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

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2022

☐ **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 *(State or Other Jurisdiction of Incorporation or Organization)*	11-2621692 *(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: $19,375,591 at June 30, 2022.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date: 6,778,438 shares of Common Stock, $0.01 par value at March 15, 2023.

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 system;*
- *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 develop a PVT200 to grow silicon carbide crystals for 200mm wafters and epitaxy equipment for silicon carbide waters;*
- *uncertainty as to our future profitability;*
- *uncertainty as to any future expansion of the Company;*
- *uncertainty as to our ability to adequately obtain raw materials and components from foreign markets in light of geopolitical developments; and*
- *the continued effect of the COVID-19 pandemic on our business and operations (including with respect to supply chain disruptions), and those of our customers, suppliers and other third parties.*

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. Description of Business.

Definitions

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 CVD Tantaline ApS, and CVD MesoScribe Technologies Corporation) collectively "CVD Materials"), FAE Holdings 411519R LLC and 555 N Research Corporation except where the context otherwise requires.

Overview

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 other locations in Saugerties, New York and Nordborg, Denmark.

We design, develop, and manufacture a broad range of equipment 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.

In January 2021, our Board of Directors appointed Emmanuel Lakios as President and Chief Executive Officer and directed him to evaluate our overall business strategy and operations to improve sales growth and return the Company to profitability. We continue to monitor the results of our growth and profitability initiatives, and we have taken actions as required to improve our results in line with anticipated revenue levels.

Key Company Strengths

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, 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 many 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" and aerospace. 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 has yielded multisystem orders to one company that manufactures silicon carbide wafers and a single system to another company that is working on battery nanomaterials. Both technologies are essential for the support of the EV market. These systems should provide us with standard product 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 success of recently introduced PVT150 system that is used to produce silicon carbide crystals for 150mm silicon carbide wafers. This planned expansion includes the development of the PVT200 system that would be used to produce silicon carbide crystals for the manufacture of 200mm wafers. Other products under development include an annealing furnace and epitaxy system, both of which are used in the manufacturing process of silicon carbide wafers.

Also during 2022, we 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.

We have generally gained new customers through our industry reputation, as well as limited print advertising and trade show attendance which had been impacted by the COVID-19 pandemic. We began attending trade shows in 2022 and expect to expand our attendance at trade shows 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 and defense – 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, 2022, we have received orders for 30 of our PVT150 physical vapor transport systems from a customer, which uses our systems to grow silicon carbide crystals that are made into 150mm silicon carbide wafers for use in power electronics. During the second half of 2022, we initiated the marketing launch of the PVT150 on our website and at a leading trade show. 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. Both systems were completed in 2022.

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. While the aerospace industry has been impacted by the COVID-19 pandemic, according to industry forecasts, the demand for CMCs for jet engines is expected to grow in the future. Recently, there were announcements of airlines ordering airplanes that use CMCs in the gas turbine engines.

We continue to engage customers in the aerospace market in what we believe will be an eventual recovery in gas turbine jet engine demand. We believe that this will drive demand for CMCs for which we provide production solutions and have an installed base of systems. During 2022, we received an order for a production CVI system valued at approximately $3.7 million. The system will be used to manufacture CMCs for aerospace gas turbine jet engines. We believe this order may reflect the beginnings of a recovery in aircraft manufacturing as well as the need of jet engine manufacturers to develop more fuel-efficient 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 offer 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. - 150mm SiC boule anneal furnace under development - HVPE400 : polycrystalline GaN (legacy product) **R&D Application:** - SiC Epitaxy single wafer system (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	Next generation gas turbine jet engines are incorporating CMC material for the hot section or exhaust of the engine to improve fuel efficiency.	**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. - 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-Silicon Quality Control 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 Tantaline and MesoScribe product lines. Our MesoScribe product line supports the aerospace and defense markets with novel robust direct write instrumentation. Our CVD Tantaline product line consists of chemical-resistant coating services to many industrial applications. Neither product line is considered as a core business.

Bookings

During 2022, bookings of new orders from customers was approximately $33.1 million, representing an increase of approximately 56.6% compared to 2021 bookings of $21.1 million. We have achieved order growth in all segments, including a 100% growth in the CVD Equipment segment of our business, with 33 system orders in 2022 of which 24 orders were for PVT150 systems. Our bookings increased in the SDC segment but declined in our CVD Materials segment which includes the Tantaline and MesoScribe product lines.

Segments

CVD Equipment segment supplies state-of-the-art chemical vapor deposition and thermal process equipment targeting growth production markets as well as systems for use in research, development. This includes systems marketed under the FirstNano product brand. Utilizing our 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, the Company provides equipment to and collaborates with laboratory scientists to bring state-of-the-art processes from the research laboratory into production. CVD equipment group provide 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 segment 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 segment continues to be a non-core business with several elements and product groups. It consists of the Tantaline® corrosion resistant surface treatment and MesoScribe's direct write printed electronics business. The end markets for both entities are considered limited and not core to our business. Management continues to evaluate options for both businesses.

Tantaline® treatment is a diffusion bonded protective layer of tantalum formed by chemical vapor deposition on the surface of common materials. Since early 2021, all sales and technical support has been consolidated into our European facility located in Nordborg, Denmark.

MesoScribe Technologies 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.

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 – A method of coating or growing material through a chemical recombination at elevated temperatures onto or within pours 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 deposition is the process of depositing or growing on a substrate and the process of depositing or growing material into the pours of materials. 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 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 150mm substrates or wafers. It is at present our flagship product for the SiC market. 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 200mm version is under development and planned for launch in 2023. 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 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.

Tantaline® Corrosion Resistant Coating - Tantaline® treatment is provided as part of either a finished product or as a service applied to customer sourced components. These include valves, fittings, fasteners, vessels, bellows, and a wide range of custom designed items. The Tantaline® treatment improves the corrosion resistance of these base stainless-steel parts extending the service life and increasing value in a wide range of applications.

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. Since the acquisition of the MesoPlasma technology, the business has primarily been funded by external defense, government and private contracts.

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 (that were impacted by the COVID-19 pandemic in 2020 and 2021) and our internet websites. The Company plans to expand its market activities in 2023 including 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, 2022, one customer represented 29.2% of our revenues, while no customers exceeded 10% of revenue during the year ended December 31, 2021. 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, 2022, approximately $4.4 million or 17% of our revenues were generated by sales to customers outside the U.S., compared to approximately $4.3 million or 26% for the year ended December 31, 2021.

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 in both the production and research market. In the production and research markets, we also compete with in customer in house-built 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 Tantaline and MesoScribe subsidiaries. Tantaline has few competitors for a tantalum deposition corrosion coating due to the limited size of the market. 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. Presently, many of our suppliers have been adversely impacted by the ongoing supply chain disruptions due to the remaining effects of the COVID-19 pandemic and geopolitical developments across Europe and Asia. This has led to longer lead times for purchasing materials and increases in the costs of many components.

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, 2022, our backlog was approximately $17.8 million, compared to $10.4 million as of December 31, 2021, an increase of $7.4 million. Our backlog at December 31, 2022 consists of approximately $16.2 million remaining performance obligations for contracts in progress and the balance of approximately $1.6 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 change on an ongoing basis 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 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, 2022, we had 136 employees. We had 69 employees in manufacturing, 34 in engineering (including research and development and efforts related to product improvement) 4 in field service, 10 in sales and marketing and 19 in general management, maintenance and administration, compared to 111 employees as of December 31, 2021. 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.

Our highest priorities throughout the pandemic were, and continue to be, the health and well-being of our employees, customers, suppliers, and stakeholders. From the beginning of the pandemic, we have taken precautions to protect our employees, visitors, and customers while minimizing disruption to our business.

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.

Diversity and Inclusion

We are committed to building and sustaining a culture of diversity encourage 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 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. Risk Factors

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

Risks related to sales and product development

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 2022, one customer accounted for 29.2% 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. Major customers may also seek, and on occasion receive, pricing, payment, intellectual property-related, or other commercial terms that are less favorable to us and can hurt our competitive position.

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 of orders customized systems including our chemical vapor deposition equipment and annealing and diffusion 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, 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;
- the effects of the COVID-19 pandemic; 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 portion of our revenues are 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;
- 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); and
- The effects of the COVID-19 pandemic on our employees, suppliers and other third-parties upon which we rely.

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.

The COVID-19 pandemic adversely impacted worldwide supply chains and our ability to obtain component parts. Subsequent 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. Furthermore, disruptions and delays in the ability of our third-party freight carriers to transport these items to our manufacturing facility also continues to be a challenge. In 2022, we 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 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 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 do not manufacture many components used in the production of our products, and consequently, we use numerous unrelated suppliers of materials and components. Due to the impact of the COVID-19 pandemic and 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, Saugerties, New York and Nordborg, Denmark and 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, Saugerties, New York and Nordborg, Denmark and could be affected by multiple weather risks, most notably hurricanes for our Central Islip facility which 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

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, 2022, 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.

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.

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.

A pandemic, epidemic or outbreak of an infectious disease such as COVID-19 in the United States or worldwide has adversely affected our business.

Although we expect conditions relating to COVID-19 will continue to improve, the COVID-19 pandemic has had and if conditions deteriorate again, could continue to have an adverse effect on the United States and global economies, as well as on aspects of our business, operations, and financial condition and those of third parties on whom we rely.

We previously experienced some decreases in product demand in certain of our other businesses. If conditions related to the pandemic were to deteriorate, we expect that parts of our business could again suffer negative impacts from the pandemic.

On the supply side, we are experiencing continued but moderating challenges with the supply of raw materials and components used in the production of our products. There are currently industry wide supply shortages of certain raw materials and electronic components. We have experienced raw material cost increases because of the COVID-19 pandemic, which will likely continue. In addition, while logistics capacity constraints are improving, we continue to experience freight surcharges and expect these to continue at least for the near term.

With respect to our personnel, although we adhere to government mandated and Environmental, Health and Safety protocols, an outbreak of COVID-19 at one or more of our facilities could cause shutdowns of facilities and a reduction in our workforce, which could dramatically affect our ability to operate our business and our financial results.

The duration of the COVID-19 pandemic is unknown, and it is difficult to predict the full extent of potential impacts the pandemic could have in the future on our business, operations, and financial results, or on our customers, suppliers, logistics providers, or on the global economy.

Item 1B. **Unresolved Staff Comments**

None.

Item 2. **Description of Property.**

Our corporate headquarters, research and development, manufacturing and process coating facilities as of December 31, 2022 are as follows:

Owned Locations	Size (sf)	Segment	Mortgage/Loan	Principal use
Central Islip, NY	130,000	CVD Equipment	No	Corporate headquarters; R&D; Manufacturing
Saugerties, NY	22,000	SDC	No	Manufacturing; Administration;

Leased Locations	Size (sf)	Segment	Lease term	Principal use
Nordborg, Denmark	7,793	CVD Materials	9/30/22 (1)	Process coatings;

(1) The lease term expires the later of 9/30/22 or upon four months written notice by CVD or landlord.

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 15, 2023, there were approximately 54 holders of record and approximately 3,300 beneficial owners of our common stock, and the closing sales price of our common stock as reported on the NASDAQ Capital Market was $10.94.

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.

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, 2022.

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	673,000	$	5.70	466,698
Equity compensation plans not approved by security holders	--		N/A	--
Total	673,000	$	5.70	466,698

(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.

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 2022, the CVD team accomplished a number of milestones, including:

- Overall 57% revenue growth, led by sales of our PVT150 system that is used to grow silicon carbide crystals;
- Received orders for 24 of our PVT150 systems in 2022 and a cumulative total orders of 30 PVT150 systems in 2021 and 2022. We commenced marketing of our PVT150 system to other potential customers during the latter part of 2022.
- Received a $3.7 million order from a major aerospace company for the production of a CVI system. The system will be used by our customer to manufacture CMCs) for their gas turbine jet engines.
- Total bookings for 2022 were approximately $33.1 million, an increase of $11.9 million or 56.6% as compared to 2021.
- Increased our backlog by $7.4 million to $17.8 million.
- Expanded our facilities to enhance our manufacturing capabilities.

Business Update

Since early 2021, we have focused on bolstering our core business of equipment manufacturing. This has resulted in the rationalization of our CVD Materials business, including the consolidation of our Tantaline business into our Nordborg, Denmark facility.

Our core strategy is to focus on growth market applications end-user markets related to the "electrification of everything" and aerospace. 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. These crystals are than further processed into silicon carbide wafters by our customer 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. During 2022, we received an additional 24 orders from the same customer. We also launched our marketing campaign for the PVT150 in the latter part of 2022 as we seek orders from other potential customers.

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 believe that the receipt of a $3.7 million order from a major aerospace company in 2022 for the production of chemical vapor infiltration system reflects the beginnings of a revival in aircraft manufacturing. In prior years, we had sold Tow-Coating Systems to manufacture CMCs to another major jet engine manufacturer and have an installed base of such systems at that customer.

During 2022, new order bookings approximated $33.1 million, representing an increase of approximately 56.6% compared to bookings of $21.1 million in 2021. We have achieved order growth in all segments, including a 100% growth in the CVD equipment portion of the business, with 33 system orders in 2022, that included the 24 PVT150 systems, as compared to a total of 23 systems booked in 2021.

Results of Operations

Years Ended December 31, 2022 and 2021

The following table presents revenue and expense line items reported in our Consolidated Statements of Operations for the years ended December 31, 2022 and 2021 and the period-over-period dollar and percentage changes for those line items (in thousands, except percentages).

	December 31, 2022	December 31, 2021	Change	Percent
Revenue	$ 25,813	$ 16,447	9,366	57%
Cost of revenue	19,186	13,370	5,816	44%
Gross profit	6,627	3,077	3,550	115%
Operating expenses				
Research and development	1,906	1,785	121	7%
Selling and shipping	1,216	864	352	41%
General and administrative	5,328	5,092	236	5%
Total operating expenses	8,450	7,741	709	9%
Operating loss	(1,823)	(4,664)	2,841	(61%)
Other income (expense):				
Interest income	162	6	156	*
Interest expense	(8)	(261)	253	*
Employee retention credits	1,529	-	1,529	*
Foreign exchange loss	(95)	(143)	48	*
Gain on sale of building	-	6,894	(6,894)	*
Gain on debt extinguishment	-	2,443	(2,443)	*
Other income	15	500	(485)	*
Total other income, net	1,603	9,439	(7,836)	*
(Loss) income before income tax	(220)	4,775	(4,995)	*
Income tax expense	4	28	(24)	*
Net (loss) income	$ (224)	$ 4,747	(4,971)	*

* Not meaningful

Revenue

	December 31, 2022	December 31, 2021	Change	Percent
CVD Equipment	$ 16,674	$ 8,589	$ 8,085	94%
SDC	6,541	4,849	1,692	35%
CVD Materials	3,171	3,355	(184)	(5%)
Intersegment sales elimination	(573)	(346)	(227)	*
Total	$ 25,813	$ 16,447	$ 9,366	57%

* Not meaningful

Our revenue for the year ended December 31, 2022 was $25.8 million compared to $16.4 million for the year ended December 31, 2021, an increase of 57%.

The increase in revenue versus the prior year period was primarily attributable to increased revenue of $8.1 million from the CVD Equipment segment related to equipment sales and spare parts, a $1.7 million increase in revenue from our SDC segment, offset, in part by, decreased revenue of $0.2 million from the CVD Materials segment. The increase in revenue in the period was principally the result of the recognition of revenue associated with our PVT150 systems. Sales of PVT150 systems were made to one customer in 2022 and represented 29.2% of our total revenues and 46% of CVD Equipment segment revenues.

Our order backlog at December 31, 2022 was approximately $17.8 million as compared to December 31, 2021 of $10.4 million. Our backlog at December 31, 2022 consists of approximately $16.2 million related to remaining performance obligations of contracts in progress and the balance of approximately $1.6 million represents orders received from customers. 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.

The revenue contributed by the CVD Equipment segment for the year ended December 31, 2022 represented 65% of overall revenue as compared to 52% of overall revenue for the year ended December 31, 2021. The increase in revenues of $8.1 million or 94% resulted from an increase in orders in 2022 over 2021 due to increased demand for our products, principally for our PVT150 systems.

The revenue contributed by the SDC segment for the year ended December 31, 2022 represented 25% of overall revenue as compared to 29% of overall revenue for the year ended December 31, 2021 Revenue for our SDC segment increased $1.7 million or 35% due to increased orders and demand for the SDC's products during 2022 as compared to the prior year.

The revenue contributed by the CVD Materials segment for the year ended December 31, 2022 represented 12% of our overall revenue as compared to 20% of overall revenue for the year ended December 31, 2021 The decrease of $0.2 million was principally due to lower demand for coating services by our Tantaline subsidiary during 2022 as compared to 2021.

Gross Profit

Gross profit for the year ended December 31, 2022 amounted to $6.6 million, with a gross profit margin of 26%, compared to a gross profit of $3.1 million and a gross profit margin of 19% for the year ended December 31, 2021. The increase in gross profit of $3.6 million was primarily the result of leveraging fixed costs on higher sales levels and improved product mix, which offset certain component cost increases and higher compensation costs.

Research and Development

For the year ended December 31, 2022, research and development expenses were $1.9 million, or 7.4% of revenue as compared to $1.8 million, or 11% for the year ended December 31, 2021. The increase in 2022 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 $1.2 million or 4.7% of the revenue for the year ended December 31, 2022 as compared to $0.9 million or 5.3% for the year ended December 31, 2021. The increase in 2022 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, 2022 were $5.3 million or 21% of revenue compared to $5.1 million or 31% of revenue for the year ended December 31, 2021, an increase of $0.2 million. The increase in expenses was principally due to increases in personnel and employee-related costs of approximately $0,6 million to support the growth of our business, a severance charge of $0.1 million, a bad debt recovery in the prior year of $0.1 million and other increases of $0.3 million. Offsetting these increases were lower professional fees of approximately $0.3 million, decreased building-related costs of associated with the 555 Building that was sold in July 2021 of approximately $0.6 million.

Other Income, Net

Other income, net was $1.6 million for the year ended December 31, 2022 as compared to other income, net of $9.4 million for the year ended December 31, 2021.

During 2022, we conducted an analysis to determine if we were entitled to 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 in our analysis, we determined that we are 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. Accordingly, the Company has recognized other income of $1.5 million for the year ended December 31, 2022.

The gain on debt extinguishment in 2021 was the result of the forgiveness of the Company’s PPP loan in the amount of $2.4 million. The gain on the sale of the building of $6.9 million in 2021 was the result of the sale of our 555 Building. Other income from subleasing a portion of our 555 Building (which was sold on July 26, 2021) was $500,000 for the year ended December 31, 2021. The foreign exchange losses in both 2022 and 2021 are related to an intercompany loan between CVD and its Tantaline subsidiary in Denmark.

As a result of our increased cash position from the sale of the 555 Building in July 2021 and higher interest rates, interest income increased from $6,000 in 2021 to $162,000 in 2022. In addition, interest expense decreased principally due to the satisfaction of the mortgage loans on our 555 Building on July 26, 2021 and on our 355 Building on March 1, 2022.

Income Taxes

Income tax expense for the years ended December 31, 2022 and 2021, was $4,000 and $28,000, respectively, related to minimum state taxes. 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, 2022, we had aggregate working capital of $15.5 million compared to aggregate working capital of $16.7 million at December 31, 2021. Our cash and cash equivalents at December 31, 2022 and 2021 were $14.4 million and $16.7 million, respectively.

Net cash provided by operating activities during 2022 was $194,000. This is the result of the net loss of $224,000 as adjusted for non-cash expenses of depreciation and amortization and stock-based compensation of $1.3 million. Cash from operations decreased due to increases in a) accounts receivables of $2.3 million due to increases in our revenues, b) inventories of $1.3 million due to longer lead times and additional orders, and c) other receivables as we recorded a receivable of $1.5 million for ERC credits offset by an increase in contract liabilities of $2.4 million related to advance payments from customers in excess of costs incurred and from an increase of $1.0 million in accounts payable and accrued expenses.

Capital expenditures in the year ended December 31, 2022 were $0.7 million related to purchases of manufacturing equipment to allow for more efficient manufacturing and improved control of our supply chain. In September 2022, we entered into a loan agreement to acquire equipment in the amount of $0.4 million. This loan is secured by the equipment and is payable in 60 equal monthly installments of $8,352 with an interest rate of 6%.

We had a loan agreement with a bank that was secured by a mortgage on our Central Islip headquarters at 355 South Technology Drive. On March 1, 2022, according to the terms of the agreement, the loan amount outstanding of approximately $1.8 million was satisfied.

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

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. Our critical estimates include accounting for certain items such as revenues on long-term contracts recognized on the input method; and the recoverable value of our long-lived assets.

We consider the following significant accounting policies to be critical because of their complexity and the high degree of judgment involved in maintaining them.

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 three 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 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.

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 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, 2022.

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, 2022. 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, 2022, our internal control over financial reporting was effective based on the criteria established by the COSO Internal Control Framework.

This annual report 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.

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

In January 2021, the Board appointed Lawrence J. Waldman to serve as the Chairman, which separated the positions of Chairman and CEO.

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 schedule 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 or 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 five 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 for the names, ages and positions with the Company of each of our directors and executive officers, as of March 15, 2023.

Name	Age	Position(s) with the Company
Emmanuel Lakios	61	Chief Executive Officer, President, Director
Lawrence J. Waldman	76	Chairman of the Board of Directors, , Chairman-Audit Committee
Conrad J. Gunther	76	Director, Chairman-Compensation Committee
Raymond A. Nielsen	72	Director, Chairman-Nominating, Governance and Compliance Committee
Robert M. Brill	76	Director, Chairman- Strategic Planning Committee
Richard A. Catalano	63	Chief Financial Officer, Vice President, Secretary and Treasurer
Kevin R. Collins	57	Vice President and General Manager of SDC
Jeffrey A. Brogan	53	Vice President of Sales and Marketing
Maxim S. Shatalov	52	Vice President of Engineering and Technology
Warren D. Cheesman	50	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.

Conrad J. Gunther

Conrad J. Gunther has served as a member of our Board of Directors since 2000. Mr. Gunther has extensive experience in mergers and acquisitions and in raising capital through both public and private means. He has been an executive officer and director of several banks, both public and private, and has served on the boards of two other public companies. Since December 2016, Mr. Gunther has served as an Executive Officer and Chief Lending Officer for Dime Community Bank, a Long Island, New York based commercial bank, where he is responsible for all lending. From July 2015 to December 2016, Mr. Gunther served as an Executive Vice President and Senior Loan Officer for First Federal Savings Bank, based on Long Island, New York. Mr. Gunther qualifies to serve on our board of directors as a result of his experience and expertise in the financial community.

Raymond A. Nielsen

Raymond 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, the Long Island High Tech Incubator and several private companies. Dr. Brill has also previously served on the Board of Directors of multiple 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

Rich 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, http://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, Conrad J. Gunther, Raymond A. Nielsen and Robert M. Brill. During the fiscal year ended December 31, 2022, 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 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, 2022, all of the filings for our officers, directors and ten percent shareholders were made on a timely basis.

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, 2022 and 2021.

Name and principal position	Year	Salary ($)	Bonus ($) (1)	Option Awards ($) (2)	Stock Awards ($) (2)	All Other Compensation ($) (3)	Total ($)
Emmanuel Lakios	2022	316,800	191,600	236,704	-	13,830	758,934
President and Chief Executive Officer	2021	294,190	101,000	258,400	12,505	-	666,095
Richard Catalano (4)							
Secretary, Chief Financial Officer and	2022	80,769	31.250	68,151	-	288	180,458
Executive Vice President	2021	-	-	-	-	-	-
Thomas McNeill (5)							
Secretary, Chief Financial Officer and	2022	187,425	29,988	-	-	137,689	355,102
Executive Vice President	2021	237,306	74,000	129,200	-	4,192	444,698
Jeffrey A. Brogan	2022	196,000	58,800	47,341	-	-	305,194
Vice President Sales & Marketing	2021	183,179	21,000	48,660	-	-	252,839

(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).

(3) All other compensation consists of 1) 401(k) match in 2022 of $8,895 for Emmanuel Lakios, $288 for Richard Catalano, $4,094 for Thomas McNeill and $3,053 for Jeffrey Brogan; 2) severance of $104,125 in 2022 and accrued and used vacation time of $29,470 in 2022 and $4,192 in 2021 for Thomas McNeill; and 3) health insurance premiums of $8,895 in 2022 for Emmanuel Lakios

(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, 2022

The following table sets forth the outstanding equity awards held by our named executive officers as of December 31, 2022.

	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	-	75,000	$ 5.02	8/17/2032	-	-	-	$ -
	25,000	75,000	$ 4.26	6/1/2032				
	100,000	-	$ 10.30	2/6/2027	-	-		
Richard Catalano (1)	20,000	20,000	$ 5.42	8/30/2032	-	-	-	$ -
Thomas McNeill (2)	12,500	-	$ 4.26	2/10/2023	-	-	-	$ -
Jeffrey A. Brogan	-	15,000	$ 5.02	8/17/2032	-	-	-	$ -
	5,000	15,000	$ 4.01	7/15/2021				
	20,000	-	$ 11.61	10/31/2027				

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

(2) Effective August 30, 2022, Thomas McNeill resigned as Executive Vice President and Chief Financial Officer. The expiration date of Mr. McNeill's 12,500 vested options was extended until February 10, 2023.

2022 Director Compensation

The following table sets forth a summary of the compensation we paid to our non-employee directors in 2022.

Name	Fees Earned or Paid in Cash	Option Awards	Restricted Stock Awards	Total
Conrad J. Gunther	$ 50,000	-	$ 40,000	$ 90,000
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

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 15, 2023, 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 15, 2023.

Name and Address of Beneficial Owner (1)	Amounts and Nature of Beneficial Ownership (2)		Percent of Class (%)
Andrew Africk / ADA Partners LP	787,877		11.6
Leviticus Partners, L.P.	674,879		9.9
Emmanuel Lakios	131,368	(3)	1.9
Conrad J. Gunther	99,478	(4)	1.5
Kevin R. Collins	88,997	(5)	1.3
Lawrence J. Waldman	63,000	(4)	*
Raymond A. Nielsen	54,300	(4)	*
Jeffrey A. Brogan	29,519	(6)	*
Maxim Shatalov	25,000	(6)	*
Robert M. Brill	15,785	(4)	*
Richard A. Catalano	-	(7)	*
All directors and executive officers and executive employees as a group (nine persons)	507,447		7.6

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

(1) The address of Messrs. Lakios, Gunther, Waldman, Nielsen, Brogan, Shatalov, Catalano, Cheesman and Brill 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

(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 155000 shares of our common stock.

(4) 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 2023 shareholder meeting.

(5) Does not include unvested options to purchase 22,500 shares of our common stock.

(6) Does not include unvested options to purchase 30,000 shares of our common stock.

(7) Does not include unvested options to purchase 20,000 shares of our common stock.

See Item 5, Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities under the heading "Equity Compensation Plan Information" for information regarding our securities authorized for issuance under equity compensation plans.

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, Conrad J. Gunther, Raymond A. Nielsen and Robert M. Brill. Messrs. Waldman, Gunther, Nielsen and Brill 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, 2022 and 2021.

	2022	2021
Audit fees	$ 181,500	$ 149,000
Audit-related fees	20,500	15,000
All other fees	-	-
Total fees	$ 202,000	$ 164,000

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 accounting consultation.

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 CVD Equipment Corporation 2001 Stock Option Plan (Incorporated herein by reference to the Company's Form S-1 filed on July 3, 2007).*

10.2 Form of Non-Qualified Stock Option Agreement (Incorporated herein by reference to the Company's Annual Report on Form 10-KSB filed on March 26, 2007).*

10.3 CVD Equipment Corporation 2007 Share Incentive Plan (Incorporated herein by reference to the Company's Schedule 14A filed on November 5, 2007). *

10.4 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).

10.5 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).

10.6 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).

10.7 Assignment of Leases and Rents, dated March 15, 2012, by and among FAE Holdings 411519R, LLC, the Town of Islip Industrial Development Agency and HSBC Bank USA, National Association (Incorporated by reference from the Company's Report on Form 10-Q filed with the Commission on May 15, 2012).

10.8 Amended and Restated Fee and Leasehold Mortgage, dated March 15, 2012, by and among FAE Holdings 411519R, LLC, the Town of Islip Industrial Development Agency and HSBC Bank USA, National Association (Incorporated by reference from the Company's Report on Form 10-Q filed with the Commission on May 15, 2012).

10.9 Amended and Restated Note, dated March 15, 2012, by and among FAE Holdings 411519R, LLC, the Town of Islip Industrial Development Agency and HSBC Bank USA, National Association (Incorporated by reference from the Company's Report on Form 10-Q filed with the Commission on May 15, 2012).

10.10 Note and Mortgage Assumption Agreement, dated March 15, 2012, by and among FAE Holdings 411519R, LLC, the Town of Islip Industrial Development Agency and HSBC Bank USA, National Association (Incorporated by reference from the Company's Report on Form 10-Q filed with the Commission on May 15, 2012).

10.11 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).

10.12 Reaffirmation of Unlimited Continuing Guaranty, dated as of August 5, 2019, by and between CVD Equipment Corporation and HSBC Bank USA, National Association (Incorporated by reference to the Company's Current Report on Form 8-K filed with the Commission on August 5, 2019).

10.13 Note Modification Agreement, dated as of August 5, 2019, by and between FAE Holdings 411519R and HSBC Bank USA, National Association (Incorporated by reference to the Company's Current Report on Form 8-K filed with the Commission on August 5, 2019).

10.14 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).

10.15 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).

10.16 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).

10.17 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).

10.18 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).

10.19 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).

10.20 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).

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.

101.INS*** Inline XBRL Instance

101.SCH*** Inline XBRL Taxonomy Extension Schema

101.CAL*** Inline XBRL Taxonomy Extension Calculation

101.DEF*** Inline XBRL Taxonomy Extension Definition

101.LAB*** Inline XBRL Taxonomy Extension Labels

101.PRE*** Inline XBRL Taxonomy Extension Presentation

104 Cover Page Interactive Data File (embedded within the Inline XBRL and contained in Exhibit 101)

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* 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 27, 2023
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)	3/27/2023
/s/ Lawrence J. Waldman Lawrence J. Waldman	Director, Chairman of the Board	3/27/2023
/s/ Conrad J. Gunther Conrad J. Gunther	Director	3/27/2023
/s/ Raymond A. Nielsen Raymond A. Nielsen	Director	3/27/2023
/s/ Robert M. Brill Robert M. Brill	Director	3/27/2023

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
CVD Equipment Corporation

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, 2022 and 2021, the related consolidated statements of operations, stockholders' equity and cash flows for each of the two years in the period ended December 31, 2022 and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America.

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, 2022, the Company recognized approximately $18 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;
- 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 that were commenced and completed during the year ending December 31, 2022, by obtaining the original estimates, compare to the actual costs and profit margin for the completed contracts and investigate significant changes; and
- Tested the estimated costs to complete Systems Projects that were not completed during the year ended December 31, 2022 by comparing the estimated cost to complete at December 31, 2022 to actual cost incurred subsequent to December 31, 2022.

/s/ Marcum LLP

Marcum LLP

We have served as the Company's auditor since 2019

Melville, NY
March 27, 2023

CVD EQUIPMENT CORPORATION AND SUBSIDIARIES
Consolidated Balance Sheets
As of December 31, 2022 and 2021
(in thousands, except share amounts)

	2022	2021
ASSETS		
Current assets		
Cash and cash equivalents	$ 14,365	$ 16,651
Accounts receivable, net	3,788	1,446
Contract assets	2,170	2,538
Inventories, net	2,538	1,225
Income taxes receivable	-	716
Other current assets	797	494
Total current assets	23,658	23,070
Employee retention credit receivable	1,529	-
Property, plant and equipment, net	12,596	12,261
Intangible assets, net	119	183
Other assets	10	10
Total assets	$ 37,912	$ 35,524
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 1,454	$ 1,161
Accrued expenses	2,591	1,759
Current maturities of long-term debt	77	1,766
Contract liabilities	4,042	1.650
Total current liabilities	8,164	6,336
Long-term debt, net of current portion	349	-
Total liabilities	8,513	6,336
Commitments and contingencies (see note 13)		
Stockholders' equity:		
Common stock - $0.01 par value – 20,000,000 shares authorized; issued and outstanding 6,760,938 at December 31, 2022 and 6,723,438 at December 31, 2021	67	67
Additional paid-in capital	27,712	27,277
Retained earnings	1,620	1,844
Total stockholders' equity	29,399	29,188
Total liabilities and stockholders' equity	$ 37,912	$ 35,524

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, 2022 and 2021
(in thousands, except per share amounts)

	2022	2021
Revenue	$ 25,813	$ 16,447
Cost of revenue	19,186	13,370
Gross profit	6,627	3,077
Operating expenses:		
Research and development	1,906	1,785
Selling	1,216	864
General and administrative	5,328	5,092
Total operating expenses	8,450	7,741
Operating loss	(1,823)	(4,664)
Other income (expense):		
Interest income	162	6
Interest expenses	(8)	(261)
Employee retention credits	1,529	-
Foreign exchange loss	(95)	(143)
Gain on sale of building	-	6,894
Gain on debt extinguishment	-	2,443
Other income	15	500
Total other income, net	1,603	9,439
(Loss) income before income tax	(220)	4,775
Income tax expense	4	28
Net (loss) income	$ (224)	$ 4,747
Income (loss) per common share:		
Basic	$ (0.03)	$ 0.71
Diluted	$ (0.03)	$ 0.71
Weighted average number of shares:		
Basic	6,734	6,688
Diluted	6,734	6,704

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, 2022 and 2021
(in thousands)

	Common stock				
	Shares	Par Value	Additional paid-in Capital	Retained Earnings / (Accumulated Deficit)	Total
Balance at January 1, 2021	6,679	$ 67	$ 26,962	$ (2,903)	$ 24,126
Net income	-	-	-	4,747	4,747
Stock-based compensation	44	-	315	-	315
Balance at December 31, 2021	6,723	$ 67	$ 27,277	$ 1,844	$ 29,188
Net loss	-	-	-	(224)	(224)
Stock-based compensation	37	-	435	-	435
Balance at December 31, 2022	6,760	$ 67	$ 27,712	$ 1,620	$ 29,399

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, 2022 and 2021
(in thousands)

	2022	2021
Cash flows from operating activities:		
Net (loss) income	$ (224)	$ 4,747
Adjustments to reconcile net (loss) income to net cash provided by (used in) operating activities		
Gain on sale of building	-	(6,894)
Gain on debt extinguishment	-	(2,443)
Stock-based compensation	435	315
Depreciation and amortization	867	742
Changes in operating assets and liabilities:		
Accounts receivable	(2,342)	(399)
Contract assets	368	(2,044)
Inventories	(1,313)	(101)
Income tax receivable	716	-
Employee retention credit receivable	(1,529)	-
Other current assets	(301)	220
Accounts payable	293	343
Accrued expenses	832	377
Contract liabilities	2,392	864
Net cash provided by (used in) operating activities	194	(4,273)
Cash flows from investing activities:		
Net proceeds from sale of building	-	23,076
Net proceeds from sale of equipment	10	-
Capital expenditures	(665)	(236)
Capitalized patent costs	(53)	-
Net cash (used in) provided by investing activities	(708)	22,840
Cash flows from financing activities		
Repayments of long-term debt	(1,772)	(9,615)
Net cash used in financing activities	(1,772)	(9,615)
Net (decrease) increase in cash and cash equivalents	(2,286)	8,952
Cash and cash equivalents at beginning of period	16,651	7,699
Cash and cash equivalents at end of period	$ 14,365	$ 16,651
Supplemental disclosure of cash flow information:		
Income taxes paid	$ 1	$ 28
Interest paid	$ 8	$ 261
Non-cash investing and financing activities:		
Loan obtained for new equipment	$ 432	$ -

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

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, 2022, the Company had $14.4 million in cash and cash equivalents. The Company anticipates that the existing cash and cash equivalents balance together with 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) income.

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 doubtful accounts receivable; 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 specialized chemical vapor deposition equipment through contractual agreements. These system sales require the Company to deliver functioning equipment that is generally completed within three to twelve months from commencement of order acceptance. The Company recognizes revenue from system sales over time by using an input method based on costs incurred as it depicts the Company's 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 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 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 years ended December 31, 2022 and 2021.

Note 2 - Summary of Significant Accounting Policies (continued)

The timing of revenue recognition, billings and collections results in receivables, unbilled receivables (referred to as 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".

Inventories

Inventories are valued at the lower of cost (determined on the first-in, first-out method) or net realizable value.

Note 2 - Summary of Significant Accounting Policies (continued)

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.

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.

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 pursuant to the requirements of the FASB 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 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.

Note 2 - Summary of Significant Accounting Policies (continued)

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.

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.

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.

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.

Note 2 - Summary of Significant Accounting Policies (continued)

Cash and Cash Equivalents

The Company had cash and cash equivalents of $14.4 million and $16.7 million at December 31, 2022 and 2021, respectively. The Company invests excess cash in treasury bills, certificates of deposit or deposit accounts, all with maturities of less than three months. Cash equivalents were $11.7 million and $7.0 million at December 31, 2022 and 2021, 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 December 31, 2022 and 2021 was $1.5 million and $8.6 million respectively. The Company's cash in our Denmark subsidiary exceeded the government guarantee limit by approximately $0.5 million and $0.4 million at December 31, 2022 and 2021, respectively.

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 and maintains allowances for anticipated losses based upon historical experience.

The Company sells products and services to various companies across several industries in the ordinary course of business. The Company performs ongoing credit evaluations to assess the probability of accounts receivable collection based on a number of factors, including past transaction experience, evaluation of their credit history and review of the invoicing terms of the contract to determine the financial strength of its customers. The Company has accounts receivables from certain customers that exceed 10%. As of December 31, 2022, the accounts receivable balance includes amounts from two customers that totals 66% of total accounts receivable, and as of December 31, 2021, two customers totaled 50% of total accounts receivable.

Accounts receivable is presented net of an allowance for doubtful accounts of $36,000 and $59,000 as of December 31, 2022 and 2021, respectively. The allowance is based on historical experience and management's evaluation of the collectability of accounts receivable. Management believes the allowance is adequate. However, future estimates may fluctuate based on changes in economic and customer conditions. The Company does not require collateral from its customers.

Note 2 - Summary of Significant Accounting Policies (continued)

Sales Concentrations

Revenue to a single customer in any one year can exceed 10% of our total sales. There was one customer in the year ended December 31, 2022 that represented 29.2% of our revenues, while there were no customers that exceed 10% of total sales in the year ended December 31, 2021. 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% and 26% of sales for the years ended December 31, 2022 and 2021, respectively. Export sales in both 2022 and 2021 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.

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.

Note 2 - Summary of Significant Accounting Policies (continued)

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 $87,000 and $30,000 for the years ended December 31, 2022 and 2021, respectively.

Recently Issued 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. On November 15, 2019, the FASB delayed the effective date for smaller reporting companies. The amendments in this update are now effective for fiscal years beginning after December 15, 2022 and interim periods within those annual periods. Management believes that the adoption of this new standard will not have a material impact on the Company's financial position or results of operations.

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, 2022 and 2021 (in thousands):

	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

	Year Ended December 31, 2021		
	Over time	Point in time	Total
Energy	$ 1,141	$ -	$ 1,141
Aerospace	386	2,214	2,600
Industrial	4,989	3,863	8,852
Research	2,294	1,560	3,854
Total	$ 8,810	$ 7,637	$ 16,447

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 $16.2 million at December 31, 2022, 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.

Note 3 – Revenue (continued)

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.

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

	2022	2021
Costs incurred on contracts in progress	$ 14,390	$ 7,419
Estimated earnings	10,926	5,071
	25,316	12,490
Billings to date	(26,925)	(11,409)
	(1,609)	1,081
Deferred revenue related to non-systems contracts	(263)	(193)
	$ (1,872)	$ 888
Included in accompanying consolidated balance sheets under the following captions (in thousands):		
Contract assets	$ 2,170	$ 2,538
Contract liabilities	$ 4,042	$ 1,650

Of the contract liability balances at December 31, 2021 and December 31, 2020, $1.7 million and $0.8 million was recognized as revenue during the years ended December 31, 2022 and 2021, respectively.

Note 4 - Inventories

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

	2022	**2021**
Raw materials	$ 2,165	$ 1,031
Work-in-process	373	194
Total	$ 2,538	$ 1,225

Note 5 – Property, Plant and Equipment

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

	2022	2021
Land	$ 2,220	$ 2,220
Buildings and improvements	12,530	12,477
Machinery and equipment	7,810	6,879
Construction in progress	12	127
Totals at cost	22,572	21,703
Less: accumulated depreciation	(9,976)	(9,441)
Property, plant and equipment, net	$ 12,596	$ 12,261

Machinery and equipment also includes furniture and fixtures and software.

Depreciation expense was $0.8 million and $0.6 million for the years ended December 31, 2022 and 2021, respectively.

On March 29, 2021, the Company entered into an agreement with a third party for the sale of its facility located at 555 S. Technology Drive in Central Islip, New York (the "*555* Building"), and on July 26, 2021, the Company closed on the sale. The sale price was $24.4 million, subject to adjustment for apportionments, adjustments, and credits. A portion of the sale proceeds was used to satisfy the existing mortgage debt on the 555 Building, including interest and fees, in the amount of $9.4 million, as well as various costs related to the closing of the transaction. The Company recognized a gain on the sale of the building in the amount of $6.9 million and received approximately $14.0 million in net proceeds.

Management had determined the 555 Building was not needed for business operations, and the remaining elements of the CVD Materials business located in the 555 Building were consolidated into the 355 Building.

Note 6 – Intangible Assets

Intangible assets consisted of the following (in thousands):

December 31, 2022

	Cost	Accumulated Amortization	Net
Patents	$ 565	$ 446	$ 119
Certifications	54	54	-
Totals	$ 619	$ 500	$ 119

December 31, 2021

	Cost	Accumulated Amortization	Net
Patents	$ 602	$ 422	$ 180
Certifications	54	51	3
Totals	$ 656	$ 473	$ 183

Amortization expense was $0.1 million in both years ended December 31, 2022 and 2021.

The estimated amortization expense related to intangible assets for each of the five succeeding fiscal years and thereafter as of December 31, 2022 is as follows (in thousands):

Year Ended	
2023	$ 17
2024	13
2025	13
2026	5
2027	5
Thereafter	66
Total	$ 119

Note 7 – Accrued expenses

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

	2022	2021
Accrued wages and benefits	$ 995	$ 577
Accrued vacation	905	749
Other	691	433
Total accrued expenses	$ 2,591	$ 1,759

Note 8 – Long-term Debt

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

	2022	2021
Equipment loan payable in monthly repayments of $8 including interest at 6% per annum (1)	$ 426	-
Mortgage loan secured by building payable in monthly repayments of $25 plus interest at LIBOR plus 1.75% or bank's prime rate minus 0.5% (2)	-	1,766
Total long-term debt	426	1,766
Less: current maturities	77	1,766
Long-term debt, net of current maturities	$ 349	$ -

Future maturities of long-term debt as of December 31, 2022 are as follows (in thousands):

2023	$ 77
2024	81
2025	87
2026	92
2027	89
Total	$ 426

Note 8 – Long-term Debt (continued)

(1) In September 2022, the Company entered into a loan agreement to fund the acquisition of machinery equipment. The loan amount of $432,000 is payable in 60 equal monthly installments of $8,352 and secured by equipment. The interest rate is 6%.

(2) The Company had a loan agreement with a bank that was secured by a mortgage against its Central Islip, New York facility. The loan was payable in 120 consecutive equal monthly installments of $25,000 in principal plus interest and a final balloon payment due upon maturity on March 1, 2022. The interest rate, at the Company's option, was the variable rate of LIBOR plus 1.75% or the bank's prime less 0.5% (1.86% at December 31, 2021). This loan was satisfied on March 1, 2022.

In November 2017, the Company purchased the premises located at 555 North Research Place, Central Islip, New York. The purchase price of the building was $13.9 million exclusive of closing costs. The Company entered into a loan agreement with a bank in the amount of $10.4 million to finance a portion of the purchase price. The loan was payable in 60 consecutive equal monthly installments of $62,481 including interest at the fixed rate of 3.92%, and a final balloon payment upon maturity in December 2022. On July 26, 2021, the Company closed on the sale of the 555 Building and satisfied the loan (Note 5).

On April 2020, the Company entered into a loan agreement with a bank pursuant to which the Company was granted a loan (the "PPP loan") in the principal amount of $2.4 million, pursuant to the Paycheck Protection Program under Division A, Title I of the Coronavirus Aid, Relief and Economic Security Act (the "CARES Act"), which was enacted by the U.S. Congress in March 2020. The PPP loan was to mature on April 21, 2022 and bore interest at a rate of 1% per annum. Under the terms of the PPP loan program, all or a portion of the PPP loan could be forgiven, based upon payments made in the first 24 weeks following receipt of the proceeds, related to payroll costs, continued payment of group health care benefits, utilities and mortgage interest on other debt obligations incurred before February 15, 2020. The Company filed an application for forgiveness in April 2021 and in June 2021 the Company received a notification from its bank that the U.S. Small Business Administration had approved the Company's PPP loan forgiveness application and remitted payment to the lender for the entire principal amount of the PPP Loan and accrued interest. The Company has recognized a gain on debt extinguishment of $2.4 million in the year ended December 31, 2021.

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):

	2022	2021
Basic weighted average shares outstanding	6,734	6,688
Effect of potentially dilutive share-based awards	-	16
Diluted weighted average shares outstanding	6,734	6,704

At December 31, 2022, stock options to purchase 673,000 shares of common stock were outstanding and 265,500 were exercisable. At December 31, 2021, stock options to purchase 618,500 shares of common stock were outstanding and 265,000 were exercisable.

At December 31, 2022 and 2021, 673,000 and 287,000, stock options, respectively, were not included in the computation of diluted earnings per share because their effect was antidilutive.

Note 10 – Income Taxes

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

	2022	**2021**
Current:		
Federal	$ 1	$ 15
State	3	13
Total current tax provision	4	28
Deferred:		
Federal	-	-
State	-	-
Total deferred tax provision	-	-
Income tax expense	$ 4	$ 28

Note 10 – Income Taxes (continued)

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):

	2022	2021
Expected provision at federal statutory tax rate at 21%	$ (46)	$ 1,003
PPP loan forgiveness	-	(513)
Decrease in valuation allowance	(33)	(346)
State and local taxes	84	6
Foreign tax rate differential	4	(116)
US taxation of foreign operations	80	-
Federal research and development credits	(55)	(57)
Change in tax rates	10	-
Non-deductible expenses	62	51
Other	(102)	-
Income tax expense	$ 4	$ 28

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):

	2022	2021
Deferred income tax assets:		
Net operating loss carryforwards	$ 482	$ 808
R&D tax credit carryforwards	1,723	1,672
Impairment charges	-	723
Compensation costs	10	149
Vacation accrual	174	141
Intangible assets	27	-
Capitalized research and development	356	-
Other items	263	114
Deferred income tax assets	3,035	3,607
Less: valuation allowance	(2,957)	(2,990)
Deferred income tax assets, net of valuation allowance	78	617
Deferred incomes tax liability:		
Property, plant and equipment	(11)	(617)
Prepaid expenses	(67)	-
Deferred income tax asset, net	$ -	$ -

Note 10 – Income Taxes (continued)

In assessing the Company's ability to recover its deferred tax assets, the Company evaluated whether it is more likely than not that some portion or the entire deferred tax asset will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income in those periods in which temporary differences become deductible and/or net operating losses can be utilized. 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 cumulative loss incurred over the three-year period ended December 31, 2022. Such objective evidence limits the ability to consider other subjective evidence, such as our projections for future growth. Based on the weight of available evidence, the Company determined that its U.S. deferred tax assets are not realizable on a more-likely-than-not basis and has recorded a valuation allowance against its net U.S. deferred tax assets. The Company's valuation allowance decreased by $33,000 during 2022. The Company will continue to evaluate its deferred tax assets to determine whether any changes in circumstances could affect the realization of their future benefit. If it is determined in future periods that portions of the Company's deferred income tax assets satisfy the realization standards, the valuation allowance will be reduced accordingly.

At December 31, 2022, the Company had $1.4 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 $1.7 million of federal research and development tax credits which expire in varying amounts in tax years 2028 through 2042. The Company has Denmark net operating losses of $0.7 million which have an indefinite carryforward period.

In connection with the CARES Act, the Company was able to carryback net operating losses generated in 2020 to its 2018 tax year. As of December 31, 2021, the Company has an income tax receivable of $0.7M which was received during the year ended December 31, 2022.

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, 2022 and 2021, 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 2019 to 2022. The Company's state and local tax years that are open to tax examination are generally 2018 to 2022.

Note 10 – Income Taxes (continued)

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 year ended December 31, 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.

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, 2022, there were 120,000 options outstanding under this plan.

Note 12 – Stock-Based Compensation (continued)

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, 2022, there were 477,000 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, 2022, there were 76,000 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, 2022, there were 27,698 shares available for grant under the 2016 Equity Incentive Plan and 439,000 shares available for grant under the 2022 Equity Incentive Plan.

The Company recorded stock-based compensation of $0.4 million and $0.3 million for the years ended December 31, 2022 and 2021, respectively, that were included in the following line items in our Consolidated Statements of Operations (in thousands):

	2022	2021
Cost of revenue	$ 34	$ 30
Research and development	57	7
Selling	27	10
General and administrative	317	268
Total stock-based compensation expense	$ 435	$ 315

Stock-based compensation expense in both years included approximately $0.16 million related to restricted stock awards pursuant to a Director Compensation plan discussed below. The Company recognizes forfeitures of stock awards as they occur.

Note 12 – Stock-Based Compensation (continued)

For the year ended December 31, 2022, the Company granted 198,500 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, 2022 is based upon weighted average assumptions as provided below.

Stock price	$	5.03
Exercise price	$	5.03
Dividend yield		0%
Expected volatility		68%
Risk-free interest rate		3.09%
Expected life (in years)		6

The Company has 673,000 of outstanding stock options under the three plans at December 31, 2022.

The following table summarizes stock options awards for the years ended December 31, 2022 and 2021:

	Awards (in Shares)		Weighted Average Exercise Price
Outstanding at December 31, 2020	417,000	$	11.26
Granted	333,500		4.13
Expired / cancelled	(132,000)		11.73
Exercised	-		-
Outstanding at December 31, 2021	618,500		7.32
Granted	198,500		5.04
Expired / cancelled	(144,000)		11.72
Exercised	-		-
Outstanding at December 31, 2022	673,000	$	5.70

Note 12 – Stock-Based Compensation (continued)

The following table summarizes information about the outstanding and exercisable options at December 31, 2022:

	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	533,000	8.6	$ 4.53	$ 492,765	125,500	$ 4.44	$ 111,375
$ 7.01 - 10.00	20,000	5.3	$ 8.07	$ -	20,000	$ 8.07	$ -
$ 10.01 - 12.00	120,000	4.2	$ 10.52	$ -	120,000	$ 10.52	$ -

As of December 31, 2022, there was $1.1 million of unrecognized compensation costs related to stock options expected to be recognized over a weighted average period of 2.9 years.

Restricted Stock Awards

The following table summarizes restricted stock awards for the years ended December 31, 2022 and 2021:

	Shares of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested outstanding at January 1, 2021	-	$ -
Granted	42,800	4.65
Vested	(36,000)	4.60
Forfeited or cancelled	(6,800)	4.90
Unvested outstanding at December 31, 2021	-	-
Granted	32,000	5.02
Vested	(32,000)	5.02
Forfeited or cancelled	-	-
Unvested outstanding at December 31, 2022	-	$ -

Pursuant to the Director Compensation plan approved on October 11, 2021, each of the four 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.

During the year ended December 31, 2022 and 2021, the Company's directors received 32,000 and 36,000 shares, respectively, of restricted stock.

Note 12 – Stock-Based Compensation (continued)

The fair value of the restricted stock awards is recorded as stock-based compensation expense over the vesting period and totaled $0.16 million in both years ending December 31, 2022 and 2021.

Restricted Stock Units

The following table summarizes restricted stock units for the years ended December 31, 2022 and December 31, 2021:

	Shares of Restricted Stock Units	Weighted Average Grant Date Fair Value
Unvested outstanding at January 1, 2021	8,750	$ 5.00
Granted	-	-
Vested	(3,250)	5.29
Forfeited or cancelled	-	-
Unvested outstanding at December 31, 2021	5,500	4.82
Granted	-	-
Vested	(5,500)	4.82
Forfeited or cancelled	-	- -
Unvested outstanding at December 31, 2022	-	$ -

The total intrinsic value related to fully vested restricted stock units was $22,745 and $38,000 respectively for the years ended December 31, 2022 and 2021.

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 $89,622 during the year ended December 31, 2022 for matching contributions to the 401(k) plan.

No discretionary employer contribution has been made for 2022 and 2021.

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, 2022 and 2021 by the SDC segment to the CVD Equipment segment were $573,000 and $346,000, respectively.

The following table presents certain information regarding the Company's segments as of and for the years ended December 31, 2022 and December 31, 2021 (in thousands, including amount in notes):

2022

	CVD Equipment	SDC	CVD Materials	Corporate	Eliminations	Consolidated
Assets	$ 25,287	$ 9,679	$ 2,946	$ -	$ -	$ 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 (1)	(156)	1,849	1,076	(2,989)	-	(220)
Depreciation and amortization	$ 652	$ 49	$ 166	$ -	$ -	$ 867
Purchases of property, plant & equipment	$ 623	$ 3	$ 39	$ -	$ -	$ 665

2021

	CVD Equipment	SDC	CVD Materials	Corporate	Eliminations	Consolidated
Assets	$ 26,360	$ 7,409	$ 1,755	$ -	$ -	$ 35,524
Revenue	$ 8,590	$ 4,849	$ 3,354	$ -	$ (346)	$ 16,447
Operating (loss) income	(3,454)	922	1,053	(3,185)	-	(4,664)
Pretax (loss) income	(1,055(2))	922	8,093(3)	(3,185)	-	4,775
Depreciation and amortization	$ 533	$ 52	$ 157	$ -	$ -	$ 742
Purchases of property, plant & equipment	$ 106	$ 31	$ 99	$ -	$ -	$ 236

(1) Includes other income related to ERCs of $1,103, $303 and $123 for the CVD, SDC and Materials segments, respectively.

(2) Includes $2,443 from the gain on debt extinguishment related to the forgiveness of the PPP loan.

(3) Includes $6,894 from the gain on the sale of building.

Note 15 – 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 more timely as it delays the Company's manufacturing processes.

- The pandemic's impact on long distance air travel resulted in a reduction in orders for the Company's aerospace equipment products that adversely affected the Company's revenues since the start of the pandemic.

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 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) of our report dated March 27, 2023 with respect to our audits of the consolidated financial statements of CVD Equipment Corporation and Subsidiaries as of December 31, 2022 and 2021 and for each of the two years in the period ended December 31, 2022, which report is included in this Annual Report on Form 10-K of CVD Equipment Corporation for the year ended December 31, 2022.

/s/ Marcum LLP

Marcum LLP
Melville, NY
March 27, 2023

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 27, 2023

/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 27, 2023

/s/ Richard Catalano
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, 2022 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 27, 2023

/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, 2022 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 27, 2023

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