keep pace with competitive products and to satisfy customer demands for improved performance, features and functionality. There can be no assurance that revenue from future products or enhancements will be sufficient to recover the development costs associated with such products, enhancements, or acquisitions, or that we will be able to secure the financial resources necessary to fund future research and development or acquisitions. Research and development costs are typically incurred before we confirm the technical feasibility and commercial viability of a product, and not all development activities result in commercially viable products. In addition, we cannot ensure that products or enhancements will receive market acceptance, or that we will be able to sell these products at prices that are favorable to us. Our business could be seriously harmed if we are unable to sell our products at favorable prices, or if our products are not accepted by the markets in which we operate.

We have made investments in our proprietary technologies. If third parties violate our proprietary rights, or accuse us of infringing upon their proprietary rights, such events could result in a loss of value of some of our intellectual property or costly litigation.

We attempt to protect certain of our intellectual property rights by obtaining patent and trademark protection where we believe it is appropriate to do so. While patent, copyright and trademark protection for our intellectual property may be important, we believe our future success in highly dynamic markets is most dependent upon the technical competence and creative skills of our personnel. We may also attempt to protect our trade secrets and other proprietary information through confidentiality agreements with our customers, suppliers, employees, and consultants, and through other internal security measures. However, these employees, consultants and third parties may breach these agreements, and we may not have adequate remedies for wrongdoing. In addition, the laws of certain territories in which we sell our products may not protect our intellectual property rights to the same extent as do the laws of the United States.

Occasionally, we may receive communications from other parties asserting the existence of patent rights or other intellectual property rights that they believe cover certain of our products, processes, technologies, or information. In addition, it is possible we could have a dispute with a customer concerning the use of intellectual property utilized in their equipment. If such cases arise, we will evaluate our position and consider the available alternatives, which may include seeking licenses to use the technology in question on commercially reasonable terms, developing new alternative technology or defending our position. Nevertheless, we cannot ensure that we will be able to obtain licenses, or, if we are able to obtain licenses, which related terms will be acceptable, or that litigation or other administrative proceedings will not occur. Defending our intellectual property rights through litigation could be very costly. If we are not able to negotiate the necessary licenses on commercially reasonable terms or successfully defend our position, our ability to utilize such intellectual property could substantially inhibit our access to certain markets and our ability to compete in these markets which could have a material adverse effect on our financial position and results of operations.

We may be unable to obtain required export licenses for the sale of our products.

Whether with respect to sales to customers located in China or otherwise, products which (i) are manufactured in the United States, (ii) incorporate controlled U.S. origin parts, technology, or software, or (iii) are based on U.S. technology, are subject to the U.S. Export Administration Regulations (“EAR”) when exported to and re-exported from international jurisdictions, in addition to the local jurisdiction’s export regulations applicable to individual shipments. Licenses or proper license exceptions may be required for the shipment of our products to certain customers or countries. Obtaining an export license or determining whether an export license exception exists often requires considerable effort by us and cooperation from the customer, which can add time to the order fulfillment process. We may be unable to obtain required export licenses or qualify for export license exceptions and, as a result, we may be unable to export products to our customers and/or meet their servicing needs. Non-compliance with the EAR or other applicable export regulations could result in a wide range of penalties including the denial of export privileges, fines, criminal penalties, and the seizure of commodities. If an export regulatory body determines that any of our shipments violate applicable export regulations, we could be fined significant sums and our export capabilities could be restricted, which could have a material adverse impact on our business.

Failure to comply with the United States Foreign Corrupt Practices Act could subject us to penalties and other adverse consequences.

We are subject to the United States Foreign Corrupt Practices Act, which generally prohibits United States companies from engaging in bribery or other prohibited payments to foreign officials for the purpose of obtaining or retaining business. We have agreements with third parties and make sales in countries known to experience corruption, extortion, bribery, pay-offs, theft, and other fraudulent practices. We can make no assurance, however, that our employees or other agents will not engage in such conduct for which we might be held responsible. If our employees or other agents are found to have engaged in such practices, we could suffer severe penalties and other consequences that may have a material adverse effect on our business, financial condition, and results of operations.

We are subject to environmental regulations, and our inability or failure to comply with these regulations could adversely affect our business.

We are subject to environmental regulations in connection with our business operations, including regulations related to the development and manufacture of our products and our customers’ use of our products. Our failure or inability to comply with existing or future environmental regulations could result in significant remediation liabilities, the imposition of fines or the suspension or termination of development, manufacturing, or use of certain of our products, or affect the operation of our facilities, use or value of our real property, each of which could damage our financial position and results of operations.

Regulations related to conflict minerals will force us to incur additional expenses, may make our supply chains more complex, and may result in damage to our relationships with customers.

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, the SEC adopted requirements for companies that manufacture products that contain certain minerals and metals known as “conflict minerals”. These rules require public companies to perform diligence and to report annually to the SEC whether such minerals originate from the Democratic Republic of Congo and adjoining countries. The implementation of these requirements could adversely affect the sourcing, availability, and pricing of minerals we use in the manufacture of our products. In addition, we have incurred and will continue to incur additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals used in our products. Given the complexity of our supply chain, we may not be able to ascertain the origins of these minerals used in our products through the due diligence procedures that we implement, which may harm our reputation. We may also face difficulties in satisfying customers who may require that our products be certified as conflict mineral free, which could harm our relationships with these customers and lead to a loss of revenue. These requirements could limit the pool of suppliers that can provide conflict-free minerals, and we may be unable to obtain conflict-free minerals at competitive prices, which could increase our costs and adversely affect our manufacturing operations and our profitability.

Risks related to financial and accounting matters

Cyclical demand for our products may make it difficult for us to accurately budget our expense levels, which are based in part on our projections of future revenues.

Historically, demand for our equipment and related consumable products have been volatile because of changes in supply and demand, and other factors in the manufacturing process. Our orders tend to be more volatile than our revenue, as any change in demand is reflected immediately in orders booked, which are net of cancellations, while revenue, tends to be recognized over multiple quarters because of procurement and production lead times, and the deferral of certain revenue under our revenue recognition policies. The fiscal period in which we can recognize revenue is also at times subject to the length of time that our customers require to evaluate the performance of our equipment. This could cause our quarterly operating results to fluctuate.

When cyclical fluctuations result in lower-than-expected revenue levels, operating results have been and may continue to be materially adversely affected and cost reduction measures have been and may continue to be necessary for us to remain competitive and financially sound. During a down cycle, we must be able to make timely adjustments to our cost and expense structure to correspond to the prevailing market conditions. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and the number of our personnel to meet customer demand, which may require additional liquidity. We can provide no assurance, that these objectives can be met in a timely manner in response to changes within the industry cycles in which we operate. If we fail to respond to these cyclical changes, our business could be seriously harmed.

We do not have long-term volume production contracts with our customers, and we do not control the timing or volume of orders placed by our customers. Whether and to what extent our customers place orders for any specific products, and the mix and quantities of products included in those orders are factors beyond our control. Insufficient orders would result in under-utilization of our manufacturing facilities and infrastructure and will negatively affect our financial position and results of operations.

We might require additional financing.

Our continuing operating losses may make it difficult for us to obtain financing on commercially reasonable terms, if at all. If adequate financing is not available when required on commercially reasonable terms, if at all, our business and operations may be materially and adversely affected. In addition, we could issue additional common stock, to fund our growth initiatives and operations which could materially dilute the ownership interests of the then existing shareholders.

We may, in the future, identify deficiencies in controls over financial reporting.

While we have concluded that, as of December 31, 2023, our disclosure and reporting controls were effective as included in Part II, Item 9A, there can be no assurance that material weaknesses will not be identified in the future. If we do identify material weaknesses in our internal controls over financial reporting in the future, our ability to analyze, record and report financial information free of material misstatements, and to prepare our financial statements within the time periods specified by the rules and forms of the SEC, may likely be adversely affected.

We have and may continue to be required to take impairment charges on assets.

We are required to assess our long-lived assets, including acquired intangible assets and property, plant and equipment, for recoverability and impairment whenever there are indicators or impairment, such as an adverse change in business climate.

As part of our long-term strategy, we have pursued acquisitions of other companies or assets, and may pursue future acquisitions of other companies or assets which could potentially increase our assets. Adverse changes in business conditions could materially impact our estimates of future operations and result in impairment charges to these assets. If our assets were impaired, our financial condition and results of operations could be materially and adversely affected.

Acquisitions can result in an increase in our operating costs, divert management's attention away from other operational matters and expose us to other associated risks.

We evaluate potential acquisitions of businesses and technologies, and we consider targeted acquisitions that expand our core competencies to be an important part of our future growth strategy. In the past, we have made acquisitions of other businesses with synergistic products, services and technologies, and plan to continue to do so in the future.

Acquisitions involve numerous risks, which include but are not limited to:

- difficulties and increased costs in connection with the integration of the personnel, operations, technologies, services and products of the acquired companies into our existing facilities and operations;
- diversion of management's attention from other operational matters;
- failure to commercialize the acquired technology;
- the potential loss of key employees of the acquired companies;
- lack of synergy, or inability to realize expected synergies, resulting from the acquisitions;
- the risk that the issuance of our common stock, if any, in an acquisition or merger could be dilutive to our shareholders;
- the inability to obtain and protect intellectual property rights in key technologies; and
- the acquired assets becoming impaired as a result of technological advancements or worse-than-expected performance of the acquired assets.

Risks related to product liability

We face the risk of product liability claims.

The manufacture and sale of our products, which in operation sometimes involve the use of toxic materials and extreme temperatures and could result in product liability claims. For example, our rapid thermal processing systems used to heat semiconductor materials to temperatures more than 1000º Celsius have certain inherent risks. A failure of our products at a customer site could also result in losses due to interruption of the business operations of our customer. While we regularly evaluate the nature and limits of our insurance coverages, there can be no assurance that our existing policies of insurance will be adequate to protect us from all liabilities that we might incur in connection with the manufacture and sale of our products in the event of a successful product liability claim or series of successful claims against us.

The health and environmental effects of nanotechnology are unknown, and this uncertainty could adversely affect the expansion of our business.

The health and environmental effects of nanotechnology are unknown. There is no scientific agreement on the health effects of nanomaterials in general and carbon nanotubes but some scientists believe that in some cases, nanomaterials may be hazardous to an individual's health or to the environment.

The science of nanotechnology is based on arranging atoms in such a way as to modify or build materials not made in nature; therefore, the effects are unknown. Future research into the effects of nanomaterials in general, and carbon nanotubes, on health and environmental issues, may have an adverse effect on products incorporating nanotechnology. Since part of our growth strategy is based on sales of research equipment to produce carbon nanotubes and the sale of such materials, the determination that these materials are harmful could adversely affect the expansion of our business.

Risk related to our stock

The price of our common shares is volatile and could decline significantly.

The stock market in general and the market for technology stocks has experienced volatility. If those industry-based market fluctuations continue, the trading price of our common shares could decline significantly independent of the overall market, and shareholders could lose all or a substantial part of their investment. The market price of our common shares could fluctuate significantly in response to several factors, including, among others:

- difficult macroeconomic conditions, unfavorable geopolitical events, and general stock market uncertainties, such as those occasioned by a global liquidity crisis and a failure of large financial institutions;
- an offering of our common shares to raise capital;
- receipt of large orders or cancellations of orders for our products;
- issues associated with the performance and reliability of our products;
- actual or anticipated variations in our results of operations;
- announcements of financial developments or technological innovations;
- changes in recommendations and/or financial estimates by investment research analysis;
- strategic transactions, such as acquisitions, divestitures, or spin-offs;
- offerings of our securities;
- the occurrence of major catastrophic events; and
- volatile trading volumes.

Significant price and value fluctuations have occurred with respect to our publicly traded securities and those of technology companies generally. The price of our common shares is likely to be volatile in the future. In the past, securities class action litigation often has been brought against a company following periods of volatility in the market price of its securities. If similar litigation were pursued against us, it could result in substantial costs and a diversion of management's attention and resources, which could materially and adversely affect our financial condition, results of operations, and liquidity.

General risks

Our success is highly dependent on the technical, sales, marketing and managerial contributions of key individuals, including our Chief Executive Officer and President, and we may be unable to retain these individuals or recruit others.

We depend on our senior executives including our Chief Executive Officer and President, and certain key managers as well as, engineering, research and development, sales, marketing and manufacturing personnel, who are critical to our business. Except for our Chief Executive Officer and President, we do not have employment agreements with our key employees. Furthermore, the current labor market remains very competitive and challenging for the acquisition and retention of key employees. Larger competitors may be able to offer more generous compensation packages to our executives and key employees, and therefore we risk losing key personnel to those competitors. If we were to lose the services of any of our key personnel, our engineering, product development, manufacturing and sales efforts could be slowed. We may also incur increased operating expenses and be required to divert the attention of our senior executives to search for their replacements. The integration of any new personnel could disrupt our ongoing operations.

We may not be able to hire or retain the number of qualified personnel, particularly engineering personnel, required for our business, which would harm the development and sales of our products and limit our ability to grow.

Competition in our industry for senior management, technical, sales, marketing and other key personnel is intense and has been made even more challenging in the current labor market. If we are unable to retain our existing personnel, or attract and train additional qualified personnel, our growth may be limited due to a lack of capacity to develop and market our products.

We have, from time to time, had trouble in hiring and retaining skilled engineers with appropriate qualifications to support our growth strategy. Our success depends on our ability to identify, hire, train and retain qualified engineering personnel with experience in equipment design. Specifically, we need to continue to attract and retain mechanical, electrical, software and field service engineers to work with our direct sales force to technically qualify and perform on new sales opportunities and orders, and to demonstrate our products.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

We have implemented a risk-based approach to identify and assess the cybersecurity threats that could affect our business and information systems. We use recognized commercially reasonable measures, tools, and methodologies to manage cybersecurity risk, which are tested regularly. We also monitor and evaluate our cybersecurity posture on an ongoing basis through regular malware scans, penetration tests, and third-party reviews. Specific controls that are used to some extent include endpoint threat detection, identity and access management (IAM), privileged access management (PAM), logging and monitoring, multi-factor authentication (MFA), firewalls and intrusion detection and prevention, and vulnerability and patch management.

To manage our material risks from cybersecurity threats and to protect against, detect, and prepare to respond to cybersecurity incidents, we undertake the below listed activities:

- Monitor emerging data protection laws and implement changes to our compliance processes;
- Conduct annual cybersecurity assessments for employees who use our system to evaluate training needs;
- Conduct onboarding and cyber security training for all employees on an ongoing basis;
- Conduct regular phishing email simulations for all employees; and
- Carry cybersecurity risk insurance that protects against the potential losses from a cybersecurity incident.

Our incident response plan coordinates the activities that we and our third-party cybersecurity provider take to prepare to respond to and recover from cybersecurity incidents. These include processes to triage, assess severity, investigate, escalate, contain, and remediate an incident, as well as to comply with potentially applicable legal obligations and mitigate brand and reputational damage. We have an IT continuity plan that we continuously review and update in line with our evolving applications architecture.

Our Board of Directors and Audit Committee oversee our cybersecurity efforts to ensure effective governance in managing risks associated with cybersecurity threats. Our Director of Information Technology provides periodic updates to the Board of Directors and Audit Committee regarding our cybersecurity program, including status updates on various projects to enhance our overall cybersecurity posture.

We describe whether and how risks from cybersecurity threats have or are reasonably likely to affect our financial position, results of operations, and cash flows under the heading “Risk related to cybersecurity, intellectual property and regulatory compliance,” which is included as part of Item 1A. Risk Factors of this Annual Report on Form 10-K, which disclosures are incorporated by reference herein.

Item 2. Properties

Our corporate headquarters, research and development, manufacturing and process coating facilities as of December 31, 2023 are as follows:

Owned Locations	Size (sf)	Segment	Mortgage/Loan	Principal use
Central Islip, NY	128,000	CVD Equipment / CVD Materials	No	Corporate headquarters; R&D; Manufacturing
Saugerties, NY	22,000	SDC	No	Manufacturing; Administration

Item 3. Legal Proceedings.

Not applicable.

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

As of March 25, 2024, there were approximately 55 holders of record and approximately 3,544 beneficial owners of our common stock, and the closing sales price of our common stock as reported on the NASDAQ Capital Market was $4.93.

Dividend Policy

We have never paid dividends on our common stock and we do not anticipate paying dividends on common stock at the present time. We currently intend to retain earnings, if any, for use in our business. There can be no assurance that we will ever pay dividends on our common stock. Our dividend policy with respect to our common stock is within the discretion of the Board of Directors and its policy with respect to dividends in the future will depend on numerous factors, including earnings, financial requirements, and general business conditions.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

None.

Item 6. Reserved.

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

You should read the following discussion and analysis in conjunction with our consolidated financial statements and related notes contained elsewhere in this report. This discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of a variety of factors discussed in this report and those discussed in other documents we file with the SEC. In light of these risks, uncertainties and assumptions, readers are cautioned not to place undue reliance on such forward-looking statements. These forward-looking statements represent beliefs and assumptions as of the date of this report. While we may elect to update forward-looking statements at some point in the future, we specifically disclaim any obligation to do so, even if our estimates change. Past performance does not guarantee future results.

Executive Summary

We have served the advanced materials markets with chemical vapor and thermal process equipment for over 40 years. CVD designs, develops, and manufactures a broad range of chemical vapor deposition, gas control, and other state-of-the-art equipment and process solutions used to develop and manufacture materials and coatings for industrial applications and research. To learn more about CVD’s systems and offerings, visit www.cvdequipement.com.

During 2023:

- Revenue declined by $1.7 million or 6.6% as the prior year benefited from a large number of PVT150 orders.
- Gross margin declined by $1.6 million or 23.5% due to cost overruns experienced on one large contract.
- Total bookings for 2023 were approximately $25.8 million, a decrease of $7.3 million or 22.1% as compared to 2022. Bookings for 2022 included orders for PVT equipment as compared to none in 2023.
- Received $8.7 million in orders from a major aerospace company for the production of CVI systems. The systems will be used by our customer to manufacture CMCs for their gas turbine jet engines.
- Increased our backlog from $17.8 million to $18.4 million.

- Cash balance at December 31, 2023 was $14.0 million.

Business Update

Our core strategy is to focus on growth market applications in end-user markets related to the “electrification of everything,” aerospace and industrial applications. The phrase “electrification of everything” refers to the shift from fossil fuels to the use of electricity to power devices, buildings, electric vehicles or EVs, and many other applications. With respect to aerospace, our systems are being used by our customers to produce ceramic matrix composite materials or CMCs that will be used in next generation jet engines with the objective of reducing jet fuel consumption and contributing to the decarbonization of that industry.

During 2021, we received the first six (6) orders for our PVT150 system that is used by our customer to grow silicon carbide crystals and received an additional 24 orders from the same customer in 2022. The crystals would be further processed into 150 mm silicon carbide wafers and later processed into integrated circuits and other devices. Devices based on silicon carbide have been shown to reduce energy consumption in EVs and reduce the need for additional cooling elements. While we did not receive any additional orders from this customer, we remain in continuing discussions regarding potential additional orders.

We launched our marketing campaign for the PVT150 in the latter part of 2022 as we seek orders from other potential customers. We also developed and launched our new PVT200 system used to grow silicon carbide crystals for the manufacture of 200 mm wafers in 2023.

In February 2024, we received our first order for a PVT200. This is our second customer for PVT equipment. This customer plans to evaluate our equipment with the objective to select a vendor for potential additional purchases of PVT equipment.

During 2022, we completed the production of a system for a customer that deposits coatings onto powders used in silicon-graphite anodes that has the objective of increasing EV battery performance while lowering cost. We received two additional orders from this customer in 2023 that were completed during the year.

During 2023, we also received a total $10.6 million of aerospace orders from multiple customers, reflecting continuing strong interest in the application of CMCs in gas turbine jet engines.

In February 2024, we received a multisystem order for approximately $10 million that will be used for depositing a silicon carbide protective coating on OEM components.

Results of Operations

Years Ended December 31, 2023 and 2022

The following table presents revenue and expense line items reported in our Consolidated Statements of Operations for the years ended December 31, 2023 and 2022 and the period-over-period dollar and percentage changes for those line items (in thousands, except percentages).

	December 31, 2023	December 31, 2022	Change	Percent
Revenue	$ 24,109	$ 25,813	$ (1,704)	(7%)
Cost of revenue	19,038	19,186	(148)	(1%)
Gross profit	5,071	6,627	(1,556)	(24%)
Operating expenses				
Research and development	2,596	1,906	690	36%
Selling	1,632	1,216	416	34%
General and administrative	5,451	5,328	123	2%
Loss on disposition of Tantaline	162	-	162	*
Impairment charge	111	-	111	*
Total operating expenses	9,952	8,450	1,502	18%
Operating loss	(4,881)	(1,823)	(3,058)	(168%)
Other income (expense):				
Interest income	577	162	415	256%
Interest expense	(23)	(8)	(15)	188%
Employee retention credits	-	1,529	(1,529)	(100%)
Foreign exchange loss	42	(95)	137	*
Other income	91	15	76	*
Total other income, net	687	1,603	(916)	(57%)
Loss before income tax	(4,194)	(220)	(3,974)	*
Income tax (benefit) expense	(14)	4	(18)	*
Net loss	$ (4,180)	$ (224)	$ (3,956)	*

* Not meaningful

Revenue

	December 31, 2023	December 31, 2022	Change	Percent
CVD Equipment	$ 16,334	$ 16,674	$ (340)	(2%)
SDC	7,139	6,541	598	9%
CVD Materials	1,184	3,171	(1,987)	(63%)
Intersegment sales elimination	(548)	(573)	25	*
Total	$ 24,109	$ 25,813	$ (1,704)	(7%)

* Not meaningful

Our revenue for the year ended December 31, 2023 was $24.1 million compared to $25.8 million for the year ended December 31, 2022, a decrease of $1.7 million or 7%.

The decrease in revenue versus the prior year period was primarily attributable to decreased revenue of $0.3 million from the CVD Equipment segment related to lower equipment sales and spare parts, $2.0 million decrease from our CVD Materials segment due to the disposition of Tantaline and wind down of MesoScribe's operations, offset by a $0.6 million increase in revenue from our SDC segment due to higher demand.

Revenue from one aerospace customer in 2023 represented 13.5% of our total revenues and 20.1% of CVD Equipment segment revenues. Sales of PVT150 systems made to one customer in 2023 and 2022 represented 14.3% and 29.2%, respectively, of our total revenues and 21.2% and 45.2%, respectively, of CVD Equipment segment revenues.

The revenue contributed by the CVD Equipment segment for the year ended December 31, 2023 represented 67% of overall revenue as compared to 65% of overall revenue for the year ended December 31, 2022. The decrease in revenues of $0.3 million or 2% resulted from lower PVT150 revenues offset by an increase in aerospace revenue.

The revenue contributed by the SDC segment for the year ended December 31, 2023 represented 28% of overall revenue as compared to 25% of overall revenue for the year ended December 31, 2022. Revenue for our SDC segment increased $0.6 million or 9% due to increased orders and demand for the SDC's products during 2023 as compared to the prior year.

The revenue contributed by the CVD Materials segment for the year ended December 31, 2023 represented 5% of our overall revenue as compared to 12% of overall revenue for the year ended December 31, 2022 The decrease of $2.0 million was principally due to the disposition of Tantaline in May 2023 and the wind down of MesoScribe's operations.

Our order backlog at December 31, 2023 was approximately $18.4 million as compared to December 31, 2022 of $17.8 million. Our order backlog at December 31, 2023 consists of approximately $16.3 million related to remaining performance obligations of contracts in progress and the balance of approximately $2.1 million represents other orders received from customers. One aerospace customer represented 49.2% of our backlog as of December 31, 2023. Historically, our revenues and orders have fluctuated based on changes in order rate as well as other factors in our manufacturing process that impacts the timing of revenue recognition. Accordingly, orders received from customers and revenue recognized may fluctuate from quarter to quarter.

Gross Profit

Gross profit for the year ended December 31, 2023 amounted to $5.1 million, with a gross profit margin of 21%, compared to a gross profit of $6.6 million and a gross profit margin of 26% for the year ended December 31, 2022. The decrease in gross profit of $1.6 million was primarily due to significant cost overruns on one contract and lower PVT150 and CVD Materials revenues as compared to 2022.

Research and Development

For the year ended December 31, 2023, research and development expenses were $2.6 million, or 10.8% of revenue as compared to $1.9 million, or 7.4% for the year ended December 31, 2022. The increase in 2023 was the result of increased personnel and employee-related costs to develop new products for key growth markets.

General engineering support and expenses related to the development of more standard products and value-added development of existing products are reflected as part of research and development expense. General engineering support and expenses are charged to costs of goods sold when work is performed directly on a customer order.

Selling

Selling expenses were $1.6 million or 6.8% of the revenue for the year ended December 31, 2023 as compared to $1.2 million or 4.7% for the year ended December 31, 2022. The increase in 2023 was primarily the result of increased personnel and employee-related costs during to support increased marketing efforts.

General and Administrative

General and administrative expenses for the year ended December 31, 2023 were $5.5 million or 22.6% of revenue compared to $5.3 million or 20.6% of revenue for the year ended December 31, 2022, an increase of $0.1 million. The increase in expenses was principally due to increases in stock-based compensation of $0.2 million, higher professional fees of $0.3 million, and increase in 401(k) match of $0.2 million, offset by lower bonus expense of $0.4 million and lower expenses for CVD Materials of $0.1 million due to the disposition of Tantaline.

Loss on Disposition of Tantaline

This expense represents the net loss on the sale of our Tantaline subsidiary including professional fees.

Impairment Charge

This expense represents the loss on the impairment of certain assets of MesoScribe based on the decision to wind down its operations.

Other Income, Net

Other income, net was $0.7 million for the year ended December 31, 2023 as compared to other income, net of $1.6 million for the year ended December 31, 2022.

The increase in interest income of $0.4 million was due to higher interest rates and increased amounts invested in U.S. treasury bills. During 2022, we conducted an analysis to determine if we were entitled to an employee retention credit ("ERC") under the Coronavirus Aid, Relief, and Economic Security Act as amended by the Taxpayer Certainty and Disaster Tax Relief Act of 2020 and the American Plan Act of 2021. Based on our analysis, we determined that we were entitled to an ERC of approximately $1.5 million related to payroll paid in the first and third quarters of 2021 under the applicable Internal Revenue Service regulations and . we recognized other income of this amount during the year ended December 31, 2022. This amount was collected in July 2023.

Income Taxes

Income tax (benefit) expense for the years ended December 31, 2023 and 2022, was ($14,000) and $4,000, respectively. We continue to evaluate for potential utilization of our deferred tax asset, which has been fully reserved for, on a quarterly basis, by reviewing our economic models, including projections of future operating results.

Inflation and Supply Chain Matters

We experienced increased costs on certain materials and components as well as delays in supply chain delivery, which may also impact our ability to recognize revenue and reduce our gross profit margins, as well as extend our manufacturing lead times and reduce our manufacturing efficiencies. We have commenced placing orders with more lead time to help mitigate the manufacturing delays, as well as assessing other suppliers or components to attempt to mitigate the potential cost impacts. In addition, we are utilizing our in-house flexible manufacturing to attempt to further mitigate both potential schedule delivery delays and material cost increase. While we have initiated actions to mitigate the potential negative impacts to our revenue and profitability, there can be no assurance of the ultimate impact and the length of time that the supply chain factors may impact our revenues and profitability.

Inflation has also had an impact on salaries and compensation. To remain competitive in the acquisition and retention of our employees, we have reviewed and adjusted salaries and implemented bonus incentives to mitigate the potential negative impacts of inflation on our employees.

Liquidity and Capital Resources

As of December 31, 2023, we had aggregate working capital of $14.3 million compared to aggregate working capital of $15.5 million at December 31, 2022. Our cash and cash equivalents at December 31, 2023 and 2022 were $14.0 million and $14.4 million, respectively.

Net cash used in operating activities during 2023 was $0.2 million and was principally due to the net loss of $4.2 million, decrease in contract assets of $0.6 million, increase in inventories of $1.9 million, decrease in accrued expenses of $0.7 million (primarily due to payment of 2022 bonus) offset by a decrease in accounts receivable of $1.8 million, collection of employee retention credit receivable of $1.5 million, an increase in contract liabilities of $0.9 million and non-cash items of $2.0 million. The increase in inventory was related to the production of PVT150 systems in anticipation of potential future orders and increases related to new system orders.

Net cash used in investing activities during 2023 was $0.1 million. Capital expenditures of $0.4 million related to purchases of manufacturing equipment and building improvements. The disposition of Tantaline resulted in a cash outflow of $0.3 million based on the terms of the agreement. We received $0.6 million of deposits from the purchaser of certain MesoScribe equipment as described below.

Cash flows from financing activities during 2023 was not significant and included $0.1 million of proceeds from the exercise of employee stock options and $0.1 million of repayment of an equipment loan.

On August 4, 2023, we entered into a Purchase and License Agreement with a third-party. Pursuant to the Purchase and License Agreement, we will sell certain proprietary assets relating to its plasma spray technology and material deposition system and grant a non-exclusive license to use certain of our related intellectual property as more fully described in the Purchase and License Agreement, for an aggregate purchase price of $0.9 million. The purchase price is payable in several installments and contingent upon certain performance metrics and other milestones.

During the year ended December 31, 2023, we received payments under the Purchase and License Agreement in the amount of $0.6 million which is reflected as deposits from purchaser in the accompanying consolidated balance sheet as of December 31, 2023. We expect the transaction to be completed during 2024.

We expect to continue to fulfill remaining customer orders for MesoScribe products through the end of 2024 at which time it plans to cease the remaining operations of MesoScribe and dispose of any remaining equipment.

We believe that our cash and cash equivalent positions and our projected cash flow from operations will be sufficient to meet our working capital and capital expenditure requirements for the next twelve months from the filing of this Form 10-K. We will continue to assess our operations and take actions anticipated to maintain our operating cash to support the working capital needs.

Critical Accounting Policies and Estimates

Use of Estimates

This discussion and analysis of the Company's financial condition and results of operations is based on the Company's consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States of America, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reported periods. In accordance with U.S. GAAP, the Company bases its estimates on historical experience and on various other assumptions the Company believes are reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

We consider an accounting estimate to be critical if: (1) the accounting estimate requires us to make assumptions about matters that were highly uncertain at the time the accounting estimate was made, and (2) changes in the estimate that are reasonably likely to occur from period to period, or use of different estimates that we reasonably could have used in the current period, would have a material impact on our financial condition or results of operations.

We believe that of our significant accounting policies, which are described in the notes to the consolidated financial statements, the following accounting policies involve a greater degree of judgments, estimates and assumptions. Accordingly, these are the policies that we believe are the most critical to aid in fully understanding and evaluating our consolidated financial condition and results of operations. For information on the Company's significant accounting policies and estimates refer to Note 2 "Summary of Significant Accounting Policies" including the "Use of Estimates" section, in the consolidated financial statements.

Revenue Recognition

We design, manufacture, and sell custom chemical vapor deposition equipment through contractual agreements. These system sales require us to deliver functioning equipment that is generally completed within two to eighteen months from commencement of order acceptance. We recognize revenue over time by using an input method based on costs incurred as it depicts our progress toward satisfaction of the performance obligation. Under this method, revenue arising from fixed price contracts is recognized as work is performed based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligations.

Incurred costs include all direct material and labor costs and those indirect costs related to contract performance, such as indirect labor, supplies, tools, repairs and depreciation costs. Contract material costs are included in incurred costs when the project materials have been purchased or moved to work-in-process as required by the project's engineering design. Cost based input methods of revenue recognition require us to make estimates of costs to complete the projects. In making such estimates, significant judgment is required to evaluate assumptions related to the costs to complete the projects, including materials, labor, and other system costs. If the estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known and can be reasonably estimated.

We have been engaged in the production and delivery of goods on a continual basis under contractual arrangements for many years. Historically, we have demonstrated an ability to accurately estimate total revenues and total expenses relating to our long-term contracts. However, there exist many inherent risks and uncertainties in estimating revenues, expenses and progress toward completion, particularly on larger or longer-term contracts. If we do not estimate the total sales, related costs, and progress toward completion on such contracts, the estimated gross margins may be significantly impacted, or losses may need to be recognized in future periods. Any such resulting changes in margins or contract losses could be material to our results of operations and financial condition.

Long-Lived Assets

Long-lived assets consist primarily of property, plant and equipment. Long-lived assets are reviewed for impairment whenever events or circumstances indicate their carrying value may not be recoverable. When such events or circumstances arise, an estimate of the future undiscounted cash flows produced by the asset, or the appropriate grouping of assets, is compared to the asset's carrying value to determine if impairment exists pursuant to the requirements of ASC 360-10-35, "Impairment or Disposal of Long-Lived Assets." If the asset is determined to be impaired, the impairment loss is measured on the excess of it carrying value over its fair value. Assets to be disposed of are reported at the lower of their carrying value or net realizable value. It is not possible for us to predict the likelihood of any possible future impairments or, if such an impairment were to occur, the magnitude of any impairment.

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

Not applicable.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements and supplementary data required by this item are included in this Annual Report on Form 10-K beginning on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures. We maintain a system of disclosure controls and procedures (as defined in Rule 13a-15(e) and 13d-15(e) under the Exchange Act of 1934, as amended, (the "Exchange Act")). As required by Rule 13a-15(b) under the Exchange Act, management of the Company, under the direction of our Chief Executive Officer and Chief Financial Officer, reviewed and performed an evaluation of the effectiveness of design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of December 31, 2023.

Based on that review and evaluation, our Chief Executive Officer and Chief Financial Officer, along with others in our management, have determined that as of the end of the period covered by this Report on Form 10-K, the disclosure controls and procedures were effective to provide reasonable assurance that such information is accumulated and communicated to our management, including our principal executive and financial officers, as appropriate to allow timely decisions regarding disclosures.

Changes in Internal Controls

There were no changes in our internal controls over financial reporting as defined in Rule 13a-15(f) or Rule 15d-15(f) under the Exchange Act that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the internal controls over financial reporting.

Limitations on the Effectiveness of Controls

We believe that a control system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the control systems are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

Management's Annual Report on Internal Control Over Financial Reporting. Our management is responsible for establishing and maintaining effective internal control over financial reporting (as defined in Rule 13a – 15(f) of the Exchange Act). There are inherent limitations to the effectiveness of any internal control, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective internal controls can provide only reasonable assurance with respect to financial statement preparation. Further, because of changes in conditions, the effectiveness of internal control may vary over time. We have assessed the effectiveness of our internal controls over financial reporting (as defined in Rule 13a -15(f) of the Exchange Act) as of December 31, 2023. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in "Internal Control – Integrated Framework (2013)". Management concluded that, as of December 31, 2023, our internal control over financial reporting was effective based on the criteria established by the COSO Internal Control Framework.

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 the rules of the Securities and Exchange Commission that permit us to provide only management's report in this Annual Report on Form 10-K.

Item 9B. Other Information.

Not applicable.

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

Not applicable.

PART III

Item 10. Directors, Executive Officers, and Corporate Governance.

Background and Experience of Directors

When considering whether directors and nominees have the experience, qualifications, attributes or skills, taken as a whole, to enable the Board of Directors to satisfy its oversight responsibilities effectively in light of our business and structure, the Nominating, Governance and Compliance Committee focused primarily on each person's background and experience as reflected in the information discussed in each of the directors' individual biographies set forth immediately below. We believe that our directors provide an appropriate mix of experience and skills relevant to the size and nature of our business. As more specifically described in such person's individual biographies set forth below, our directors possess relevant and industry-specific experience and knowledge in the engineering financial and business fields, as the case may be, which we believe enhances the Board's ability to oversee, evaluate and direct our overall corporate strategy. The Nominating, Governance and Compliance Committee annually reviews and makes recommendations to the Board regarding the composition and size of the Board so that the Board consists of members with the proper expertise, skills, attributes, and personal and professional backgrounds needed by the Board, consistent with applicable regulatory requirements.

The Nominating, Governance and Compliance Committee believes that all directors, including nominees, should possess the highest personal and professional ethics, integrity, and values, and be committed to representing the long-term interests of our shareholders. The Nominating, Governance and Compliance Committee will consider criteria including the nominee's current or recent experience as a senior executive officer, whether the nominee is independent, as that term is defined in existing independence requirements of the NASDAQ Capital Market and the Securities and Exchange Commission, the business, scientific or engineering experience currently desired on the Board, geography, the nominee's industry experience, and the nominee's general ability to enhance the overall composition of the Board.

The Nominating, Governance and Compliance Committee does not have a formal policy on diversity; however, in recommending directors, the Board and the Committee consider the specific background and experience of the Board members and other personal attributes in an effort to provide a diverse mix of capabilities, contributions and viewpoints which the Board believes enables it to function effectively as the Board of Directors of a company with our size and the nature of our business.

Legal Proceedings Involving Directors

None.

Board Leadership

Our Corporate Governance practices contain several features which we believe will ensure that the Board maintains effective and independent oversight of management, including the following:

- Executive sessions without management and non-independent directors present are a standing Board agenda item. Executive sessions of the independent directors are held at any time requested by an independent director and, in any event, are held in connection with at least 100% of regularly scheduled Board meetings.
- The Board regularly meets in executive session with the CEO without other members of management present.
- All Board committee members are independent directors. The committee chairs have authority to hold executive sessions with management and non-independent directors present.

While our Board has no formal policy with respect to separation of the positions of Chairman and CEO or with respect to whether the Chairman should be a member of management or an independent director, we believe that the appointment of Mr. Waldman as Chairman properly facilitates better communication between the Independent Directors on the one hand and the non-Independent Director and members of management on the other hand and leads to improved oversight and discussions by the Board as a whole. The Chief Executive Officer of the Company, Emmanuel Lakios, is tasked with the responsibility of implementing our corporate strategy, we believe he is best suited for leading discussions with input from the Chairman, at the Board level, regarding performance relative to our corporate strategy and this discussion accounts for a significant portion of the time devoted at the Board meetings.

Our Certificate of Incorporation and Bylaws provide for our Company to be managed by or under the direction of the Board of Directors. Under our Certificate of Incorporation and Bylaws, the number of directors is fixed from time to time by the Board of Directors. The Board of Directors currently consists of six members. Directors are elected for a period of one year and thereafter serve, subject to the Bylaws, until the next annual meeting at which their successors are duly elected by the shareholders.

The following table sets forth the names, ages and positions with the Company of each of our directors and executive officers, as of March 25, 2024.

Name	Age	Position(s) with the Company
Emmanuel Lakios	62	Chief Executive Officer, President, Director
Lawrence J. Waldman	77	Chairman of the Board of Directors, Chairman-Audit Committee
Raymond A. Nielsen	73	Director, Chairman - Nominating, Governance and Compliance Committee
Robert M. Brill	77	Director, Chairman - Strategic Planning Committee
Debra Wasser	59	Director
Ashraf Lotfi	63	Director
Richard A. Catalano	64	Chief Financial Officer, Vice President, Secretary and Treasurer
Kevin R. Collins	58	Vice President and General Manager of SDC
Jeffrey A. Brogan	54	Vice President of Sales and Marketing
Maxim S. Shatalov	53	Vice President of Engineering and Technology
Warren D. Cheesman	51	Vice President of Manufacturing Operations

Emmanuel Lakios

Emmanuel Lakios was appointed to serve as President and Chief Executive Officer of the Company on January 22, 2021, and on July 15, 2021 was elected by the shareholders as a member of the Board of Directors. Mr. Lakios joined the Company as Vice President Sales and Marketing in February 2017. Mr. Lakios has over 30 years of experience serving the aerospace, semiconductor, data storage and optical device industries and is the holder of several patents in the field of process equipment and device structure. From January 2015 through February 2017, Mr. Lakios was the President and Chief Executive Officer at Sensor Electronic Technology, Inc., overseeing that company's transition from R&D to a leading global commercial UV LED supplier. From 2003 to 2011 he was the Executive Vice President of Field Operations and President and Chief Operating Officer at Imago Scientific, bringing it from pre-revenue to a commercial leadership position in the 3D atomic scale tomography field. Mr. Lakios was previously employed at Veeco Instruments Inc. from 1984 until 2003, where he held several positions, including President of the Process Equipment Group and Executive Vice President of Field Operations. He has been involved in several acquisitions and numerous product line launches. He received his BE in Mechanical Engineering with focus in Material Science from SUNY Stony Brook in 1984.

Lawrence J. Waldman

Lawrence J. Waldman was appointed a member of the Board of Directors on October 5, 2016 and currently serves as Chairman of the Board and Chairman of the Audit Committee. Mr. Waldman has over 40 years of experience in public accounting.

Mr. Waldman is a member of the board of directors of Comtech Telecommunications Corporation since August 2015 and Lead Independent Director since December 2021. He serves as the chairperson of Comtech's Audit Committee. Mr. Waldman is a member of the board of directors and Lead Independent Director and Audit Committee Chairperson at APYX Medical Corporation, a Nasdaq-listed advanced energy medical technology company. Mr. Waldman serves as a Senior Advisor at First Long Island Investors, LLC since 2016 and was previously an Advisor to the accounting firm of EisnerAmper LLP following his role as Partner-in-Charge of Commercial Audit Practice Development for Long Island. Mr. Waldman served as the Managing Partner of the Long Island office of KPMG LLP from 1994 through 2006, the accounting firm where he began his career in 1972. During his tenure at KPMG, Mr. Waldman served as audit partner to a number of public and privately held technology companies.

Mr. Waldman is currently Chairman of the Board of Directors of the Long Island Association and a member of the boards of directors of the Long Island Angel Network and the Advanced Energy Research Center at Stony Brook University. Through October 21, 2018, Mr. Waldman was a member of the board of directors of Northstar/RXR Metro Income, Inc., an SEC registered non-traded real estate investment trust.

Mr. Waldman is the current Chairman of the Supervisory Committee of Bethpage Federal Credit Union and previously served as the Chairman of the Audit Committee of the State University of New York's ("SUNY") Board of Trustees, the largest state university system in the United States. Mr. Waldman previously served as Chairman of the Audit and Finance Committee Board of Trustees of the Long Island Power Authority ("LIPA"), the second largest government utility in the United States, and as the Chairman of the Board. Mr. Waldman also served as an adjunct professor at Hofstra University, teaching graduate courses in advanced accounting theory and advanced auditing. Mr. Waldman is a certified public accountant in New York State. He is a member of the American Institute of Certified Public Accountants and the New York State Society of CPAs. Mr. Waldman holds a Bachelor of Science and a Master of Business Administration from Hofstra University in Hempstead, New York.

Mr. Waldman qualifies to serve as a director, Audit Committee Chairman and Lead Independent Director because of his significant experience leading public company boards, his extensive relevant industry and financial and accounting expertise.

Ashraf Lotfi

Dr. Ashraf Lotfi is currently a venture partner with Deep Sciences Ventures and serves on the board of Lotus Microsystems, ApS, Xonia Ltd., HyperCIM Ltd. Dr. Lotfi previously served as Vice President and a Fellow at Intel Corporation. Prior to Intel, he was Power Chief Technology Officer for Altera Corporation serving its Enpirion Power Business as well as the broader Field Programmable Gate Array community. Altera was acquired by Intel in 2015. Prior to Altera, he served as President and Chief Executive Officer of Enpirion, Inc., which he founded in 2002.

From Enpirion's inception, Dr. Lotfi led its strategic direction with a unique industry-first vision to create the ultimate power converter-on-chip creating ubiquitous DC-DC conversion at the silicon level. In 2013, he led Enpirion's merger into Altera to realize his vision of highly integrated power management closely coupled to leading-edge digital silicon loads. Prior to founding Enpirion, he was Director of Advanced Power Research at Bell Laboratories.

Dr. Lotfi has a B.S. in Electrical Engineering from Cairo University and an M.S. and PhD. in Electrical Engineering from Virginia Tech.

Dr. Lotfi currently serves on the boards of Lotus Microsystems ApS, Xonai Ltd., HyperCIM Ltd. and his extensive experience in high power electronics provide a valuable resource to the Board of Directors and Executive Management.

Debra Wasser

Ms. Wasser currently serves as Vice President of Investor Relations and ESG Engagement for Etsy, Inc. (Nasdaq: ETSY), the global marketplace for unique and creative goods. She is responsible for Etsy's external shareholder relationships, with a focus on corporate and financial reporting, driving increased analyst coverage and investor connectivity, effective corporate messaging, strategic investor targeting, and elevating the company's ESG messaging with the financial community. Ms. Wasser has led investor and broad internal and external communications strategies on multiple financial transactions and offerings, and a host of product and technology launches and marketing initiatives.

Prior to joining Etsy in April 2018, Ms. Wasser led Edelman's Investor Relations practice in the U.S., and advised boards of directors and senior managements of public companies on strategic communications including investor relations, financial and corporate public relations, transaction communications, crisis communications and leadership positioning.

Prior to joining Edelman in 2015, Ms. Wasser was Senior Vice President, Investor Relations & Corporate Communications for Veeco Instruments, Inc. (Nasdaq: VECO) for over 15 years. While at Veeco, Ms. Wasser created and implemented a global investor relations program to raise visibility and deepen ownership to reflect business trends. She led effective communications strategy through positive periods of growth, over a dozen merger and acquisition transactions, a highly successful secondary equity offering, and new market opportunities.

Prior to joining Veeco, Ms. Wasser was Vice President of Dewe Rogerson Inc. where she ran the firm's U.S. investor relations client base, focused on healthcare/biotech, high-tech, consumer products, financial services, publishing, and general industry. During her tenure at the firm, Ms. Wasser serviced clients across the globe and helped grow the firm from four to 80 employees. Debra has a B.S. in Communications and Business from The State University of New York at Albany.

Ms. Wasser has provided business and communications advice to Boards of Directors of publicly traded and privately held companies for over three decades. She has served on the Board of Directors of NIRI, the Association of Investor Relations Professionals, including the maximum service of four years on the National Chapter Board, as well as earlier as a Board member of the organizations New York Chapter.

Raymond A. Nielsen

Raymond A. Nielsen was appointed a member of the Board of Directors on October 5, 2016. Mr. Nielsen was the Director of Finance for The Beechwood Organization until January 2019 and had been responsible for Project and Corporate Finance including Strategic Planning Initiatives since 2014. He has been a member of the Board of Directors of Dime Community Bank since its merger on February 1, 2021 with Bridge Bancorp Inc. In addition, he is Chairman of the Credit Risk Committee and a member of the Audit and Compliance Committees. Prior to the merger, he was a member of the Board of Directors of Bridgehampton National Bank and Bridge Bancorp Inc., its Parent holding company since 2013, and served on the Audit Committee, Compensation Committee, Corporate Governance & Nominating Committee, as well as on the ALCO and Loan Committees and the Compliance BSA & CRA Committee. Mr. Nielsen also served as a Director of North Fork Bancorporation and its subsidiary North Fork Bank from 2000 to 2006 where he chaired both the Compensation Committee and Audit Committee as well as having served as Lead Independent Director. Mr. Nielsen is the former CEO of Reliance Federal Savings Bank and Herald National Bank, and a 45-year veteran of the banking industry. Mr. Nielsen's extensive public company, banking and real estate development experience provides a valuable resource to the Board of Directors and Executive Management.

Dr. Robert M. Brill

Dr. Brill was appointed a Director of the Company on March 5, 2021. Dr. Brill was co-founder and managing partner of Newlight Management from 1997 to 2019, which managed venture capital funds that focused on early-stage technology companies. Prior to co-founding Newlight, Dr. Brill was a general partner of Poly Ventures, a Long Island based venture capital fund. Dr. Brill is a member of the Board of Directors of the Long Island Angel Network and one private company. Dr. Brill has also previously served on the Board of Directors of multiple public and private companies. Dr. Brill has been the CEO of both public and private companies. Dr. Brill served as General Manager of Harris Corporation's CMOS Semiconductor Division. He also held various technical and management positions at IBM's semiconductor operation. Dr. Brill holds a Ph.D. in nuclear physics from Brown University and a B.A. and a B.S. in Engineering Physics from Lehigh University. Dr. Brill had previously served on the Company's Board from April 2018 until October 2019.

Richard A. Catalano

Richard Catalano was appointed as the Company's Vice President and Chief Financial Officer effective as of August 30, 2022. Mr. Catalano began his career at KPMG LLP and became an audit partner in 1993. Throughout his over 35 years as an audit professional at KPMG LLP, Mr. Catalano advised a diverse array of clients through private equity financed transactions, merger-related accounting, and filings with the U.S. Securities and Exchange Commission. Towards the later part of his tenure, Mr. Catalano served as the leader of KPMG LLP's Metro New York Healthcare and Life Sciences Practice and then co-led KPMG's Global Audit Methodology Group. Mr. Catalano is a Certified Public Accountant in New York State and received a Bachelor of Business Administration in accounting from Hofstra University.

Kevin R. Collins

Prior to his appointment as Vice President and General Manager of SDC, Mr. Collins served as the General Manager of SDC since 1999. From 1990 to 1999 he was employed by Stainless Design Corp. as Manager of Field Operations and Product Development Advisor. Mr. Collins attended Columbia University School of Engineering and Applied Science.

Jeffrey A. Brogan

Dr. Jeffrey Brogan was appointed as Vice President Sales and Marketing for the Company on March 23, 2021. Previously he was Director of Sales and Marketing for CVD Materials Corporation since November 2017 with General Management responsibilities of CVD MesoScribe Technologies Corporation. Dr. Brogan served as the President and CEO of MesoScribe Technologies, Inc., spearheading its sale to CVD in 2017. He has over 20 years of experience in strategic sales and marketing, technology management, and advanced research & development. Dr. Brogan has led the development of innovative sensor products, transitioning high performance products to manufacturing using the Company's Direct Write MesoPlasma™ printing technology. He received his PhD in Materials Science and Engineering from Stony Brook University in 1996.

Maxim S. Shatalov

Dr. Shatalov was appointed Vice President of Engineering and Technology in April 2018. Prior to CVD, Mr. Shatalov was employed by Sensor Electronic Technology Inc. (SETi) a LED company where he held multiple technical and management positions from 2006 thru 2018. In 2017, Dr. Shatalov became Vice President of Technology responsible for UV LED technology and LED application development at SETi. Dr. Shatalov has over twenty years of experience in semiconductor research and devices and holds more than 12 U.S. patents.

Warren D. Cheesman

Warren Cheesman was appointed Vice President of Manufacturing Operations in October 2022. He has over 25 years of management experience in the semiconductor, medical device and defense equipment sectors. Mr. Cheesman has held roles of increasing responsibility in engineering, operations, quality and strategic sourcing, at equipment manufacturers including Veeco Instruments, Air Techniques, and Kongsberg Defense & Aerospace. Mr. Cheesman provides strategic leadership across all divisions related to manufacturing, quality, and continuous improvement initiatives, with emphasis on process improvement, lean manufacturing, risk management, and collaboration. He holds two master of science degrees from Stony Brook University in Technology Management and Materials Science & Engineering, and a Bachelor of Science degree in Mechanical Engineering from Virginia Tech. His academic and professional experience is also complemented by a Six Sigma Black Belt certification.

Code of Ethics

We have adopted a Corporate Code of Conduct and Ethics that applies to our employees, senior management and Board of Directors, including the Chief Executive Officer and Chief Financial Officer. The Corporate Code of Conduct and Ethics is available on our website, www.cvdequipment.com, by clicking on "About Us" and then clicking on "Governance."

Audit Committee

Our Board of Directors has an Audit Committee that currently consists of Lawrence J. Waldman, Chairman, Raymond A. Nielsen, Robert M. Brill, Debra Wasser (effective July 13, 2023), Ashraf Lotfi (effective August 18, 2023) and Conrad J. Gunther (until July 13, 2023). During the fiscal year ended December 31, 2023, the Audit Committee held four meetings. Pursuant to the Audit Committee Charter, the Audit Committee is directly responsible for the appointment, compensation, retention and oversight of the work of any independent registered public accounting firm engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for us, and each such independent auditor shall report directly to the Committee. The Audit Committee also reviews with management and the independent auditors, our annual audited financial statements (including the disclosures under "Management's Discussion and Analysis of Financial Condition and Results of Operations"), the scope and results of annual audits and the audit and non-audit fees of the independent registered public accounting firm. Messrs. Waldman, Gunther, Nielsen and Brill and Ms. Wasser are "independent" under the requirements of the NASDAQ Stock Market.

The Board of Directors has determined that Mr. Waldman is an "audit committee financial expert" as that term is defined in the rules and regulations of the Securities and Exchange Commission.

Section 16(a) Beneficial Ownership Reporting Compliance

The rules of the Securities and Exchange Commission require us to disclose late filings of reports of stock ownership and changes in stock ownership by our directors, officers and ten percent shareholders. To our knowledge, based solely on our review of (a) the copies of such reports and amendments thereto furnished to us and (b) written representations that no other reports were required, during our fiscal year ended December 31, 2023, all of the filings for our officers, directors and ten percent shareholders were made on a timely basis, with the exception of: (i) a delinquent Form 4 disclosing a single transaction for each of Mr. Lakios, Mr. Catalano, Dr. Brogan, Dr. Shatalov, Mr. Collins, and Mr. Cheesman; and (ii) a delinquent Form 4 disclosing one transaction for Mr. Africk.

Item 11. Executive Compensation.

Summary Compensation Table

The following table sets forth the compensation of our chief executive officer and chief financial officer, and our "named executive officers," for the years ended December 31, 2023 and 2022.

Name and principal position	Year	Salary ($)	Bonus ($) (1)	Option Awards ($) (2)	Stock Awards ($) (2)	All Other Compensation ($) (3)	Total ($)
Emmanuel Lakios President and Chief Executive Officer	2023 2022	388,600 316,800	- 191,600	699,990 236,704	- -	19,522 13,830	1,108,112 758,934
Richard Catalano (4) Secretary, Chief Financial Officer and Executive Vice President	2023 2022	274,700 80,769	- 31,250	233,330 68,151	- -	27,201 288	533,231 180,458
Thomas McNeill (5) Secretary, Chief Financial Officer and Executive Vice President	2023 2022	- 187,425	- 29,988	- -	- -	- 137,689	 355,102
Jeffrey A. Brogan Vice President Sales & Marketing	2023 2022	203,300 196,000	- 58,800	139,998 47,341	- -	7,863 3,053	351,161 305,194

(1) Reflects cash bonuses under the Company's Management Bonus Plan. Bonuses listed for a particular year represents amounts earned with respect to such year even though all or part of such amounts have been paid during the following year.

(2) These columns represent the grant date fair value of the stock awards as calculated in accordance with FASB ASC 718 (Stock Compensation). The stock options granted in 2022 and 2023 vest 25% per year over four years and have a ten-year life.

(3) All other compensation consists of 1) 401(k) match in 2023 and 2022 of $9,900 and $8,895 for Emmanuel Lakios, $9,179 and $288 for Richard Catalano, $0 and $4,094 for Thomas McNeill and $7,863 and $3,053 for Jeffrey Brogan, respectively; 2) severance in 2022 of $104,125 and accrued and used vacation time in 2022 of $29,470 for Thomas McNeill; and 3) health insurance premiums in 2023 and 2022 of 9,622 and $8,895 for Emmanuel Lakios and $18,022 and $0 for Richard Catalano.

(4) Effective August 30, 2022, Richard Catalano was appointed Vice President and Chief Financial Officer.

(5) Effective August 30, 2022, Thomas McNeill resigned as Executive Vice President and Chief Financial Officer.

Employment Agreements and Potential Payments Upon Termination or Change in Control

Emmanuel Lakios Employment Agreement

On June 1, 2021, the Company entered into an Employment Agreement with Emmanuel Lakios, the Company's President and Chief Executive Officer (the "Lakios Agreement"). The term of Mr. Lakios's employment under the Lakios Agreement commenced as of the effective date thereof and shall continue until terminated in accordance with the terms of the Lakios Agreement. Under the Lakios Agreement, Mr. Lakios will receive an initial annual base salary of $288,000, which shall be reviewed from time to time and may be increased, but not decreased, by the Compensation Committee of the Board of Directors (the "Committee") in its sole and exclusive discretion. Mr. Lakios shall be entitled to participate in any bonus or incentive plan available to the Company's senior executives generally, on such terms as the Committee may determine in its discretion.

In the event of the termination of the Lakios Agreement and Mr. Lakios's employment thereunder, Mr. Lakios or his estate (in the event of his death) shall be entitled to (A) receive any unpaid base salary earned and accrued under the Lakios Agreement prior to the date of termination (and reimbursement for expenses incurred prior to the date of termination), (B) indemnification in accordance with any applicable indemnification plan, program, corporate governance document or other arrangement, and any vested rights pursuant to any insurance plan, benefit plan or retirement plan, and, except in the event of Mr. Lakios's termination by the Company for Cause (as defined in the Lakios Agreement, (C) treatment of his stock option grants in accordance with the terms of the applicable plan and award agreement.

In the event Mr. Lakios's employment is terminated as a result of death or disability, Mr. Lakios shall also be entitled to receive a pro rata bonus payment under the Company's bonus Plan for the year of termination, if applicable.

In the event Mr. Lakios's employment is terminated by the Company for Cause, Mr. Lakios's stock option grants, whether vested or unvested, shall immediately terminate and be null and void.

In the event Mr. Lakios's employment is terminated by the Company without Cause, or by Mr. Lakios for Good Reason (as defined in the Lakios Agreement), Mr. Lakios shall also be entitled to (A) a pro rata bonus for the year of termination, and (B) continued payment of his base salary and the Company's portion of Mr. Lakios's then existing medical benefits for the nine (9) month period following the date of termination.

The Lakios Agreement contains customary non-competition, non-solicitation, and confidentiality provisions in favor of the Company.

Other then as set forth above, there are no arrangements for compensation of directors or Named Executive Officers and there are no employment contracts between the Company and its directors or any change in control arrangements.

Outstanding Equity Awards at December 31, 2023

The following table sets forth the outstanding equity awards held by our named executive officers as of December 31, 2023.

	OPTION AWARDS				STOCK AWARDS			
Name	Number of Securities Underlying Options Exercisable	Number of Securities Options Unexercisable	Exercise Price	Option Expiration Date	Number of shares or units of stock that have not vested	Market value of shares or units of stock that have not vested	Equity Incentive Plan Awards: Number of unearned shares or units that not vested	Equity Incentive Plan Awards: Market or payout value of unearned shares or units that have not vested
Emmanuel Lakios	-	100,000	$ 14.11	3/23/2033	-	-	-	$ -
	18,750	56,250	$ 5.02	8/17/2032				
	50,000	50,000	$ 4.26	6/1/2023				
	100,000	-	$ 10.30	2/6/2027	-	-		
Richard Catalano	-	25,000	$ 14.11	3/23/2033	-	-	-	$ -
	5,000	15,000	$ 5.42	8/30/2032				
Jeffrey A. Brogan	-	15,000	$ 14.11	3/23/2033	-	-	-	$ -
	3,750	11,250	$ 5.02	8/17/2032				
	10,000	10,000	$ 4.01	7/15/2021				
	20,000	-	$ 11.61	10/31/2027				

2023 Director Compensation

The following table sets forth a summary of the compensation we paid to our non-employee directors in 2023.

Name	Fees Earned or Paid in Cash	Option Awards	Restricted Stock Awards	Total
Lawrence J. Waldman	$ 113,000	-	$ 40,000	$ 153,000
Raymond A. Nielsen	50,000	-	40,000	90,000
Robert M. Brill	50,000	-	40,000	90,000
Debra Wasser	18,696	-	40,000	38,696
Ashraf Lotfi	14,783	-	14,783	29,566
Conrad J. Gunther	26,766	-	20,000	46,766

On October 11, 2021, the Board of Directors, following the unanimous recommendation of the Board's Compensation Committee, unanimously approved a director compensation plan, effective October 1, 2021 (the "Plan"). The Plan is based on the recommendations of an independent compensation consultant engaged by the Board's Compensation Committee. Pursuant to the Plan, each director is entitled to Director Compensation, divided into the following pay components: (i) Annual Board Cash Compensation in the amount of $40,000 and (ii) an Annual Equity Retainer in the amount of $40,000, to be automatically granted on the date of the Company's annual meeting of shareholders. Additionally, a director serving as a chairman for the Board's Compensation Committee, Nominating & Governance Committee, or Strategic Planning Committee is entitled to Chair Compensation in the amount of $10,000. The director serving as the chairman for the Board's Audit Committee is entitled to Chair Compensation in the amount of $25,000. Furthermore, the director serving as the Non-Executive Chairman is entitled to Board Leadership Compensation in the amount of $48,000.

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

The following table sets forth, as of March 25, 2024, information regarding the beneficial ownership of our common stock by (a) each person who is known to us to be the owner of more than five percent (5%) of our common stock, (b) each of our directors, (c) each of the named executive officers, and (d) all directors and executive officers and executive employees as a group. For purposes of the table, a person or group of persons is deemed to have beneficial ownership of any shares that such person has the right to acquire within 60 days of March 25, 2024.

Name and Address of Beneficial Owner (1)	Amounts and Nature of Beneficial Ownership (2)	Percent of Class (%)
Andrew Africk / ADA Partners LP	1,076,834	15.9
Leviticus Partners, L.P.	660,000	9.7
Emmanuel Lakios	200,108(3)	3.0
Kevin R. Collins	92,437(3)	1.4
Lawrence J. Waldman	70,288(4)	1.0
Raymond A. Nielsen	61,588(4)	*
Jeffrey A. Brogan	42,019(3)	*
Robert M. Brill	23,073(4)	*
Maxim Shatalov	17,500(3)	*
Richard Catalano	11,250(3)	*
Warren Cheesman	7,500(3)	*
Ashraf Lotfi	4,514(4)	*
Debra Wasser	4,373(4)	*
All directors and executive officers and executive employees as a group (nine persons)	534,650	7.9

* Less than 1% of the outstanding common stock or less than 1% of the voting power

(1) The address of Messrs. Lakios, Waldman, Nielsen, Brogan, Brill, Shatalov, Catalano, Cheesman. Lotfi and Ms. Wasser is c/o CVD Equipment Corporation, 355 South Technology Drive, Central Islip, New York 11722. The address of Mr. Collins is c/o Stainless Design Concepts, 1117 Old Kings Highway, Saugerties, NY 12477. The address of Andrew Africk / ADA Partners is c/o Searay Capital, 111 West 67 th Street, New York, NY 10023. The address of Leviticus Partners, L.P. is 200 Park Avenue, Suite 1700, New York, NY 10166.

(2) All of such shares are owned directly with sole voting and investment power, unless otherwise noted below.

(3) Does not include unvested options to purchase the following shares of our common stock: Lakios – 181,250; Collins – 27,500; Brogan – 32,500; Shatalov – 32,500; Catalano – 33,750; and Cheesman – 22,500

(4) Does not include unvested restricted shares of our common stock: Waldman – 1,458; Nielsen – 1,458; Brill – 1,458; Lotfi – 1,822 and Wasser – 1,438

Does not include shares to be issued per Director compensation agreement related to the Annual Equity Retainer in the amount of $40,000, to be determined at the 2024 Annual Meeting of Shareholders.

Equity Compensation Plan Information Table

The following table provides information about shares of our common stock that may be issued upon the exercise of options under all of our existing compensation plans as of December 31, 2023.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (1)	Weighted-average exercise price of outstanding options, warrants and rights (2)	Number of securities remaining available for future issuance
Equity compensation plans approved by security holders	846,875	$ 8.20	335,375
Equity compensation plans not approved by security holders	—	N/A	—
Total	846,875	$ 8.20	335,375

(1) Reflects aggregate options outstanding under our 2007 Share Incentive Plan, 2016 Equity Incentive Plan and 2022 Equity Incentive Plan.

(2) Calculation is exclusive of the value of any unvested restricted stock awards.

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

Transactions with related persons, promoters and certain control persons.

None.

Director Independence

The current members of our Board of Directors are Lawrence J. Waldman, Emmanuel Lakios, Raymond A. Nielsen, Robert M. Brill, Debra Wasser and Ashraf Lotfi. Messrs. Waldman, Nielsen, Brill and Lotfi and Ms. Wasser have been determined to be “independent” as defined under Rule 4200 of the Nasdaq Stock Market.

Item 14. Principal Accountant Fees and Services.

The following presents fees for professional audit services rendered by Marcum, LLP, Certified Public Accountants, the Company’s independent registered public accounting firm for the years ended December 31, 2023 and 2022.

	2023	2022
Audit fees	$ 198,275	$ 181,500
Audit-related fees	55,002	20,500
All other fees	-	-
Total fees	$ 253,277	$ 202,000

Audit Fees

Audit fees consisted of the review of the first three quarters and audit of the year-end.

Audit-related Fees

Consisted of the audit of the Company’s defined contribution 401(k) plan and fees associated with registration statements and comfort letter.

Audit Committee Approval

The engagement of the Company’s independent registered public accounting firm is pre-approved by the Company’s Audit Committee. The Audit Committee pre-approves all fees billed and all services rendered by the Company’s independent registered public accounting firm.

PART IV

Item 15. Exhibits, Financial Statement Schedules

3.1 Certificate of Incorporation dated October 12, 1982 (Incorporated herein by reference to the Company’s Form S-1 filed on July 3, 2007).

3.2 Certificate of Amendment of Certificate of Corporation, dated April 25, 1985 (Incorporated herein by reference to the Company’s Form S-1 filed on July 3, 2007).

3.3 Certificate of Amendment of Certificate of Corporation, dated August 12, 1985 (Incorporated herein by reference to the Company’s Form S-1 filed on July 3, 2007).

3.4 Certificate of Amendment of the Certificate of Incorporation, dated December 9, 2016 (Incorporated herein by reference the Company’s Current Report on Form 8-K filed on December 14, 2016).

3.5 Amended and restated By-laws of CVD Equipment Corporation, dated as of October 5, 2016 (Incorporated herein by reference to the Company’s Current Report on Form 8-K filed on October 11, 2016).

4.1 Description of the Company’s Securities (Incorporated herein by reference to the Company’s Annual Report on Form 10-K filed on March 30, 2020).

10.1 Lease Agreement, dated February 9, 2012, by and between FAE Holdings 411519R, LLC and the Company (Incorporated by reference from the Company’s Report on Form 10-Q filed with the Commission on May 15, 2012).

10.2 Assignment Agreement, dated February 9, 2012, by and between FAE Holdings 411519R, LLC and the Company (Incorporated by reference from the Company’s Report on Form 10-Q filed with the Commission on May 15, 2012).

10.3 Joint and Several Hazardous Material Guaranty and Indemnification Agreement, dated March 15, 2012, by and between FAE Holdings 411519R, LLC and the Company (Incorporated by reference from the Company’s Report on Form 10-Q filed with the Commission on May 15, 2012).

10.4 Guaranty of Payment, dated March 15, 2012, by the Company (Incorporated by reference from the Company’s Report on Form 10-Q filed with the Commission on May 15, 2012).

10.5 Agreement to Purchase and Sale, the building and real estate property located at 555 N Research Place, Central Islip, NY, dated March 29, 2021, by and between 555 N Research Corporation, a wholly-owned subsidiary of the Company, and Steel K, LLC. (Incorporated by reference to the Company’s Quarterly Report on Form 10-Q filed with the Commission on May 13, 2021).

10.6 Employment Agreement, dated June 1, 2021, by and between Emmanuel Lakios, the Company’s President and Chief Executive Officer, and the Company. (Incorporated by reference to the Company’s Quarterly Report on Form 10-Q filed with the Commission on August 16, 2021).

10.7 Employment Agreement, dated June 1, 2021, by and between Thomas McNeill, the Company’s Executive Vice President and Chief Financial Officer, and the Company. (Incorporated by reference to the Company’s Quarterly Report on Form 10-Q filed with the Commission on August 16, 2021).

10.8	Assignment, Assumption and Amendment Agreement dated as of July 26, 2021, by and between Town of Islip Industrial Development Agency, 555N Research Corporation and Steel 555 NRP, LLC. (Incorporated by reference to the Company's Quarterly Report on Form 10-Q/A filed with the Commission on March 1, 2022).
10.9	Second Amended and Restated Lease and Project Agreement, dated as of July 1, 2021, by and between Town of Islip Industrial Development Agency and FAE HOLDINGS 411519R, LLC. (Incorporated by reference to the Company's Quarterly Report on Form 10-Q/A filed with the Commission on March 1, 2022).
10.10	Agency Compliance Agreement, dated as of July 1, 2021, by and between Town of Islip Industrial Development Agency, CVD Equipment Corporation and CVD Materials Corporation. (Incorporated by reference to the Company's Quarterly Report on Form 10-Q/A filed with the Commission on March 1, 2022).
10.11	Amended and Restated Sublease Agreement, dated as of July 26, 2021, by and between FAE HOLDINGS 411519R, LLC, CVD Equipment Corporation and CVD Materials Corporation. (Incorporated by reference to the Company's Quarterly Report on Form 10-Q/A filed with the Commission on March 1, 2022).
21.1	List of Subsidiaries
23.1**	Consent of MARCUM, Certified Public Accountants and Advisors, A Professional Corporation (S-8).
31.1**	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer.
31.2**	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer.
32.1**	Section 1350 Certification of Principal Executive Officer.
32.2**	Section 1350 Certification of Principal Financial Officer.
97 **	CVD Equipment Corporation Executive Compensation Clawback Policy
101.INS***	XBRL Instance
101.SCH***	XBRL Taxonomy Extension Schema
101.CAL***	XBRL Taxonomy Extension Calculation
101.DEF***	XBRL Taxonomy Extension Definition
101.LAB***	XBRL Taxonomy Extension Labels
101.PRE***	XBRL Taxonomy Extension Presentation

* Management contract or compensatory plan or arrangement required

** Filed herewith

*** XBRL information is furnished and not filed or a part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, as amended, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

SIGNATURES

In accordance with Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

DATE: March 28, 2024

CVD EQUIPMENT CORPORATION

By: */s/ Emmanuel Lakios*
Name: Emmanuel Lakios
Title: President and Chief Executive Officer

By: */s/ Richard Catalano*
Name: Richard Catalano
Title: Vice President, Chief Financial Officer and Secretary
Principal Financial and Accounting Officer

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

NAME	POSITION	DATE
/s/ Emmanuel Lakios Emmanuel Lakios	President, Chief Executive Officer (Principal Executive Officer)	3/28/2024
/s/ Lawrence J. Waldman Lawrence J. Waldman	Director, Chairman of the Board	3/28/2024
/s/ Raymond A. Nielsen	Director	3/28/2024

Raymond A. Nielsen		
/s/ Robert M. Brill Robert M. Brill	Director	3/28/2024
/s/ Debra Wasser Debra Wasser	Director	3/28/2024
/s/ Ashraf Lotfi Ashraf Lotfi	Director	3/28/2024

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
CVD Equipment Corporation and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of CVD Equipment Corporation and Subsidiaries (the "Company") as of December 31, 2023 and 2022, the related consolidated statements of operations, changes in stockholders' equity and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's 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 audits to obtain reasonable assurance about whether the 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 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition – Estimated Total Contract Costs

Description of the Matter

As discussed in Notes 2 and 3 to the consolidated financial statements, the Company recognizes revenue from the sale of systems ("System Projects") over time by using an input method based on costs incurred as it best depicts the Company's progress toward satisfaction of the performance obligation. Under this method, revenue arising from such contracts is recognized as work is performed based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligations. The estimation of these costs requires judgment by the Company given the unique product specifications and requirements for contracts related to the design, development, and manufacture of the system. During the year ended December 31, 2023, the Company recognized approximately $18.2 million of revenue recognized over time.

Subjective judgment is required by management in determining the assumptions in estimating the estimated costs to complete on contracts for which revenue is recognized over time using a cost-to-cost model. Complex auditor judgment was required in evaluating initial cost estimates and expected costs to complete.

How We Addressed the Matter in Our Audit

The primary procedures we performed to address this critical audit matter included the following:

- Obtaining an understanding of management's process in developing the cost estimates;
- Obtain and review contracts to ensure that the recognition of revenue over time was appropriate;
- Evaluating management's ability to reasonably estimate costs by performing a comparison of the actual costs to prior period estimates, including evaluating the timely identification of circumstances that may warrant a modification to the estimated costs;
- Evaluate management's methodologies and the consistency of management's methodologies over the life of the contracts;
- Tested the original estimated costs and profit margins on System Projects by obtaining the original estimates, comparing the actual costs and profit margins to the original estimates and investigating significant changes; and
- Tested the estimated costs to complete Systems Projects that were not completed during the year ended December 31, 2023 by comparing the estimated cost to complete at December 31, 2023 to actual cost incurred subsequent to December 31, 2023.

/s/ Marcum LLP

Marcum LLP

We have served as the Company's auditor since 2019.

Melville, NY
March 28, 2024

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
Consolidated Balance Sheets
As of December 31, 2023 and 2022
(in thousands, except share amounts)

	2023	2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 14,025	$ 14,365
Accounts receivable, net	1,906	3,788
Contract assets	1,604	2,170
Inventories, net	4,454	2,538
Other current assets	852	797
Total current assets	22,841	23,658
Employee retention credit receivable	-	1,529
Property, plant and equipment, net	12,166	12,596
Intangible assets, net	9	119
Other assets	9	10
Total assets	$ 35,025	$ 37,912
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,203	$ 1,454
Accrued expenses	1,765	2,591
Current maturities of long-term debt	81	77
Deposits from purchasers of MesoScribe assets – note 15	597	-
Contract liabilities	4,908	4,042
Total current liabilities	8,554	8,164
Long-term debt, net of current portion	268	349
Total liabilities	8,822	8,513
Commitments and contingencies (see note 13)		
Stockholders' equity:		
Common stock - $ 0.01 par value – 20,000,000 shares authorized; issued and outstanding 6,824,511 at December 31, 2023 and 6,760,938 at December 31, 2022	68	67
Additional paid-in capital	28,695	27,712
(Accumulated deficit) retained earnings	(2,560)	1,620
Total stockholders' equity	26,203	29,399
Total liabilities and stockholders' equity	$ 35,025	$ 37,912

The accompanying notes are an integral part of the consolidated financial statements

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
Consolidated Statements of Operations
Years ended December 31, 2023 and 2022
(in thousands, except per share amounts)

	2023	2022
Revenue	$ 24,109	$ 25,813
Cost of revenue	19,038	19,186
Gross profit	5,071	6,627
Operating expenses:		
Research and development	2,596	1,906
Selling	1,632	1,216
General and administrative	5,451	5,328
Loss on disposition of Tantaline	162	-
Impairment charge	111	-
Total operating expenses	9,952	8,450
Operating loss	(4,881)	(1,823)
Other income (expense):		
Interest income	577	162
Interest expenses	(23)	(8)
Employee retention credits	-	1,529
Foreign exchange income (loss)	42	(95)
Other income	91	15
Total other income, net	687	1,603
Loss before income tax	(4,194)	(220)
Income tax (benefit) expense	(14)	4
Net loss	$ (4,180)	$ (224)
Loss per common share:		
Basic	$ (0.62)	$ (0.03)
Diluted	$ (0.62)	$ (0.03)
Weighted average number of shares:		
Basic	6,788	6,734
Diluted	6,788	6,734

The accompanying notes are an integral part of the consolidated financial statements

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
Consolidated Statements of Changes in Stockholders' Equity
Years ended December 31, 2023 and 2022
(in thousands, except share amounts)

	Common stock		Additional paid-in	(Accumulated Deficit) / Retained	
	Shares	Par Value	Capital	Earnings	Total
Balance at January 1, 2022	6,723,438	$ 67	$ 27,277	$ 1,844	$ 29,188
Net loss	-	-	-	(224)	(224)
Stock-based compensation	37,500	-	435	-	435
Balance at December 31, 2022	6,760,938	$ 67	$ 27,712	$ 1,620	$ 29,399
Net loss	-	-	-	(4,180)	(4,180)
Stock-based compensation	41,320	1	907	-	908
Exercise of stock options and issuance of shares	22,253	-	76	-	76
Balance at December 31, 2023	6,824,511	$ 68	$ 28,695	$ (2,560)	$ 26,203

The accompanying notes are an integral part of the consolidated financial statements

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
Consolidated Statements of Cash Flows
Years ended December 31, 2023 and 2022
(in thousands)

	2023	2022
Cash flows from operating activities:		
Net loss	$ (4,180)	$ (224)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Loss on disposition of Tantaline	162	-
Impairment charge	111	-
Stock-based compensation	908	435
Depreciation and amortization	792	867
Changes in operating assets and liabilities, net of effects of disposition of Tantaline:		
Accounts receivable	1,841	(2,342)
Contract assets	566	368
Inventories	(1,921)	(1,313)
Income tax receivable	-	716
Employee retention credit receivable	1,529	(1,529)
Other current assets	(47)	(301)
Accounts payable	(154)	293
Accrued expenses	(679)	832
Contract liabilities	866	2,392
Net cash (used in) provided by operating activities	(206)	194
Cash flows from investing activities:		
Net cash used in disposition of Tantaline	(312)	-
Deposits from purchaser of MesoScribe assets	597	-
Purchases of property and equipment	(418)	(665)
Capitalized patent costs	-	(53)
Net proceeds from sale of assets	-	10
Net cash used in investing activities	(133)	(708)
Cash flows from financing activities:		
Proceeds from exercise of stock options	76	-
Payments of long-term debt	(77)	(1,772)
Net cash used in financing activities	(1)	(1,772)
Net decrease in cash and cash equivalents	(340)	(2,286)
Cash and cash equivalents at beginning of year	14,365	16,651
Cash and cash equivalents at end of year	$ 14,025	$ 14,365
Supplemental disclosure of cash flow information:		
Income taxes paid	$ 8	$ 1
Interest paid	$ 24	$ 8
Non-cash investing and financing activities:		
Loan obtained for new equipment	$ -	$ 432

The accompanying notes are an integral part of the consolidated financial statements

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2023 and 2022

Note 1 – Business Description

CVD Equipment Corporation and its subsidiaries (the “Company”) is a New York corporation. Its principal business activities include designing, developing, and manufacturing a broad range of chemical vapor deposition, physical vapor transport, gas control, and other equipment and process solutions used to develop and manufacture materials and coatings for industrial applications and research. Its products are used in production environments as well as research and development centers, both academic and corporate.

We conduct our business through three reportable operating segments: i) CVD Equipment that supplies chemical vapor deposition, physical vapor transport and thermal process equipment; ii) SDC that designs and manufactures ultra-high purity gas and chemical delivery control systems; and iii) CVD Materials that provide products related to advanced materials and coatings.

Note 2 - Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”).

Liquidity

At December 31, 2023, the Company had $ 14.0 million in cash and cash equivalents. The Company anticipates that the existing cash and cash equivalents balance together with potential future income from operations, collections of existing accounts receivable, revenue from its existing backlog of products as of this filing date, the sale of inventory on hand, deposits and down payments against significant orders will be adequate to meet its working capital and capital equipment requirements, and its anticipated cash needs over the next 12 months from the date of issuance of the accompanying Form 10-K.

Reclassifications

In addition, certain reclassifications have been made to the prior period consolidated financial statements to conform to the current period presentation. These reclassifications had no effect on net (loss).

Principles of Consolidation

The consolidated financial statements include the accounts of CVD Equipment Corporation and its wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

Note 2 - Summary of Significant Accounting Policies (continued)

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The Company's significant estimates are the accounting for certain items such as revenues on long-term contracts recognized on the input method, valuation of inventories at the lower of cost or net realizable value; allowance for credit losses; valuation allowances for deferred tax assets, estimated lives and impairment considerations of long-lived assets and valuation of stock-based compensation.

Revenue Recognition

In accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 606 - Revenue from Contracts with Customers ("ASC 606"), the Company records revenue in an amount that reflects the consideration to which the Company expects to be entitled in exchange for goods or services promised to its customers. Under ASC 606, the Company follows a five-step model to: (1) identify the contract with the customer; (2) identify the performance obligations in the contract; (3) determine the transaction price for the contract; (4) allocate the transaction price to the performance obligations; and (5) recognize revenue using one of the following two methods:

Over time

The Company designs, manufactures and sells custom chemical vapor deposition, thermal process equipment and other equipment through contractual agreements. These system sales require the Company to deliver functioning equipment that is generally completed within two to eighteen months from commencement of order acceptance. For systems sales that meet the criteria to recognize revenue over time, the Company recognizes revenue over time by using an input method based on costs incurred as it depicts the Company's progress toward satisfaction of the performance obligation. For system sales that do not meet the criteria to recognize revenue over time based on the contract provisions, the Company recognizes revenue based on point in time.

Under the over time method, revenue arising from fixed price contracts is recognized as work is performed based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligations. Incurred costs include all direct material and labor costs and those indirect costs related to contract performance, such as supplies, tools, repairs and depreciation costs. Contract material costs are included in incurred costs when the project materials have been purchased or moved to work-in-process, and installed, as required by the project's engineering design. Cost based input methods of revenue recognition require the Company to make estimates of costs to complete the projects. In making such estimates, significant judgment is required to

Note 2 - Summary of Significant Accounting Policies (continued)

evaluate assumptions related to the costs to complete the projects, including materials, labor and other system costs. If the estimated total costs on any contract are greater than the net contract revenues, the Company recognizes the entire estimated loss in the period the loss becomes known and can be reasonably estimated. There were no material impairment losses recognized on contract assets during the year ended December 31, 2023 and 2022.

The timing of revenue recognition, billings and collections results in accounts receivables, unbilled receivables or contract assets and contract liabilities on our consolidated balance sheet. Under typical payment terms for our contracts accounted for over time, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals or upon achievement of contractual milestones.

Under ASC 606, payments received from customers in excess of revenue recognized to-date results in a contract liability. These contract liabilities are not considered to represent a significant financing component of the contract because we believe these cash advances and deposits are generally used to meet working capital demands which can be higher in the earlier stages of a contract. Also, advanced payments and deposits provide us with some measure of assurance that the customer will perform on its obligations under the contract.

Contract assets include unbilled amounts typically resulting from system sales under contracts and represents revenue recognized that exceeds the amount billed to the customer.

Contract liabilities include advance payments and billings in excess of revenue recognized. The Company typically receives down payments upon receipt of order and progress payments as the system is manufactured.

Contract assets and contract liabilities are classified as current as these contracts in progress are expected to be substantially completed within the next twelve months.

Point in time

For non-system sales of products and services, revenue is recognized at the point in time when control of the promised products or services is transferred to the Company's customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those products or services (the transaction price). A performance obligation is a promise in a contract to transfer a distinct product or service to a customer and is the unit of account under ASC 606, "Revenue from Contracts with Customers."

For any system equipment sales where the equipment would have an alternative use or where the contract provisions of the contract preclude the use of over time revenue recognition, revenue is recognized at the point in time when control of the equipment is transferred to the customer. For the year ended December 31, 2023 and 2022, all system equipment sales were recorded over time by using an input method.

Note 2 - Summary of Significant Accounting Policies (continued)

Inventories

Inventories (raw materials, work-in-process and finished goods) are valued at the lower of cost (determined on the first-in, first-out method) or net realizable value. Work-in-process and finished goods inventory reflect all accumulated production costs, which are comprised of direct production costs and overhead, and is reduced by amounts recorded in cost of sales as the related revenue is recognized. Indirect costs relating to long-term contracts, which include expenses such as general and administrative, are charged to expense as incurred and are not included in our cost of sales or work-in-process and finished goods inventory.

Obsolete inventory or inventory in excess of management's estimated usage requirement is written down to its estimated net realizable value if less than cost. The Company evaluates usage requirements by analyzing historical usage, anticipated demand, alternative uses of materials, and other qualitative factors. Unanticipated changes in demand for the Company's products may require a write down of inventory, which would be reflected in cost of sales in the period the revision is made.

Product Warranty

The Company typically provides standard warranty coverage on its systems for one year from the date of final acceptance or fifteen months from the date of shipment by providing labor and parts necessary to repair the systems during the warranty period . The Company records the estimated warranty cost when revenue is recognized on the related system. Warranty cost is included in "Cost of revenue" in the consolidated statements of operations. The estimated warranty cost is based on the Company's historical cost. The Company updates its warranty estimates based on actual costs incurred.

Income Taxes

Deferred tax assets and liabilities are determined based on the estimated future tax effects of temporary differences between the financial statements and tax bases of assets and liabilities, as measured by using the future enacted tax rates. Deferred tax expense (benefit) is the result of changes in the deferred tax assets and liabilities. The Company records a valuation allowance against deferred tax assets when it is more likely than not that future tax benefits will not be utilized based on a lack of sufficient positive evidence.

The Company records uncertain tax positions in accordance with ASC 740 on the basis of a two-step process in which (1) we determine whether it is more likely than not the tax position will be sustained on examination by taxing authorities based on the technical merits of the position and (2) for those positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority.

Note 2 - Summary of Significant Accounting Policies (continued)

The Company's policy for global intangible low taxed income ("GILTI") is to treat such amounts as a period cost when incurred.

Impairment of Long-Lived Assets and Intangibles

Long-lived assets consist primarily of property, plant, and equipment. Intangibles consist of patents, copyrights and intellectual property, licensing agreements and certifications. Long-lived assets are reviewed for impairment whenever events or circumstances indicate their carrying value may not be recoverable.When such events or circumstances arise, an estimate of the future undiscounted cash flows produced by the asset, or the appropriate grouping of assets, is compared to the asset's carrying value to determine if impairment exists.If the asset is determined to be impaired, the impairment loss is measured on the excess of its carrying value over its fair value. Assets to be disposed of are reported at the lower of their carrying value or net realizable value.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is determined on a straight-line basis for buildings and building improvements over 5 to 39 years and for machinery and equipment over 5 to 8 years. Depreciation and amortization of assets used in manufacturing are recorded in cost of revenue. Depreciation and amortization of all other assets are recorded as operating expenses.

Intangible Assets

The cost of intangible assets is being amortized on a straight-line basis over their estimated initial useful lives which ranged from 5 to 20 years.

Research and Development

Research and development costs are expensed as incurred and include charges for the development of new technology and transition of existing technology into new products.

Earnings Per Share

Basic earnings per common share is computed by dividing the net income by the weighted average number of shares of common stock outstanding during each period. When applicable, diluted earnings per common share is determined using the weighted-average number of common shares outstanding during the period, adjusted for the dilutive effect of common stock equivalents, consisting of shares that might be adjusted upon exercise of common stock options, unvested restricted shares, and warrants.

Note 2 - Summary of Significant Accounting Policies (continued)

Potential common shares issued are calculated using the treasury stock method, which recognizes the use of proceeds that could be obtained upon the exercise of options and warrants in computing diluted earnings per share. It assumes that any proceeds would be used to purchase common stock at the average market price of the common stock during the period.

Cash and Cash Equivalents

The Company had cash and cash equivalents of $ 14.0 million and $ 14.4 million at December 31, 2023 and 2022, respectively. The Company invests excess cash in treasury bills, certificates of deposit or deposit accounts, all with original maturities of less than three months. Cash equivalents were $ 12.1 million and $ 11.7 million at December 31, 2023 and 2022, respectively.

The Company places most of its temporary cash investments with financial institutions, which from time to time may exceed the Federal Deposit Insurance Corporation limit. The amount in excess of the limit at both December 31, 2023 and 2022 was $ 1.5 million. The Company's cash in our Denmark subsidiary exceeded the government guarantee limit by approximately $ 0.5 million at December 31, 2022.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, and accounts receivable. The Company places its cash equivalents with financial institutions and invests its excess cash primarily in treasury bills, certificates of deposit or deposit accounts. The Company has established guidelines relative to credit ratings and maturities that seek to maintain stability and liquidity.

The Company routinely assesses the financial strength of its customers . In accordance with the "expected credit loss" model, the carrying amount of accounts receivable is reduced by a valuation allowance that reflects the best estimate of the amounts the Company does not expect to collect. In addition to reviewing delinquent accounts receivable, the Company consider many factors in estimating our reserve, including types of customers and their credit worthiness, experience and historical data adjusted for current conditions and reasonable supportable forecasts. The Company records an allowance for credit losses based upon a specific review of all significant outstanding invoices. For those invoices not specifically reviewed, provisions are provided based upon the collection history, current economic trends and reasonable supportable forecasts.

The Company has accounts receivables from certain customers that exceed 10 %. As of December 31, 2023, the accounts receivable balance includes amounts from three customers that represented 37.6 %, 13.0 % and 12.8 % of total accounts receivable, and as of December 31, 2022, two customers that represented 35.7 % and 30.3 % of total accounts receivable.

Note 2 - Summary of Significant Accounting Policies (continued)

Accounts receivable is presented net of an allowance for credit losses of $ 36,000 as of both December 31, 2023 and 2022. The allowance is based on prior experience and management's evaluation of future economic conditions. Measurement of credit losses requires consideration of historical loss experience, including the need to adjust for changing business conditions, and judgments about the probable effects of relevant observable data, including present economic conditions such as delinquency rates and the financial health of specific customers. Future changes to the estimated allowance for doubtful accounts could be material to our results of operations and financial condition.

Sales Concentrations

Revenue to a single customer in any one year can exceed 10 % of our total sales. There were three customers in the year ended December 31, 2023 that represented 14.3 %, 13.5 % and 10.9 % of our revenues, while there was one customer in the year ended December 31, 2022 that represented 29.2 % of our revenues. The loss of a large customer could have a material adverse effect on the Company's business and financial condition.

Export sales to customers represented approximately 17 % of sales for both years ended December 31, 2023 and 2022. Export sales in both 2023 and 2022 were primarily to customers in Europe and Asia. All contracts except those entered into by the Company's subsidiary in Denmark are denominated in U.S. dollars. The Company has not entered into any foreign exchange contracts.

Supplier Risk

The Company relies on suppliers to manufacture many of the components and subassemblies used in its products. Quality or performance failures of the Company's products or changes in its manufacturers' financial or business condition could disrupt the Company's ability to supply quality products to its customers and thereby have a material and adverse effect on its business and operating results. Some of the components and technologies used in the Company's products are purchased and licensed from a single source or a limited number of sources. The loss of any of these suppliers may cause the Company to incur additional transition costs, result in delays in the manufacturing and delivery of its products or cause it to carry excess or obsolete inventory and could cause it to redesign its products.

Fair Value of Financial Instruments

The carrying amounts of financial instruments including cash and cash equivalents, accounts receivable, accounts payable, contract assets and contract liabilities approximate fair value due to the relatively short-term maturity of these instruments. The carrying value of long-term debt approximates fair value based on prevailing borrowing rates currently available for loans with similar terms and maturities.

Note 2 - Summary of Significant Accounting Policies (continued)

Stock-Based Compensation

The Company records stock-based compensation in accordance with the provisions set forth in ASC 718, "Stock Compensation". ASC 718 requires companies to recognize the cost of employee services received in exchange for awards of equity instruments based upon the grant date fair value of those awards over the vesting period. The Company uses the Black-Scholes option-pricing model to compute the estimated fair value of option awards and includes assumptions regarding expected volatility, expected option term, dividend yields and risk-free interest rates.

Shipping and Handling

It is the Company's policy to include freight charges billed to customers in total revenue. The amount included in revenue was $ 55,000 and $ 87,000 for the years ended December 31, 2023 and 2022, respectively.

Recently Adopted Accounting Standards

In June 2016, the FASB issued Accounting Standard Update ("ASU") 2016-13, *Financial Instruments – Credit Losses (Topic 326)* , which require that financial assets measured at amortized cost be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial asset to present the net carrying value at the amount expected to be collected. The income statement reflects the measurement of credit losses for newly recognized financial assets, as well as the increase or decreases of expected credit losses that have taken place during the period. The measurement of expected credit losses is based upon historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. The adoption of the ASU 2016-3 as of January 1, 2023 did not have a material impact on the Company's financial position.

Recently Issued Accounting Standards

In December 2023, the Financial Accounting Standards Board ("FASB") issued ASU 2023-09, " *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*," which requires public business entities to disclose additional information in specified categories with respect to the reconciliation of the effective tax rate to the statutory rate for federal, state, and foreign income taxes. It also requires greater detail about individual reconciling items in the rate reconciliation to the extent the impact of those items exceeds a specified threshold. In addition to new disclosures associated with the rate reconciliation, the ASU requires information pertaining to taxes paid (net of refunds received) to be disaggregated for federal, state, and foreign taxes and further disaggregated for specific jurisdictions to the extent the related amounts exceed a quantitative threshold. The ASU also describes items that need to be disaggregated based on their nature, which is determined by reference to the item's fundamental or essential characteristics, such as the transaction or event that triggered the establishment of the reconciling item and the activity with which the reconciling item is associated. The ASU eliminates the historic requirement that entities disclose information concerning unrecognized tax benefits having a reasonable possibility of

Note 2 - Summary of Significant Accounting Policies (continued)

significantly increasing or decreasing in the 12 months following the reporting date. This ASU is effective for annual periods beginning after December 15, 2024. Early adoption is permitted for annual financial statements that have not yet been issued or made available for issuance. This ASU should be applied on a prospective basis; however, retrospective application is permitted. We are currently evaluating the impact that ASU 2023 – 09 will have on our consolidated financial statements.

In November 2023, the FASB issued ASU 2023-07, " *Segment Reporting (Topic 280): Improvements to Reportable Segments* ," which aims to improve financial reporting by requiring disclosure of incremental segment information on an annual and interim basis for all public entities to enable investors to develop more decision-useful financial analyses. Currently, Topic280 requires that a public entity disclose certain information about its reportable segments. For example, a public entity is required to report a measure of segment profit or loss that the CODM uses to assess segment performance and make decisions about allocating resources. Topic 280 also requires other specified segment items and amounts, such as depreciation, amortization, and depletion expense, to be disclosed under certain circumstances. The amendments in this ASU do not change or remove those disclosure requirements and do not change how a public entity identifies its operating segments, aggregates those operating segments, or applies the quantitative thresholds to determine its reportable segments. This ASU is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. We are currently evaluating the impact that ASU 2023 – 07 will have on our consolidated financial statements.

The Company believes there is no additional new accounting guidance adopted, but not yet effective that is relevant to the readers of our financial statements. However, there are numerous new proposals under development which, if and when enacted, may have a significant impact on our financial reporting.

Note 3 – Revenue

The following table represents a disaggregation of revenue from contracts by end markets for the years ended December 31, 2023 and 2022 (in thousands):

	Year Ended December 31, 2023		
	Over time	Point in time	Total
Energy	$ 4,901	$ 189	$ 5,090
Aerospace	3,427	1,469	4,896
Industrial	6,123	2,821	8,944
Research	3,700	1,479	5,179
Total	$ 18,151	$ 5,958	$ 24,109

	Year Ended December 31, 2022		
	Over time	Point in time	Total
Energy	$ 9,094	$ 58	$ 9,152
Aerospace	95	1,527	1,622
Industrial	5,961	4,856	10,817
Research	2,807	1,415	4,222
Total	$ 17,957	$ 7,856	$ 25,813

The energy market includes customers involved in the manufacture of silicon carbide wafers and batteries. Aerospace market includes customers that manufacture aircraft engines. Industrial end market consists of various end customers in diverse industries. Research market principally represents customers that are universities and other research institutions.

The Company has unrecognized contract revenue of approximately $ 16.3 million at December 31, 2023, which it expects to recognize as revenue within the next twelve months.

Judgment is required to evaluate assumptions including the amount of net contract revenues and the total estimated costs to determine our progress towards contract completion and to calculate the corresponding amount of revenue to recognize.

Changes in estimates for sales of systems occur for a variety of reasons, including but not limited to (i) build accelerations or delays, (ii) product cost forecast changes, (iii) cost related change orders or add-ons, or (iv) changes in other information used to estimate costs. Changes in estimates may have a material effect on the Company's consolidated financial position and results of operations.

Note 3 – Revenue (continued)

Contract assets and contract liabilities on input method type contracts in progress are summarized at December 31 as follows (in thousands):

	2023	**2022**
Costs incurred on contracts in progress	$ 9,500	$ 14,390
Estimated earnings	5,083	10,926
	14,583	25,316
Billings to date	(17,553)	(26,925)
	(2,970)	(1,609)
Deferred revenue related to non-systems contracts	(334)	(263)
	$ (3,304)	$ (1,872)
Included in accompanying consolidated balance sheets under the following captions (in thousands):		
Contract assets	$ 1,604	$ 2,170
Contract liabilities	$ 4,908	$ 4,042

Of the contract liability balances at December 31, 2022 and December 31, 2021, $ 3.7 million and $ 1.7 million was recognized as revenue during the years ended December 31, 2023 and 2022, respectively. Contract assets at December 31, 2021 were $ 2.5 million.

Note 4 - Inventories

Inventories as of December 31 consist of (in thousands):

	2023	**2022**
Raw materials	$ 2,351	$ 2,165
Work-in-process	1,248	373
Finished goods	855	-
Total	$ 4,454	$ 2,538

Note 5 – Property, Plant and Equipment

Major classes of property, plant and equipment consist of the following as of December 31 (in thousands):

	2023	2022
Land	$ 2,220	$ 2,220
Buildings and improvements	12,798	12,530
Machinery and equipment	7,536	7,810
Construction in progress	167	12
Totals at cost	22,721	22,572
Less: accumulated depreciation	(10,555)	(9,976)
Property, plant and equipment, net	$ 12,166	$ 12,596

Machinery and equipment also include furniture and fixtures and software.

Depreciation expense was $ 0.7 million and $ 0.8 million for the years ended December 31, 2023 and 2022, respectively.

The Company entered into an agreement with the Town of Islip Industrial Development Agency (Islip IDA) in July 2021 under which the Company was granted tax incentives whereby the Company agreed to make payments in lieu of all real estate taxes and assessments (PILOT payments). The agreement requires the Company to maintain certain employment levels at its Central Islip, New York facility. The agreement provides for the Islip IDA to recapture tax incentives provided to the Company in certain circumstances. Any recapture of such tax benefits could have a material adverse effect on the Company's financial position and future results of operations and cash flows.

Note 6 – Intangible Assets

Intangible assets consisted of the following (in thousands):

December 31, 2023

	Cost	Accumulated Amortization	Net
Patents	$ 87	$ 78	$ 9

December 31, 2022

	Cost	Accumulated Amortization	Net
Patents	$ 565	$ 446	$ 119

Amortization expense was $ 0.1 million and $ 0.1 million in years ended December 31, 2023 and 2022, respectively, including costs of abandoned patent applications.

The estimated amortization expense related to intangible assets for each of the five succeeding fiscal years and thereafter as of December 31, 2023 is approximately $ 1,000 per year.

Note 7 – Accrued Expenses

Accrued expenses consist of the following as of December 31 (in thousands):

	2023	2022
Accrued wages and benefits	$ 358	$ 995
Accrued vacation	729	905
Other	678	691
Total accrued expenses	$ 1,765	$ 2,591

Note 8 – Long-term Debt

Long-term debt as of December 31 consist of the following (in thousands, except percentages and amounts in notes):

	2023	2022
Equipment loan payable in monthly repayments of $ 8 including interest at 6 % per annum	$ 349	$ 426
Less: current maturities	81	77
Long-term debt, net of current maturities	$ 268	$ 349

In September 2022, the Company entered into a loan agreement to fund the acquisition of machinery equipment in the amount of $ 0.4 million.

Future maturities of long-term debt as of December 31, 2023 are as follows (in thousands):

2024	$	81
2025		87
2026		92
2027		89
Total	$	349

Note 9 – Earnings per Share

The calculation of basic and diluted weighted average common shares outstanding as of December 31 is as follows (in thousands):

	2023	2022
Basic weighted average shares outstanding	6,788	6,734
Effect of potentially dilutive share-based awards	-	-
Diluted weighted average shares outstanding	6,788	6,734

At December 31, 2023, stock options to purchase 846,875 shares of common stock were outstanding and 335,375 were exercisable. At December 31, 2022, stock options to purchase 673,000 shares of common stock were outstanding and 265,000 were exercisable.

At December 31, 2023 and 2022, 846,875 and 673,000 stock options, respectively, were not included in the computation of diluted earnings per share because their effect was antidilutive.

Note 10 – Income Taxes

Loss before income taxes are as follows:

		2023		2022
Domestic	$	(4,073)		(596)
Foreign		(121)		376
Total	$	(4,194)	$	(220)

The expense/(benefit) for income taxes for the years ended December 31 includes the following (in thousands):

		2023		2022
Current:				
Federal	$	(16)	$	1
State		2		3
Total current tax provision		(14)		4
Deferred:				
Federal		-		-
State		-		-
Total deferred tax provision		-		-
Income tax (benefit) expense	$	(14)	$	4

The reconciliation of the federal statutory income tax rate to our effective tax rate for the years ended December 31 is as follows (in thousands):

		2023		2022
Expected provision at federal statutory tax rate at 21 %	$	(881)	$	(46)
Increase (decrease) in valuation allowance		688		(33)
State and local taxes		21		84
Foreign tax rate differential		(1)		4
US taxation of foreign operations		-		80
Federal research and development credits		(75)		(55)
Change in tax rates		-		10
Non-deductible expenses		37		62
Disposition of Tantaline		193		-
Other		4		(102)
Income tax (benefit) expense	$	(14)	$	4

Note 10 – Income Taxes (continued)

The tax effects of temporary differences giving rise to significant portions of the net deferred taxes as of December 31 are as follows (in thousands):

	2023	2022
Deferred income tax assets:		
Net operating loss carryforwards	$ 849	$ 482
R&D tax credit carryforwards	1,863	1,723
Compensation costs	113	10
Vacation accrual	153	174
Intangible assets	38	27
Capitalized research and development	759	356
Other items	303	263
Deferred income tax assets	4,078	3,035
Less: valuation allowance	(3,646)	(2,957)
Deferred income tax assets, net of valuation allowance	432	78
Deferred incomes tax liability:		
Property, plant and equipment	(365)	(11)
Prepaid expenses	(67)	(67)
Deferred income tax asset, net	$ -	$ -

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that the deferred tax assets will be realized. The ultimate realization of deferred tax assets is based on the assessment of available positive and negative evidence to estimate whether sufficient future taxable income will be generated to permit the utilization of existing deferred tax assets. The Company considered all positive and negative evidence when determining the amount of the net deferred tax assets that are more likely than not to be realized. This evidence includes, but is not limited to, historical earnings, scheduled reversal of taxable temporary differences, tax planning strategies and projected future taxable income A significant piece of objective negative evidence evaluated was the cumulative loss incurred over the prior three-year period ended December 31, 2023. Such objective evidence limits the ability to consider subjective evidence such as our projections for future growth. Based on this assessment, we maintained a full valuation allowance against our net deferred tax assets as of December 31, 2023, and 2022. If these estimates and assumptions change in the future, we may be required to reduce our existing valuation allowance resulting in less income tax expense.

For the year ended December 31, 2023, the valuation allowance increased by approximately $ 0.7 million from the prior year primarily from current year operating losses for which no tax benefit was provided.

Note 10 – Income Taxes (continued)

At December 31, 2023, the Company had $ 4.0 million of U.S. federal net operating loss carryforwards. These net operating losses have an indefinite carryforward period but are only available to offset 80% of future taxable income . The Company also has $ 1.9 million of federal research and development tax credits which expire in varying amounts in tax years 2028 through 2042 .

The Company applies the applicable authoritative guidance which prescribes a comprehensive model for the manner in which a company should recognize, measure, present and disclose in its financial statements all material uncertain tax positions that the Company has taken or expects to take on a tax return. As of December 31, 2023 and 2022, the Company had no uncertain tax positions. The Company does not expect that its unrecognized tax benefits will significantly increase or decrease within twelve months.

The Company files federal income tax returns and income tax returns in various state and local tax jurisdictions and in Denmark. The federal tax years open to examination are 2020 to 2023. The Company's state and local tax years that are open to tax examination are generally 2019 to 2023 .

The Inflation Reduction Act ("IRA") and Chips and Science Act ("CHIPS Act") were both enacted in August 2022. The IRA introduced new provisions including a 15% corporate alternative minimum tax for certain large corporations that have at least an average of $1 billion adjusted financial statement income over a consecutive three-tax-year period and a 1% excise tax surcharge on stock repurchases. The CHIPS Act provides a variety of incentives associated with investments in domestic semiconductor manufacturing and related activities. Both the IRA and CHIPS Act are applicable for tax years beginning after December 31, 2022 and had no impact to the Company's consolidated financial statements for the years ended December 31, 2023 and 2022.

Note 11 – Employee Retention Credit

During 2022, the Company conducted an analysis as to whether it was entitled to employee retention credits ("ERC") under the CARES Act as amended by the Taxpayer Certainty and Disaster Tax Relief Act of 2020 and the American Plan Act of 2021. Based on the analysis, the Company determined that it was entitled to an ERC of approximately $ 1.5 million related to payroll paid in the first and third quarters of 2021 under the applicable Internal Revenue Service regulations related to ERCs.

As ERCs are not within the scope of ASC 740, *Income Taxes*, the Company has chosen to account for the ERCs by analogizing to the International Standard IAS 20, *Accounting for Government Grants and Disclosure of Government Assistance.* In accordance with IAS 20, an entity recognizes government grants only when there is reasonable assurance that the entity will comply with the conditions attached to them and the grants will be received. Accordingly, the Company recognized a non-current receivable of $ 1.5 million as of December 31, 2022 and other income of $ 1.5 million for the year ended December 31, 2022. The Company received the ERC credit in July 2023.

Note 12 – Stock-Based Compensation

A summary of the Company's Share Incentive Plans are as follows:

2007 Share Incentive Plan

On December 12, 2007, shareholders approved the Company's 2007 Share Incentive Plan ("2017 Incentive Plan"), in connection therewith, 750,000 shares of the Company's common stock are reserved for issuance pursuant to options or restricted stock that may be granted under the 2017 Incentive Plan through December 12, 2017. The Plan expired in December 2017. As of December 31, 2023, there were 120,000 options outstanding under this plan.

2016 Share Incentive Plan

On December 9, 2016, shareholders approved the Company's 2016 Share Incentive Plan ("2016 Incentive Plan"), in connection therewith, 750,000 shares of the Company's common stock are reserved for issuance pursuant to options or restricted stock that may be granted under the 2016 Incentive Plan through December 9, 2026. As of December 31, 2023, there were 442,125 options outstanding under this plan.

2022 Share Incentive Plan

On July 14, 2022, shareholders approved the Company's 2022 Share Incentive Plan ("2022 Incentive Plan"), in connection therewith, 515,000 shares of the Company's common stock are reserved for issuance pursuant to options or restricted stock that may be granted under the 2022 Incentive Plan through July 14, 2032. As of December 31, 2023, there were 284,750 options outstanding under this plan.

Under the 2016 and 2022 Share Incentive Plans, the purchase price of the common stock under each option plan shall be determined by the Committee, provided, however, that such purchase price shall not be less than the fair market value of the shares on the date such option is granted. The stock options generally expire seven to ten years after the date of grant.

As of December 31, 2023, there were 26,948 shares available for grant under the 2016 Equity Incentive Plan and 188,930 shares available for grant under the 2022 Equity Incentive Plan.

Note 12 – Stock-Based Compensation (continued)

The Company recorded stock-based compensation of $ 0.9 million and $ 0.4 million for the years ended December 31, 2023 and 2022, respectively, that were included in the following line items in our Consolidated Statements of Operations (in thousands):

	2023	2022
Cost of revenue	$ 120	$ 34
Research and development	159	57
Selling	94	27
General and administrative	535	317
Total stock-based compensation expense	$ 908	$ 435

Stock-based compensation expense in both years included approximately $ 0.2 million related to restricted stock awards pursuant to a Director Compensation plan discussed below. The Company recognizes forfeitures of stock awards as they occur.

For the year ended December 31, 2023, the Company granted 254,000 stock options, vesting 25 % per year over four years , with a ten-year life. The Company determined the fair value of stock options granted during the year ended December 31, 2023 is based upon weighted average assumptions as provided below.

Stock price	$ 14.02
Exercise price	$ 14.02
Dividend yield	0%
Expected volatility	72%
Risk-free interest rate	3.39%
Expected life (in years)	6.00

The expected life is the number of years the Company estimates that the awards will be outstanding based on the simplified method that considers the vesting period and contractual period of the option. The Company has 846,875 of outstanding stock options under the three plans at December 31, 2023.

Note 12 – Stock-Based Compensation (continued)

The following table summarizes stock options awards for the years ended December 31, 2023 and 2022:

	Awards (in Shares)	Weighted Average Exercise Price
Outstanding at December 31, 2021	618,500	$ 11.26
Granted	198,500	5.04
Expired / cancelled	(144,000)	11.72
Exercised	-	-

Outstanding at December 31, 2022	673,000	5.70
Granted	254,000	14.02
Expired / cancelled	(44,500)	6.57
Exercised	(35,625)	4.53
Outstanding at December 31, 2023	846,875	8.20

The following table summarizes information about the outstanding and exercisable options at December 31, 2023:

	Options Outstanding				Options Exercisable		
Exercise Price Range	Number Outstanding	Weighted Average Remaining Contractual	Weighted Average Exercise Price	Intrinsic Value	Number Exercisable	Weighted Average Exercise Price	Intrinsic Value
$ 4.00 - 7.00	463,375	7.9	$ 4.55	$ 76,655	195,375	$ 4.47	$ 37,064
$ 7.01 - 10.00	20,000	4.3	$ 8.07	$ -	20,000	$ 8.07	$ -
$ 10.01 - 13.00	130,000	4.0	$ 11.51	$ -	120,000	$ 10.52	$ -
$ 13.01 - 16.00	233,500	9.2	$ 14.11	$ -	-	$ -	$ -

As of December 31, 2023, there was $ 2.4 million of unrecognized compensation costs related to stock options expected to be recognized over a weighted average period of 2.6 years.

Restricted Stock Awards

Pursuant to the Director Compensation plan approved on October 11, 2021 , each of the five independent directors is entitled to compensation for an annual equity retainer in the amount of $ 40,000 per director, to be automatically granted on the date of the Company's annual meeting of shareholders.

Note 12 – Stock-Based Compensation (continued)

The following table summarizes restricted stock awards for the years ended December 31, 2023 and 2022:

	Shares of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested outstanding at January 1, 2022	-	$ -
Granted	32,000	5.02
Vested	(32,000)	5.02
Forfeited or cancelled	-	-
Unvested outstanding at December 31, 2022	-	-
Granted	41,320	6.65
Vested	(24,187)	6.81
Forfeited or cancelled	-	-
Unvested outstanding at December 31, 2023	17,133	$ 6.53

The fair value of the restricted stock awards is recorded as stock-based compensation expense over the one-year vesting period and totaled $ 0.17 million $ 0.16 million for the years ending December 31, 2023 and 2022, respectively.

Restricted Stock Units

In prior years, the Company issued restricted stock units or RSUs. During the year ended December 31, 2022, 5,500 RSUs vested which had an intrinsic value of $ 22,745 . No restricted stock units vested during the year ended December 31, 2023 and there were no RSUs outstanding as of December 31, 2023 and 2022.

Note 13 – Defined Contribution Plan

The Company maintains a 401(k) Plan for the benefit of all eligible employees. All employees as of the effective date of the 401(k) Plan became eligible. An employee is eligible to become a participant after three months of continuous service.

Participants may elect to contribute from their compensation any amount up to the maximum deferral allowed by the Internal Revenue Code. Employer contributions are optional.

Effective July 1, 2022, the Company implemented a matching contribution of 50 % of an employee's contributions up to 6 % of their compensation. The Company recorded compensation expense of $ 243,000 and $ 90,000 during the years ended December 31, 2023 and 2022, respectively, for matching contributions to the 401(k) plan.

No discretionary employer contribution has been made for 2023 and 2022.

Note 14 – Segment Reporting

The Company operates through three segments: CVD Equipment, Stainless Design Concepts (“SDC”) and CVD Materials. The CVD Equipment segment manufactures and sells chemical vapor deposition, physical vapor transport and similar equipment. SDC manufactures ultra-high purity gas control systems. The CVD Materials segment provides material coatings for aerospace, medical, electronic and other applications. The Company evaluates performance based on several factors, of which the primary financial measure is income (loss) before taxes.

The Company’s corporate administration activities are reported in the “Corporate” column. These activities primarily include expenses related to certain corporate officers and support staff, expenses related to the Company’s Board of Directors, stock option expense for shares granted to corporate administration employees, certain consulting expenses, investor and shareholder relations activities, and all of the Company’s legal, auditing and professional fees, and interest expense.

Elimination entries included in the “Eliminations” column represent intersegment revenues and cost of revenues that are eliminated in consolidation. Intersegment sales for the year ended December 31, 2023 and 2022 by the SDC segment to the CVD Equipment segment were $ 439,000 and $ 573,000 , respectively. Intersegment sales by the CVD Equipment segment to the SDC segment for the year ended December 31, 2023 were $ 109,000 . There were no intersegment sales by the CVD Equipment segment to the SDC segment during the year ended December 31, 2022.

The following table presents certain information regarding the Company’s segments as of and for the years ended December 31, 2023 and December 31, 2022 (in thousands, including amount in notes):

2023

	CVD Equipment	SDC	CVD Materials	Corporate	Eliminations	Consolidated
Assets	$ 31,401	$ 3,468	$ 211	$ -	$ (55)	$ 35,025
Revenue	$ 16,334	$ 7,139	$ 1,184	$ -	$ (548)	$ 24,109
Operating (loss) income(1)	(2,129)	1,677	(193)	(4,118)	(118)	(4,881)
Pretax (loss) income (1)	(2,070)	1,677	(141)	(3,542)	(118)	(4,194)
Depreciation and amortization	$ 620	$ 49	$ 123	$ -	$ -	$ 792
Purchases of property, plant & equipment	$ 404	$ 14	$ -	$ -	$ -	$ 418

2022

	CVD Equipment	SDC	CVD Materials	Corporate	Eliminations	Consolidated
Assets	$ 31,622	$ 4,149	$ 2,099	$ -	$ 42	$ 37,912
Revenue	$ 16,674	$ 6,541	$ 3,171	$ -	$ (573)	$ 25,813
Operating (loss) income	(1,430)	1,546	1,050	(2,989)	-	(1,823)
Pretax (loss) income (2)	(156)	1,849	1,076	(2,989)	-	(220)
Depreciation and amortization	$ 652	$ 49	$ 166	$ -	$ -	$ 867
Purchases of property, plant & equipment (3)	$ 653	$ 3	$ 3	$ -	$ -	$ -

(1) CVD Materials segment includes loss on sale of Tantaline of $ 0.2 million and an impairment charge related to MesoScribe fixed assets of $ 0.1 million.
(2) Includes other income related to ERCs of $ 1,103 , $ 303 and $ 123 for the CVD, SDC and Materials segments, respectively.
(3) Include $ 0.4 million of purchased equipment financed with a loan

Note 15 – CVD Materials – Tantaline and MesoScribe Subsidiaries

Tantaline Subsidiary

On May 26, 2023, the Company sold its Tantaline subsidiary located in Nordborg, Denmark in exchange for a nominal amount at closing and an earn-out provision based on any net income that Tantaline may earn during the five-year period ending December 31, 2027. The Company recorded a loss of $ 0.2 million upon the sale. Any earn-out amounts will be recognized when and if any such amounts become probable of receipt.

The decision to sell Tantaline was based on the Company’s ongoing strategy to focus on the equipment business consisting of the CVD Equipment and SDC segments and reduce its focus on the non-core CVD Materials business.

Including the loss on disposition of $ 0.2 million, the revenues and net income of Tantaline were $ 0.5 million and $ 0.1 million, respectively, for the year ended December 31, 2023. The total assets and total liabilities of the Tantaline subsidiary were $ 1.1 million and $ 0.4 million as of December 31, 2022.

MesoScribe Subsidiary

On August 8, 2023, the Company entered into a Purchase and License Agreement (the “Agreement”) with a third-party. Pursuant to the Agreement, the Company will sell certain proprietary assets relating to its plasma spray technology and material deposition system and grant a non-exclusive license to use certain of the Company’s related intellectual property as more fully described in the Agreement, for an aggregate purchase price of $ 0.9 million. The purchase price is payable in several installments and contingent upon certain performance metrics and other milestones.

The Company will continue to fulfill remaining orders for MesoScribe products through the end of 2024 at which time it plans to cease the remaining operations of MesoScribe and dispose of any remaining equipment. During the year ended December 31, 2023, the Company recorded an impairment charge of $ 0.1 million for certain equipment of MesoScribe based on its decision to cease the operations of MesoScribe upon fulfillment of remaining orders. There were no impairment charges recorded in 2022.

The Company received payments under the Agreement in the amount of $ 0.6 million which has been reflected as “deposits from purchaser” in the accompanying consolidated balance sheet as of December 31, 2023. The Company expects the transaction to be completed in 2024 with the shipment of the equipment to the purchaser.

The revenues and net income of MesoScribe were $ 0.7 million and $ 33,000 for the year ended December 31, 2023, including the impairment charge of $ 0.1 million.

The total assets and total liabilities of the MesoScribe subsidiary were $ 0.2 million and $ 0.7 million, respectively, as of December 31, 2023 and $ 0.9 million and $ 0.1 million, respectively, as of December 31, 2022.

Note 16 – Risks and Uncertainties

The Company currently operates in a challenging economic environment as the global economy continues to confront the remaining impacts from the pandemic, geopolitical conflicts, inflationary pressures, and adverse supply chain disruptions. The specific impacts on the Company have included:

- Significant geopolitical developments across Europe and Asia (including the war in Ukraine) have and may continue to restrict the Company's ability to procure raw materials and components such as nickel and integrated circuits, as well as impact the Company's ability to sell its products into China, Russia and other Eastern European and Asian regions.

- Supply chain disruptions have led to much longer lead times to acquire raw materials for production and has led to inflationary pressures in both materials and labor. These supply chain disruptions have impacted the Company's ability to recognize revenue timelier as it delays the Company's manufacturing processes.

While management has initiated actions to mitigate the potential negative impacts to its revenue and profitability, the Company is unable to predict the impact that the above uncertainties may have on its future results of operations and cash flows.

Exhibit 21.1

CVD EQUIPMENT CORPORATION
SUBSIDIARIES OF REGISTRANT

SUBSIDIARY NAME	STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION
CVD Materials Corporation	New York
CVD MesoScribe Technologies Corporation	New York
FAE Holdings 411519R, LLC	New York

Exhibit 23.1

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statement of CVD Equipment Corporation on Form S-8 (File No. 333-138903, 333-153186, and 333-217439) and Form S-3 (File No. 333-271066) of our report dated March 28, 2024 with respect to our audits of the consolidated financial statements of CVD Equipment Corporation and Subsidiaries as of December 31, 2023 and 2022 and for each of the two years in the period ended December 31, 2023, which report is included in this Annual Report on Form 10-K of CVD Equipment Corporation for the year ended December 31, 2023.

/s/ Marcum LLP

Marcum LLP
Melville, NY
March 28, 2024

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Emmanuel Lakios, certify that:

1. I have reviewed this annual report on Form 10-K of CVD Equipment Corporation;

2. Based upon 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 upon 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 control 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 data; 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.

Dated: March 28, 2024

/s/ Emmanuel Lakios
President, Chief Executive Officer

Exhibit 31.2

Certification of Principal Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Richard Catalano, certify that:

1. I have reviewed this annual report on Form 10-K of CVD Equipment Corporation;

2. Based upon 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 upon 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 control 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 data; 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.

Dated: March 28, 2024

/s/ Richard Catalano
Executive Vice President and
Chief Financial Officer

Exhibit 32.1

Certification of Principal Executive Officer
Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

I, Emmanuel Lakios, President and Chief Executive Officer of CVD Equipment Corporation, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge, the annual report on Form 10-K for the period ending December 31, 2023 of CVD Equipment Corporation (the “Form 10-K”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of CVD Equipment Corporation.

Dated: March 28, 2024	*/s/ Emmanuel Lakios*
	Emmanuel Lakios Chief Executive Officer (Principal Executive Officer)

Exhibit 32.2

Certification of Principal Financial Officer
Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

I, Richard Catalano, Chief Financial Officer of CVD Equipment Corporation, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge, the annual report on Form 10-K for the period ending December 31, 2023 of CVD Equipment Corporation (the “Form 10-K”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of CVD Equipment Corporation.

Dated: March 28, 2024

/s/ Richard Catalano
Richard Catalano
Executive Vice President and
Chief Financial Officer
(Principal Financial Officer)

Exhibit 97

EXECUTIVE COMPENSATION CLAWBACK POLICY

A. Introduction

The Board of Directors (the "**Board**") of CVD Equipment Corporation (the "**Company**") and its wholly owned subsidiaries have adopted this policy (this "**Policy**") to provide for the recovery or "clawback" of erroneously awarded incentive-based compensation from certain executive officers in accordance with Section 10D of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**") and Rule 10D-1 thereunder and the applicable listing rules of the Nasdaq Stock Market ("**Nasdaq**"), including Nasdaq Listing Rule 5608.

In the event that the Company is required to prepare an Accounting Restatement (as defined below) due to the Company's material noncompliance with any financial reporting requirement under the securities laws, the Company will reasonably promptly recover Incentive-Based Compensation (as defined below) from any of the Company's current or former executive officers to the extent such Incentive-Based Compensation was: (i) "Received" (as defined below) during the three-year period preceding the date the Company is required to prepare the Accounting Restatement, and (ii) in excess of what would have been paid to the executive officer under the Accounting Restatement.

This Policy shall be effective as of the date it is adopted by the Board (the " **Effective Date**") and shall apply to Incentive Compensation that is approved, awarded, or granted to Covered Executives (as defined below) on or after October 2, 2023.

B. Administration

This Policy shall be administered by the Compensation Committee of the Board (the " **Committee**"). The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy. Any determinations made by the Compensation Committee shall be final and binding on all affected individuals.

C. Covered Executives

This Policy applies to the Company's current and former executive officers, as determined by the Board in accordance with Section 10D of the Exchange Act and the applicable Nasdaq listing standards, and such other senior executives/employees who may from time to time be deemed subject to the Policy by the Committee ("**Covered Executives**"). For the avoidance of doubt, the term "Covered Executives" shall include (i) any individual currently of previously designated as an "officer" of the Company as defined in Rule 16a-1(f) under the Exchange Act, and (ii) shall include each "executive officer" who is or was identified pursuant to Item 401(b) of Regulation S-K.

D. Accounting Restatement

For the purposes of this Policy, an "Accounting Restatement" shall mean an accounting restatement of the Company's financial statements due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error (i) in previously issued financial statements that is material to the previously issued financial statements, or (ii) that is not material to previously issued financial statements, but would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period, within the meaning of Rule 10D-1 and Rule 5608.

E. Incentive Compensation; Financial Reporting Measure

For purposes of this Policy, "Incentive Compensation" means any compensation granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure (including cash and stock options awarded as compensation). Financial Reporting Measures are measures that are determined and presented in accordance with the accounting principles used in the Company's financial statements, and any measures that are derived wholly or in part from such measures, as well as the Company's stock price and total stockholder return.

F. Application

In the event the Company is required to prepare and file an Accounting Restatement, the Committee will require the recovery of any excess Incentive Compensation "Received"[1] by any Covered Executive during the three (3) completed fiscal years immediately preceding the date on which the Company is required to prepare an Accounting Restatement.

G. Excess Incentive Compensation

The amount to be recovered will be the excess of the Incentive Compensation paid to the Covered Executive based on the erroneous data over the Incentive Compensation that would have been paid to the Covered Executive had it been based on the restated results, as determined by the Committee. These determinations are made on a pre-tax basis. If the Committee cannot determine the amount of excess Incentive Compensation received by the Covered Executive directly from the information in the Accounting Restatement, then it will make its determination based on a reasonable estimate of the effect of the Accounting Restatement.

H. Recovery; Clawback

The Committee shall recover any excess Incentive Compensation in accordance with this Policy unless such recovery would be impracticable, as determined by the Committee in accordance with Rule 10D-1 of the Exchange Act and any applicable listing rules or standards adopted by Nasdaq. The Committee will determine, in its sole discretion, the method for recovering Incentive Compensation hereunder which shall include, without limitation any remedial and recovery method permitted by applicable law and shall be applied to the fullest extent of applicable law. Any right of recovery hereunder is in addition to, and not in lieu of, any other remedies or rights that may be available to the Company under applicable law, regulation or rule, and pursuant to the terms of any similar policy or recovery provision in any applicable employment agreement, severance agreement, equity award agreement, bonus plan, or similar agreement or plan, and any other legal remedies available to the Company. The provisions of this Policy are in addition to, and not in lieu of, any rights of recovery the Company may have under Section 304 of Sarbanes-Oxley Act of 2002.

I. Prohibition on Indemnification and Insurance

The Company, its subsidiaries, and its affiliates shall not indemnify any Covered Executives against the loss of any erroneously awarded Incentive Compensation, nor shall they pay for, or reimburse any Covered Executive for any insurance policy entered into by a Covered Executive that provides for coverage (full or partial) in connection with any recovery obligation pursuant to this Policy.

[1] Incentive Compensation is deemed "Received" in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive Compensation award is attained, even if the payment or grant of the Incentive Compensation occurs after the end of that period.

J. Interpretation

The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy. It is intended that this Policy be interpreted in a manner that is consistent with the requirements of Section 10D of the Exchange Act and any applicable rules or standards adopted by the Securities and Exchange Commission and any applicable listing rules or standards adopted by Nasdaq.

K. Amendment; Termination

The Committee may amend this Policy from time to time in its discretion and shall amend this Policy as it deems necessary to reflect final regulations adopted by the Securities and Exchange Commission under Section 10D of the Exchange Act and to comply with any applicable listing rules or standards adopted by Nasdaq. The Committee may terminate this Policy at any time.

L. Successors

This Policy shall be binding and enforceable against all Covered Executives and their beneficiaries, heirs, executors, administrators or other legal representatives.

M. Mandatory Disclosures

The Company shall file this Policy as an exhibit to its Annual Report on Form 10-K and, if applicable, disclose information relating to the occurrence of an Accounting Restatement in accordance with applicable law, including, but not limited to, the Exchange Act and any applicable listing rules or standards adopted by Nasdaq. In the event the Company is required to clawback any erroneously awarded incentive-based compensation from any executive officer in accordance with the Exchange Act and any applicable listing rules or standards adopted by Nasdaq, and the occurrence of such is disclosed by the Company in a public filing required by the Exchange Act, the Company will disclose (i) the aggregate amount recovered, or (ii) if no amount was recovered, the absence of a recoverable amount.