

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, 2019
- 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  
**Common Stock, Par value \$0.01**

Trading Symbol(s)  
**CVV**

Name of each exchange on which registered  
**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 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data file required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months/(or for such shorter period that the registrant was required to submit and post 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 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: \$19,740,810 at June 30, 2019

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date: 6,633,355 shares of Common Stock, \$0.01 par value at March 24, 2020.

DOCUMENTS INCORPORATED BY REFERENCE: None.

## PART I

### 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; our ability to obtain financing on acceptable terms if and when needed; uncertainty as to our future profitability, uncertainty as to the future profitability of acquired businesses or product lines, uncertainty as to any future expansion of the Company and the effect of the novel coronavirus (COVID-19) on our business and operations, 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.*

#### **Item 1. Description of Business.**

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.

We design, develop and manufacture 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 research and industrial applications. This equipment is used by our customers to research, design, and manufacture these materials or coatings for aerospace engine components, medical implants, semiconductors, solar cells, smart glass, carbon nanotubes, nanowires, LEDs, MEMS and other applications. Through CVD Materials and our Application Laboratory, we develop new material systems, provide material coating services, process development support and process startup assistance with the focus on *enabling tomorrow's technologies*<sup>TM</sup>.

Based on more than 38 years of experience, we use our capabilities in engineering, manufacturing and process development to transform new applications into leading-edge manufacturing solutions.

This enables university, research and industrial scientists at the cutting edge of technology to develop next generation aerospace, medical, nano, LEDs, semiconductors and other electronic components. We develop, manufacture and provide equipment for research and production based on our proprietary designs. We have built a significant library of design expertise, know-how and innovative solutions to assist our customers in developing these intricate processes and to accelerate their commercialization. This library of solutions, along with our vertically integrated manufacturing facilities, allows us to provide superior design, process and manufacturing solutions to our customers on a cost-effective basis.

Our strategy is to target opportunities in the research, development and production equipment market, with a focus on higher-growth applications such as aerospace, medical, smart glass, carbon nanotubes, nanowires, graphene, MEMS and LEDs. To expand our penetration into these growth markets, we have developed a line of proprietary standard products and custom systems. Historically, we manufactured products for research and development on a custom one-at-a-time basis to meet an individual customer's specific research requirements. Our proprietary systems leverage the technological expertise that we have developed through designing these custom systems onto a standardized basic core. This core is easily adapted through a broad array of available options to meet the diverse product and budgetary requirements of the research community. By manufacturing the basic core of these systems in higher volumes, we are able to reduce both the cost and delivery time for our systems. These systems, which we market and sell under the EasyTube® and CVD product lines, are sold to researchers at universities, research laboratories, and startup companies in the United States and throughout the world.

Sales of our proprietary standard, custom systems and process solutions have been driven by our installed customer base, which includes several Fortune 500 companies. The strong performance and success of our products has historically driven repeat orders from existing customers as well as business from new customers. However, with our proprietary solutions and expanded focus on "*accelerating the commercialization of tomorrow's technologies*"™ we have been developing a new customer base in addition to growing with our existing customers. We have generally gained new customers through word of mouth, limited print advertising and trade show attendance. We are now also gaining new customers by their awareness of our company in the marketplace with results from our Application Laboratory, relationships with startup companies, increased participation in trade shows and expanded internet advertising.

The core competencies we have developed in equipment and software design, as well as in systems manufacturing and process solutions, 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 powerful tools to understand, optimize and repeatedly control their processes. Our vertically integrated structure allows us to control the manufacturing process, from bringing raw metal and components into our manufacturing facilities to shipping out finished products. These factors significantly reduce cost, improve quality and reduce the time it takes from customer order to shipment of our products. Our Application Laboratory allows selected customers to bring up their process tools in our Application Laboratory and to work together with our scientists and engineers to optimize process performance.

**CVD Materials Segment:**

On October 31, 2017, through our newly formed and wholly-owned subsidiary, CVD MesoScribe Technologies Corporation ("CVD MesoScribe Technologies"), we acquired substantially all of the operating assets and business of MesoScribe Technologies, Inc. ("MTI"). Formed in 2002, by a group from Stony Brook University, MTI established itself as a pioneer and leader in the direct deposition of thermal sensors, heaters, and instrumentation for harsh environments.

MTI specialized in materials processing using Direct Write MesoPlasma™ printing technology. This technology is an enabling additive manufacturing process whereby materials are printed onto conformal components in precise patterns. MTI has provided MesoPlasma™ printing services and products to its customers for use in aerospace, power generation, satellite, and defense markets, focusing on developing and manufacturing innovative products for advanced sensing, heating, and communication.

This acquisition provides CVD access to additional materials deposition technology, a presence in new markets, a broader presence in aviation and defense markets and additional end user applications. In addition, the proprietary MesoPlasma™ technology complements our Tantaline® business which we acquired in the fourth quarter of 2016. The two technologies when combined provide a treatment and coating which can provide both corrosion and wear resistance. This is consistent with our strategic plan to leverage our equipment know-how, business infrastructure and proven ability to scale up new technologies, all offering high value-added materials, products, and services and is another step in our combined organic and acquisition growth strategy.

To support the expected growth of CVD Materials and to relocate the California MesoScribe operations as well as Tantaline USA business on November 30, 2017, we purchased the premises located at 555 North Research Place, Central Islip, NY (the "Premises"). The purchase price of the building was \$13,850,000, exclusive of closing costs. On November 30, 2017, the Company's newly formed wholly-owned subsidiary, 555 N Research Corporation (the "Assignee") and the Islip IDA, entered into a Fee and Leasehold Mortgage and Security Agreement (the "Loan") with HSBC Bank USA, N.A. (the "Bank") in the amount of \$10,387,500, which was used to finance a portion of the purchase price to acquire the Premises. The Loan was evidenced by the certain Note, dated November 30, 2017 (the "Note"), by and between Assignee and the Bank, and secured by a certain Fee and Leasehold Mortgage and Security Agreement, dated November 30, 2017 (the "Mortgage"), as well as a collateral Assignment of Leases and Rents ("Assignment of Leases").

The Loan is payable in sixty consecutive equal monthly installments of \$62,481, including interest. The Loan bears interest for each Interest Period (as defined in the Note), at the fixed rate of 3.9148%. The maturity date for the Note is December 1, 2022.

As a condition of the Bank making the Loan, the Company was required to guaranty Assignee's obligations under the Loan pursuant to that certain Unlimited Guaranty, dated November 30, 2017 (the "Guaranty").

With the completed purchase of the additional facility, we now have the manufacturing space to accelerate our capabilities of providing materials, coatings and surface treatments to meet our customers' needs. We have now positioned ourselves for the expansion of our carbon composites and electronic materials, Tantaline® and MesoScribe Technologies product lines. Our focus during the second half of 2019 has been on i) getting our materials facility up and running, ii) starting our MesoScribe™ facility back-up after moving from California to New York, commencing at the end of May 2019 and iii) pursuing additional equipment sales. We invested approximately \$2.7 million and \$2.5 million during 2019 and 2018, respectively, in building improvements, machinery, and other expenses related primarily to the operations of CVD Materials. The move of Mesoscribe™ operations have been completed and it was fully operational during the middle of our third quarter 2019. Since September 2019, Mesoscribe™ has secured orders of approximately \$2 million, and in early 2020 we have hired four employees including test and project management to support those orders and growth opportunities. Tantaline® US equipment systems continue to be installed and are in various stages of process testing and refinement. We have continued to increase our marketing efforts for equipment and materials, and in February 2020 we hired a salesman specific to Tantaline®.

It is common and required to have coating services located near or at least in the country or territory of the customers being service. With regard to Tantaline® our Demark facility provides both local and global deposition services. The majority of the business though has been in Europe. The Central Islip, NY facility will primarily support the US customer base as well as serve as our application and technology center. This is an essential element of our growth strategy for Tantaline®. With respect to our CVD MesoScribe Technologies subsidiary, we have completed the process of consolidating the manufacturing and development operations in Central Islip during our third quarter of 2019. This has resulted in a reduction of our operating expenses associated with no longer leasing space in California and will further provide synergies with the Central Islip sales and marketing functions and place the operations near the local Thermal Spray Center of Excellence located at Stony Brook University.

## Segments

*CVD/First Nano* supplies state-of-the-art chemical vapor deposition systems for use in the research, development and manufacturing of aerospace and medical components, semiconductors, LEDs, carbon nanotubes, nanowires, solar cells and a number of other industrial applications. We utilize our expertise in the design and manufacture of chemical vapor deposition systems to work with laboratory scientists to bring state-of-the-art processes from the research laboratory into production, as well as to provide production equipment and process solutions based on our designs. CVD/First Nano also operates our Application Laboratory where our personnel interact effectively with the scientists and engineers of our customer base. CVD/First Nano operates from our main facility in Central Islip, New York.

**SDC** designs and manufactures ultra-high purity gas and chemical delivery control systems for state-of-the-art semiconductor fabrication processes, solar cells, LEDs, carbon nanotubes, nanowires, and a number of industrial applications. Our SDC products are sold on either a stand-alone basis, or together with our CVD/First Nano systems. SDC operates from a 22,000 square foot facility fitted with Class 10 and Class 100 clean room manufacturing space located in Saugerties, New York.

**CVD Materials** Has several elements and product groups. These are the Tantaline® corrosion resistant surface treatment, the MesoScribe robust material direct write, the Electronic Materials for advance electronics and Carbon Composite products.

**Tantaline®** treatment is a diffusion bonded protective layer of tantalum formed by chemical vapor deposition on the surface of common materials. Tantalum is the most corrosion resistant metal commercially available. This surface layer provides protection against many of the most aggressive environments, including high temperature concentrated acid. Global sales and technical support is provided by our facility in Central Islip, New York with production provided from our European facility located in Nordborg, Denmark. Tantaline® US equipment systems continue to be installed and are in various stages of process testing and refinement. We have continued to increase our marketing efforts for equipment and materials, and in February 2020 we hired a salesman specific to Tantaline®. We continue to develop new Tantalum processes to improve the corrosion resistance of additional base material such as Nickel based alloys. In 2018, we announced that two patents applications were filed.

**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 Technologies operated from a 22,000 square foot facility located in Huntington Beach, CA, until May 2019. The relocation to our CVD Materials operations, in Central Islip, New York, has been completed and it was fully operational during the third quarter of 2019.

#### **Carbon Composites**

Our applications for the Carbon composite business come from achievements in our applications laboratory. In the fourth quarter of 2018, we announced the development of a family of advanced Fluid Reactors based on our innovations in nanotechnology and chemical vapor deposition technology. The Fluid Reactor is enabled by a novel reactor core element which allows the efficient transfer of gases into and out of liquids. The market adoption of this technology could supplant existing hollow fiber membrane technology for applications including filtration and liquid gasification or degasification. One such application is blood oxygenation cartridges, known as Extra Corporeal Membrane Oxygenators, which are typically used during cardio pulmonary bypass (CPB) surgery and are essential for life support. CVD has a patent pending embodying this technology. While holding promise the technology is in the evaluation phase and is not expected to generate revenue in near future.

The applications lab along with the sales and marketing team are exploring other possible Carbon based products that can be made from this technology.

## Principal Equipment Products

*Chemical Vapor Deposition* - A process which passes a gaseous compound over a target material surface that is heated to such a degree that the compound decomposes and deposits a desired layer onto substrate material. The process is accomplished by combining appropriate gases in a reaction chamber, of the kind produced by the Company, at elevated temperatures (typically 150-1,600° Celsius). Our chemical vapor deposition systems are complete and include all necessary instrumentation, subsystems and components and include state-of-the-art process control software. We provide both standard and specifically engineered products for particular customer applications. Some of the standard systems we offer are for silicon, silicon-germanium, silicon dioxide, silicon nitride, polysilicon, liquid phase epitaxial, metalorganic chemical vapor deposition, carbon nanotubes, graphene nanowires, solar cell research and solar material quality control.

*Chemical Vapor Deposition Systems* - Used in a variety of models for laboratory research and production. All models are offered with total system automation, a microprocessor control system by which the user can measure, predict and regulate gas flow, temperature, pressure and chemical reaction rates, thus controlling the process in order to enhance the quality of the materials produced. Our standard microprocessor control system is extremely versatile and capable of supporting the complete product line and most custom system requirements. These chemical vapor deposition systems are typically priced between \$80,000 and \$2,000,000, but can be significantly higher for plant size chemical vapor deposition systems.

*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 or reduced pressures. Our RTP systems are priced up to \$600,000.

*Annealing, Diffusion and Low Pressure Chemical Vapor Deposition (LPCVD) Furnaces* - Used for diffusion, oxidation, implant anneal, solder reflow, solar cell manufacturing and other processes. 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 cascade 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. Our annealing and diffusion furnace systems are priced up to \$900,000.

*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. A customer order often includes multiple systems and can total up to \$1,000,000.

## Principal Materials Products

*Quartz-ware* - We provide standard and custom fabricated quartz-ware used in our equipment and other customer tools. We also provide repair and replacement of existing quartz-ware. The business volume is favorably impacted by introduction of our CVD/First Nano systems and equipment into production applications, as quartz is a consumable item.

*MesoPlasma™ Direct Write Printing*: A materials deposition process that provides high definition traces, fine feature patterns, and coatings onto conformal components. Powder materials are injected into a thermal plasma where they are rapidly heated and deposited onto the substrate or component. A 6-axis robotic system ensures pattern placement accuracy and manufacturing consistency. 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.

*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 drastically improves the corrosion resistance of these base stainless-steel parts extending the service life and increasing value in a wide range of applications.

## Markets and Marketing

We serve multiple global markets including aerospace, defense, biomedical implants, microelectronic and micromechanical devices, semiconductor, universities and research centers. Due to the highly technical nature of our products, we believe it is essential to contact customers directly through our sales personnel and through a network of domestic and international independent sales representatives and distributors specializing in the type of equipment, products and services that we sell. In addition to our traditional customer base, we are now accessing new markets and new customers through Tantaline®, MesoScribe®, and other components of our expanding materials business. Our primary marketing activities include direct sales contacts, participation in trade shows and our internet websites [www.cvdequipment.com](http://www.cvdequipment.com), [cvdmaterialscorporation.com](http://cvdmaterialscorporation.com), [www.stainlessdesign.com](http://www.stainlessdesign.com), [www.firstnano.com](http://www.firstnano.com), [tantaline.com](http://tantaline.com) and [www.mesoscribe.com](http://www.mesoscribe.com).

## Customers

We continue to work on expanding our product and service offerings. Our systems and products are used in research and in production applications. We market and sell primarily to electronic component manufacturers, institutions involved in electronic component research (such as universities, government and industrial laboratories) and to industries such as aerospace and medical that require specialized coatings. We have both a domestic and international customer base with hundreds of installed systems.

Given the complexity of some of the systems we sell, revenue from a single customer in any one year can exceed 10.0% of our total sales. Two customers represented 39.3% in total and one customer represented 38.2%, respectively, of our annual revenues in fiscal years 2019 and 2018. We believe that our relationships with these customers are positive and may provide us with ongoing continuous sustainability for years to come, however the loss of a large 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.

For the year ended December 31, 2019, approximately \$4.2 million or 21.3% of our revenues were generated by sales to customers outside the U.S., compared to approximately \$2.4 million or 9.9% for the year ended December 31, 2018.

### **Warranties**

Warranties on our equipment are typically for twelve months but can range up to twenty-four months from shipment with extended contracts. We furnish any warranties from original manufacturers of components used in our products. We provide service and support for our installed base of equipment with in-house field service personnel. Warranty costs, including those incurred in fiscal years 2019 and 2018, are and have been historically insignificant and expensed as incurred.

### **Competition**

We can experience intense direct competition from both domestic and international competitors in all of our equipment segments. Our MesoScribe operations, which is in the adoption phase, faces barriers from established indirect competitors of existing solution providers. 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 ours. 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 on the basis of know-how, technical performance, quality, delivery, price and aftermarket support.

*CVD/First Nano* competes with companies located in Asia, Europe and the US in the research market. These companies have limited support and safety and system design capabilities. For the academia market, we also compete with laboratory built systems. Our equipment for production applications competes with in-house design and engineering capability and the capacity to build their own equipment internally. 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 can be very competitive.

*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 intimate understanding of how the systems in which our products are incorporated are actually used in field applications. We have gained this understanding as a result of having designed and built complex process gas systems for *CVD/First Nano* as well as for a number of the world's leading semiconductor, aerospace, medical, solar manufacturers, research laboratories and universities.

## 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. Subject to lead times, the components and raw materials we use in manufacturing our products are readily obtainable.

We maintain a fully-equipped machine shop that we use to fabricate a significant portion of our metal components in-house, including the most complex designed parts of our equipment. The investment in our machine shop has significantly helped in increasing our efficiencies while significantly reducing labor costs and time in production. Similarly, our quartz fabrication capability is sufficient to meet our quartz-ware needs.

Materials procured from the outside 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, 2019, our order backlog was approximately \$8.9 million, compared to \$3 million as of December 31, 2018, an increase of \$5.9 million. 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, including the start-up of the CVD Materials operations. 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. Order backlog is usually a reasonable management tool to indicate expected revenues, however, it does not provide an assurance of future achievement or profits as order cancellations or delays are possible.

## Intellectual Property

Our success is dependent, in part upon our proprietary technology and other proprietary rights. We have historically protected our proprietary information and intellectual property such as design specifications, blueprints, technical processes and employee know-how through the use of non-disclosure agreements. In addition, where we deem appropriate, we have, 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 and/or assert rights in certain trademarks relating to certain of our products and product lines, and claim copyright protection for certain proprietary software and documentation.

In the fourth quarter of 2018, we announced the development of a family of advanced Fluid Reactors based on our innovations in nanotechnology and chemical vapor deposition technology. The Fluid Reactor is enabled by a novel reactor core element which allows the efficient transfer of gases into and out of liquids. The market adoption of this technology could supplant existing hollow fiber membrane technology for applications including filtration and liquid gasification or degasification. One such application is blood oxygenation cartridges, known as Extra Corporeal Membrane Oxygenators, which are typically used during cardio pulmonary bypass (CPB) surgery and are essential for life support. CVD has a patent pending embodying this technology. CVD is continuing development of its Fluid Reactor technology and during 2019 filed two related US Provisional Patent Applications.

In addition to the above, we continue to develop new Tantalum processes under our Tantaline® line to improve the corrosion resistance of additional base material such as Nickel-based alloys. CVD's PCT Publication for this patent pending technology ("Objects Having a Functional Surface Layer and Methods for Making Them") is currently available for public review (PCT Publication number WO2020/014622).

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**

The university research community is at the forefront of nanotechnology research, and we are focused on providing state-of-the-art systems to this market that will help bridge the gap between pioneering research and marketable products. Our Application Laboratory, together with a number of leading universities and startup companies with whom we partner from time to time, conducts cutting-edge research on the growth and infiltration of carbon nanotubes, graphene and nanowires as well as on selected aerospace manufacturing processes. The results of this research could have far reaching implications concerning the use and manufacture of carbon nanotubes, graphene, nanowires and aerospace coatings for many markets. Our intention is that together with leading edge universities and start-up companies and major aerospace/defense companies, we will leverage our collective expertise in this field, which will allow us to capitalize on commercial opportunities in the future.

In 2019, we incurred approximately \$598,000 in research and development expenses as compared to \$607,000 in 2018.

#### **Government Regulation**

We are subject to a variety of federal, state and local government regulations, such as environmental, labor and export control. 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.

**Insurance**

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.

**Employees**

At December 31, 2019, we had 172 employees. We had 84 employees in manufacturing, 44 in engineering (including research and development and efforts related to product improvement) 4 in field service, 8 in sales and marketing and 32 in general management, maintenance and administration, compared to 197 employees as of December 31, 2018.

## **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.

***We have significant investments in our CVD Materials segment, which could be met with further delays and ongoing losses that could materially and adversely impact our financial results and cash flow.***

To support the expected growth of our CVD Materials segment and to house the US based business, on November 30, 2017, we purchased the premises located at 555 North Research Place, Central Islip, NY (the "Premises"). The purchase price of the building was \$13,850,000, exclusive of closing costs. We have monthly principle and interest payments of \$62,481 and have invested \$2.7 million and \$2.5 million during 2019 and 2018, respectively, in building improvements, machinery, and other expenses related primarily to CVD Materials. Since September 2019, Mesoscribe™ has secured orders of approximately \$2 million, and in early 2020 we have hired four employees including test and project management to support those orders and growth opportunities. Tantaline® US equipment systems continue to be installed and are in various stages of process testing and refinement. We have continued to increase our marketing efforts for equipment and materials, and in February 2020 we hired a salesman specific to Tantaline®. If we are unable to reach profitable operations and not recover our investment, it could have a material adverse effect on our financial condition.

***Business or economic disruptions or global health concerns could seriously harm our business.***

Broad-based business or economic disruptions could adversely affect our business and the sale of our products. For example, in December 2019 an outbreak of a novel strain of coronavirus originated in Wuhan, China, and has since spread to a number of other countries, including the United States. Initially, this outbreak resulted in extended shutdowns of certain businesses in the Wuhan region and had ripple effects to businesses around the world. Most recently this disruption has extended to the United States including complete or partial government shutdowns of many businesses, schools, bars and restaurants, including our Company. We cannot presently predict the scope and severity of the business shutdowns or disruptions to us, but if we or any of the third parties with whom we engage, including our customers, suppliers and other third parties with whom we conduct business, were to experience extended shutdowns or other business disruptions, our ability to conduct our business could be materially and negatively impacted, and could have a material adverse effect on our business and our results of operation and financial condition.

***We have 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.***

Two customers represented 39.3% in total and one customer represented 38.2%, respectively, of our annual revenues in fiscal years 2019 and 2018. We believe that our relationships with these customers are positive and may provide us with ongoing continuous sustainability for years to come, however the loss of a large 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 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 of our significant customers do not place orders, or they substantially reduce, delay or cancel 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.

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

We depend on our senior executives, including Leonard A. Rosenbaum, our Chairman of the Board of Directors, 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. We do not have long-term employment agreements with our key employees. We presently have a key person life insurance policy on the life of Leonard A. Rosenbaum, for a total insured amount of \$5 million, which may not be sufficient to cover our loss of Mr. Rosenbaum's services. Furthermore, 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.

*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 continually 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.

*If demand declines for chemical vapor deposition, 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 aerospace, medical, solar, 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 conditions of the markets in which we operate are volatile. The demand for our products and the profitability of our products can change significantly from period to period as a result of numerous factors.***

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

- the availability of funds for research and development;
- global and regional economic conditions;
- 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; and
- changes in technology.

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

***Volatile and 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.***

Demand for our equipment and related consumable products may be volatile as a result of sudden 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 as a result of procurement and production lead times, and the deferral of certain revenue under our revenue recognition policies. The fiscal period in which we are able to 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 may be materially adversely affected and cost reduction measures may 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. In 2017, 2018 and 2019, we reported pre-tax income (loss) of \$7,195,000, (\$5,558,000) and (\$4,914,000), respectively.

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

***We 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.

***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, in particular, 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 in particular, 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 for the production of carbon nanotubes and the sale of such materials, the determination that these materials are harmful could adversely affect the expansion of our business.

***We may experience increasing price pressure.***

Our historical business strategy for many of our products has focused on product performance and customer service rather than on price. As a result of budgetary constraints, many of our customers are extremely price sensitive when purchasing of capital equipment. If we are unable to obtain prices that allow us to continue to compete on the basis of product performance and customer service, our profit margins will be reduced.

***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. In order 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.

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

- The failure or inability of suppliers to timely deliver sufficient quantities of quality parts on a cost-effective basis;
- Volatility in the availability and cost of materials, including rare earth elements;
- Difficulties or delays in obtaining required import or export approvals;
- Information technology or infrastructure failures; and

- Natural disasters or other events beyond our control (such as earthquakes, floods or storms, regional economic downturns, pandemics, social unrest, political instability, terrorism, or acts of war).
- The effects of the novel coronavirus (COVID-19) on our employees, suppliers and other third-parties upon which we rely.

For example, we may source certain materials used in the development and manufacture of our products from regions affected by the novel coronavirus (COVID-19), which could make access to our supply chain difficult and could affect our business. If a supplier fails to meet our requirements concerning quality, cost, socially-responsible business practices, 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.

***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, largely consists of orders for customized systems including our chemical vapor deposition equipment and annealing and diffusion furnaces which are built to client specifications. We also have a significant concentration of revenue with customers exceeding 10% of revenues. Two customers represented 39.3% in total and one customer represented 38.2%, respectively, of our annual revenues in fiscal years 2019 and 2018. These customized systems can have prices that range from \$100,000 to several million dollars, depending on the configuration, specific options included and any special requirements of the customer. Because our orders are subject to cancellation or delay by the customer, our backlog at any particular 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.

***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. 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.

In particular, we have, from time to time, experienced difficulty 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.

***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, in order 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. These efforts include those related to the development of technology for the commercialization of carbon nanotubes. 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.***

Our success is dependent in part on our technologies and our other proprietary rights. We believe that while patents can be useful and may be utilized by us in the future, they are not always necessary or feasible to protect our intellectual property. The process of seeking patent protection is lengthy and expensive, and we cannot be certain that applications will actually result in issued patents or that issued patents will be of sufficient scope or strength to provide meaningful protection or commercial advantage to us. In addition to patent protection, we have also historically protected our proprietary information and intellectual property such as design specifications, blueprints, technical processes and employee know-how, by limiting access to this confidential information and trade secrets and through the use of non-disclosure agreements. Other companies and individuals, including our larger competitors, may develop technologies that are similar or superior to our technology, or design around the intellectual property that we own or license. Our failure to adequately protect our intellectual property, could result in the reduction or extinguishment of our rights to such intellectual property. We also assert rights to certain trademarks relating to certain of our products and product lines. We have not filed trademark applications to protect such marks with any governmental agency, including, but not limited to the U.S. Patent and Trademark Office. We claim copyright protection for certain proprietary software and documentation, but we have not filed any copyright applications with the U.S. Copyright Office in connection with those works. As a result, we can give no assurance that our trademarks and copyrights will be upheld or successfully deter infringement by third parties.

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 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. 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, or defending our position. Nevertheless, we cannot ensure that we will be able to obtain licenses, or, if we are able to obtain licenses, that 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 financial position and results of operations could be materially and adversely affected.

***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, 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 need to manage the growth of our CVD Materials operations effectively or we may experience difficulty in filling customer orders, declining product quality, increased costs or other operating challenges.***

We anticipate that growth of our operations will be required to satisfy our projected increase in demand for our products and to avail ourselves of new market opportunities. The expanding scope of our business and the growth in the number of our employees, customers and products have placed and will continue to place a significant strain on our management, information technology systems, manufacturing facilities and other resources. To properly manage our growth, we may need to hire additional employees, upgrade our existing financial and reporting systems and improve our business processes and controls. Failure to effectively manage our growth could make it difficult to manufacture our products and fill orders, as well as lead to declines in product quality or increased costs; any of these would adversely impact our business and results of operations.

Historically, we have only manufactured in unit or small batch quantities for our systems orders. If we receive orders for a large number of our systems, we may not have the internal manufacturing capacity to fill these orders on a timely basis, if at all, and may be forced to subcontract or outsource some of the fabrication of these systems to third parties. We cannot assure you that we will be able to successfully subcontract or outsource the fabrication of our systems at a reasonable cost to us, or that such third parties will adhere to our quality control standards.

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

During the year ended December 31, 2019, approximately \$4.2 million or 21.3% of our revenues were generated by sales to customers outside the U.S. compared to approximately \$2.4 million or 9.9% for the year ended December 31, 2018.

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.

All 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.

***If our critical suppliers fail to deliver sufficient quantities of 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. 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 over 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.

We cannot assure you that our financial position and results of operations will not be materially and adversely affected if, in the future, we do not receive in a timely and cost-effective manner a sufficient quantity of quality component parts and materials to meet our production requirements.

***We might require additional financing to expand our operations.***

Although we purchased an additional facility in November 2017, we could require additional financing to support our investment in our CVD Materials segment and to further implement our overall growth plans. If any additional financing is not available if and when required on commercially reasonable terms, if at all, or, even if available and we issue additional common stock, it may materially dilute the ownership interests of the then existing shareholders.

***We may be required to take additional impairment charges on assets.***

We are required to assess goodwill and indefinite-lived intangible assets at least annually for impairment, or on an interim basis, whenever certain events occur or circumstances change, such as an adverse change in business climate or a decline in the overall industry, that would more likely than not reduce the fair value below its carrying amount. We are also required to test 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, such as our recent acquisitions of assets owned by Tantaline ApS and MesoScribe Technologies, Inc. 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.

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

The stock market in general and the market for technology stocks in particular 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;
- 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; and
- the occurrence of major catastrophic events, including the effects of the spread of the novel coronavirus (COVID-19)
- trading volume is low

Significant price and value fluctuations have occurred with respect to our publicly traded securities and 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.

***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 in excess of 1000° Celsius have certain inherent risks. A failure of our product(s) 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.

***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.

***If we are subject to cyber-attacks 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.

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.

***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.

***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.

**Item 1B. Unresolved Staff Comments**

None.

**Item 2. Description of Property.**

<b>Owned Locations</b>	<b>Size (sf)</b>	<b>Segment</b>	<b>Mortgage/Loan</b>	<b>Principal use</b>
Central Islip, NY	130,000	CVD Equipment	Yes	Corporate: R&D; Manufacturing
Central Islip, NY	179,000	CVD Materials	Yes	Manufacturing and R&D
Saugerties, NY	22,000	SDC	No	Admin; Manufacturing

  

<b>Leased Locations</b>	<b>Size (sf)</b>	<b>Segment</b>	<b>Lease term</b>	<b>Principal use</b>
Nordborgvej, Denmark	7,793	CVD Materials	1 year	Process coatings, Admin

**Item 3. Legal Proceedings.**

As previously disclosed on our Current Report on Form 8-K filed with the Securities and Exchange Commission on November 15, 2019, a complaint was filed against the Company in the United States District Court for the Eastern District of New York by plaintiff O2Cure Ltd. alleging patent infringement by the Company, and seeking injunctive relief against the Company to settle with unspecified damages.

Also, as previously disclosed by the Company, on January 29, 2020, O2Cure Ltd. filed a Notice of Voluntary Dismissal Without Prejudice in the United States District Court for the Eastern District of New York. Accordingly, the claims previously asserted in the Complaint against the Company have been withdrawn and the action is now closed.

In addition, we are and may become subject to various claims, lawsuits and proceedings in the ordinary course of our business. Such claims include claims by current or former employees, distributors and competitors, claims concerning intellectual property infringement and product liability claims. The outcomes of these legal actions are not within our complete control and may not be known for prolonged periods of time. We are currently involved in a litigation concerning a former employee who alleges he suffered injuries while operating equipment during the course of his employment. We believe that the plaintiff's claims are adequately covered by insurance and, in the opinion of management, we have meritorious defenses and such claims are not expected to result in a material, adverse effect on our financial condition. However, in the event that damages exceed the aggregate coverage limits of our policies or if our insurance carriers disclaim coverage, we believe it is possible that costs associated with these claims could have a material adverse impact on our consolidated results of operations, financial position or cash flows.

**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

Our common stock is listed on the NASDAQ Capital Market under the symbol "CVV." The following table sets forth, for the periods indicated, the high and low prices of our common stock on the NASDAQ Capital Market.

		High		Low
Year Ended December 31, 2019:				
1st Quarter	\$	4.75	\$	3.38
2nd Quarter		3.98		3.44
3rd Quarter		3.80		3.25
4th Quarter		4.00		3.10
Year Ended December 31, 2018:				
1st Quarter	\$	11.97	\$	8.75
2nd Quarter		9.95		6.39
3rd Quarter		7.78		5.25
4th Quarter		6.33		3.35

As of March 24, 2020, there were approximately 91 holders of record and approximately 1,200 beneficial owners of our common stock, and the closing sales price of our common stock as reported on the NASDAQ Capital Market was \$2.51.

#### 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, 2019.

<b>Plan Category</b>	<b>Number of securities to be issued upon exercise of outstanding options, warrants and rights(1)</b>	<b>Weighted-average exercise price of outstanding options, warrants and rights(2)</b>	<b>Number of securities remaining available for future issuance</b>
Equity compensation plans approved by security holders	432,930	\$ 11.00	555,018
Equity compensation plans not approved by security holders	--	N/A	--
<b>Total</b>	<b>432,930</b>	<b>\$ 11.00</b>	<b>555,018</b>

(1) Reflects aggregate options and restricted stock awards outstanding under our 2001 Stock Option Plan, 2007 Share Incentive Plan and 2016 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. Selected Financial Data.

None.

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

*Except for historical information contained herein, this "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, as amended. These statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance, or achievements of the Company to be materially different from any future results, performance, or achievements expressed or implied by such forward-looking statements. These forward-looking statements were based on various factors and were 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 the Company's existing and potential future product lines of business; the Company's ability to obtain financing on acceptable terms if and when needed; uncertainty as to the Company's future profitability, uncertainty as to the future profitability of acquired businesses or product lines, uncertainty as to any future expansion of the Company and the effect of the novel coronavirus (COVID-19) on our business and operations, 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. The Company assumes 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 results are no guaranty future performance. 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.*

**Executive Level Summary**

We design, develop and manufacture 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 research and industrial applications. This equipment is used by our customers to research, design, and manufacture these materials or coatings for aerospace engine components, medical implants, semiconductors, solar cells, smart glass, carbon nanotubes, nanowires, LEDs, MEMS and other applications. Through CVD Materials and our Application Laboratory, we develop new material systems, provide material coating services, process development support and process startup assistance with the focus on *enabling tomorrow's technologies™*.

Based on more than 38 years of experience, we use our capabilities in engineering, manufacturing and process development to transform new applications into leading-edge manufacturing solutions. This enables university, research and industrial scientists at the cutting edge of technology to develop next generation aerospace, medical, nano, LEDs, semiconductors and other electronic components. We develop, manufacture and provide equipment for research and production based on our proprietary designs. We have built a significant library of design expertise, know-how and innovative solutions to assist our customers in developing these intricate processes and to accelerate their commercialization. This library of solutions, along with our vertically integrated manufacturing facilities, allows us to provide superior design, process and manufacturing solutions to our customers on a cost-effective basis.

Our strategy is to target opportunities in the research, development and production equipment market, with a focus on higher-growth applications such as aerospace, medical, smart glass, carbon nanotubes, nanowires, graphene, MEMS and LEDs. To expand our penetration into these growth markets, we have developed a line of proprietary standard products and custom systems. Historically, we manufactured products for research and development on a custom one-at-a-time basis to meet an individual customer's specific research requirements. Our proprietary systems leverage the technological expertise that we have developed through designing these custom systems onto a standardized basic core. This core is easily adapted through a broad array of available options to meet the diverse product and budgetary requirements of the research community. By manufacturing the basic core of these systems in higher volumes, we are able to reduce both the cost and delivery time for our systems. These systems, which we market and sell under the EasyTube® and CVD product lines, are sold to researchers at universities, research laboratories, and startup companies in the United States and throughout the world.

Sales of our proprietary standard, custom systems and process solutions have been driven by our installed customer base, which includes several Fortune 500 companies. The strong performance and success of our products has historically driven repeat orders from existing customers as well as business from new customers. However, with our proprietary solutions and expanded focus on "*accelerating the commercialization of tomorrow's technologies*"™ we have been developing a new customer base in addition to growing with our existing customers. We have generally gained new customers through word of mouth, limited print advertising and trade show attendance. We are now also gaining new customers by their awareness of our company in the marketplace with results from our Application Laboratory, relationships with startup companies, increased participation in trade shows and expanded internet advertising.

The core competencies we have developed in equipment and software design, as well as in systems manufacturing and process solutions, 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 powerful tools to understand, optimize and repeatedly control their processes. Our vertically integrated structure allows us to control the manufacturing process, from bringing raw metal and components into our manufacturing facilities to shipping out finished products. These factors significantly reduce cost, improve quality and reduce the time it takes from customer order to shipment of our products. Our Application Laboratory allows selected customers to bring up their process tools in our Application Laboratory and to work together with our scientists and engineers to optimize process performance.

### **Current Developments**

Our focus during the second half of 2019 has been on i) getting our materials facility up and running, ii) starting our MesoScribe™ facility back-up after moving from California to New York, commencing at the end of May 2019 and iii) pursuing additional equipment sales. We invested approximately \$2.7 million and \$2.5 million during 2019 and 2018, respectively, in building improvements, machinery, and other expenses related primarily to CVD Materials. Mesoscribe™ has been back up operating since our third quarter 2019. Since September 2019, Mesoscribe™ has secured orders of approximately \$2 million, and in early 2020 we have hired four employees including test and project management to support those orders and growth opportunities. Tantaline® US equipment systems continue to be installed and are in various stages of process testing and refinement. We have continued to increase our marketing efforts for equipment and materials, and in February 2020 we hired a salesman specific to Tantaline®.

Revenue in the last two years decreased from \$41.1 million for the year ended December 31, 2017, to \$24.3 million and \$19.6 million, for the years ended December 31, 2018 and 2019, respectively. However, revenue for Q3 and Q4 2019 were \$5.7 million and \$5.5 million, respectively. Our new orders for Q3 and Q4 2019 were \$7.9 million and \$7.8 million, respectively, however new orders for Q1 2020 are significantly below those levels. Since December 2019 an outbreak of a novel strain of coronavirus originated in Wuhan, China, and has since spread to a number of other countries, including the United States. Initially, this outbreak resulted in extended shutdowns of certain businesses in the Wuhan region and had ripple effects to businesses around the world. Most recently this disruption has extended to the United States including complete or partial government shutdowns of many businesses, schools, bars and restaurants, including our Company. We cannot presently predict the scope and severity of the business shutdowns or disruptions to us. Despite these events, we continue to strive to achieve new orders. As a result, the timing for a return to profitability depends upon, among other things, the receipt of new orders, the ramp up of the materials business, as well as reviewing our planned expenditures and operating expenses for potential cost savings to minimize these losses, including our ability to sublet a portion of the CVD materials facility vacated at the end December 31, 2019. At December 31, 2018, we reduced our employees 15% to 197, and we further reduced our employees 13% to 172 at December 31, 2019. We continue to monitor our staffing level to support current operations and level of current and expected orders.

We continued our mission to develop and enable the commercialization of next-generation technologies, by incorporating our technology into equipment built for customers' manufacturing processes. Our endeavors in applications for LED materials, medical implants and coatings, aerospace coatings, carbon composites for MEMs and medical devices are some of the areas we have been working on.

We continued to make a significant investment in our CVD Materials business. In November 2018, we filed a provisional patent application for a family of advanced Fluid Reactors based on our innovations in nanotechnology and chemical vapor deposition technology. The Fluid Reactor is enabled by a novel reactor core element which allows the efficient transfer of gases into and out of liquids. The market adoption of this technology could supplant existing hollow fiber membrane technology for applications including filtration and liquid gasification or degasification. One application is blood oxygenation cartridges known as an Extra Corporeal Membrane Oxygenator which is typically used during cardio pulmonary bypass (CPB) surgery and is essential for life support.

Our MesoScribe™ Direct Write Technology continues to make progress in specialized applications for temperature sensors, conformal antennas, flexible electronics and heaters for applications in aerospace and electronics where standard solutions have been unable to meet the physical constraints that need to be addressed.

Investments in our Application Laboratory and CVD Materials are necessary and not related to our quarterly revenue fluctuations. We continue to believe that expansion and innovation in key markets like aerospace, medical, MEMs, semiconductors is the key to securing our growth over the long-term.

We continue to dedicate significant portions of our technical and manufacturing resources to new materials development and opening of the new CVD Materials facility. We believe this will pave the way for future expansion across our portfolio and to improve and streamline revenue growth and profitability over the longer term.

Constant investment in expansion and innovation is necessary, even during times of reduced order levels, to strengthen and secure our competitive position and open up new opportunities in the markets we serve. We believe we have the capital to continue to work to produce increased yet stable revenue, productivity and profitability over the long-term.

**Statement of Operations**

	<b>Twelve Months Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Revenue	\$ 19,646,652	\$ 24,334,331
Cost of revenue	<u>16,850,077</u>	<u>19,156,201</u>
Gross profit	<u>2,796,575</u>	<u>5,178,130</u>
Operating expenses		
Research and development	597,456	606,618
Selling and shipping	898,338	1,620,089
General and administrative	<u>6,285,496</u>	<u>8,205,942</u>
Total operating expenses	<u>7,781,290</u>	<u>10,432,649</u>
Operating loss	<u>(4,984,715)</u>	<u>(5,254,519)</u>
Other income (expense):		
Interest income	142,579	159,953
Interest expense	(482,844)	(463,017)
Other Income	411,230	-
Total other income (expense), net	<u>70,965</u>	<u>(303,064)</u>
Loss before income tax	(4,913,750)	(5,557,583)
Income tax expense (benefit)	<u>1,413,908</u>	<u>(356,562)</u>
Net loss	<u>(6,327,658)</u>	<u>\$ (5,201,021)</u>

**Revenue**

	<b>2019</b>	<b>2018</b>	<b>Change</b>	<b>% Change</b>
CVD Equipment	\$ 14,065,112	\$ 17,860,025	\$ (3,794,913)	(21.3%)
SDC	3,941,946	4,731,638	(789,692)	(16.7%)
CVD Materials	1,639,594	1,742,668	(103,074)	(5.9%)
Total	<u>\$ 19,646,652</u>	<u>\$ 24,334,331</u>	<u>\$ (4,687,679)</u>	<u>(19.3%)</u>

Our revenue for the year ended December 31, 2019 was \$19.6 million compared to \$24.3 million for the year ended December 31, 2018, resulting in a decrease of 19.3% which was primarily attributable to the completion of orders received from our largest customer in the prior year. This customer, in the aerospace industry from which we have secured multiple orders, represented \$4.7 million or approximately 23.8% of our revenue for the year ended December 31, 2019 compared to \$9.3 million or approximately 38.2% of our revenue for the year ended December 31, 2018.

The revenue contributed for the year ended December 31, 2019, by the CVD Equipment segment, was \$14.1 million, or 71.6% of our overall revenue. This represented a decrease of 21.3% or \$3.8 million, as compared to \$17.9 million in the prior year, which totaled 73.4% of our overall revenue. This decrease was primarily the result of the completion of equipment sales orders from our largest customer in the prior year.

Annual revenue for our SDC segment decreased to \$3.9 million in 2019 as compared to \$4.7 million in 2018, a decrease of 16.7%. The decrease is primarily attributable to a higher level of sales order activity in the prior year, as well as the timing of delivery of a large order at the end of 2019 due to customer delays. The SDC segment represented 20.0% and 19.4% of our total revenue during the years ended December 31, 2019 and December 31, 2018, respectively.

Revenues for our CVD Materials segment were \$1.6 million in the year ended December 31, 2019 as compared to \$1.7 million for 2018. The decrease of \$.1 million was due to decreased sales from MesoScribe, impacted by its move from California to NY in the summer of 2019.

**Gross Profit**

Gross profit for the year ended December 31, 2019 amounted to \$2.8 million, with a gross profit margin of 14.2 %, compared to a gross profit of \$5.2 million and a gross profit margin of 21.3% for the year ended December 31, 2018. The decreased gross profit and gross profit margin were the result of the reduction in sales from our largest customer and delays in receiving new orders, while costs principally remained at levels to support our anticipated expansion of the CVD Materials segment and future growth.

## Research and Development, Selling and General and Administrative Expenses

### Research and Development:

Due to the technical development required on our custom orders, our research and development team and their expenses are charged to costs of goods sold when they are working directly on a customer project. When they are not working on a customer project, they work in our Application Laboratory and their costs are charged to research and development. For the years ended December 31, 2019 and 2018, we incurred \$598,000 and \$607,000 respectively of internal research and development costs.

### Selling:

Selling expenses were \$0.9 million or 4.6% of the revenue for the year ended December 31, 2019 as compared to \$1.6 million or 6.7% for the year ended December 31, 2018. The decrease was a result of cost reductions related to employees and payroll related costs as a result of lower sales.

### General and Administrative:

General and administrative expenses for the year ended December 31, 2019 were \$6.3 million or 32.0% of revenue compared to \$8.2 million or 33.7% during the year ended December 31, 2018, a decrease of \$1.9 million. The decrease was primarily the result of employee reductions and related payroll and benefit costs as a result of the overall lower sales demand, a \$367,000 decrease in stock compensation costs and a decrease of \$241,000 in consulting costs related to systems implementation and accounting services.

### Operating Loss

As a result of the decreased revenues and gross margins, we recorded an operating loss of \$5.0 million for the year ended December 31, 2019 as compared to operating loss of \$5.3 million for the year ended December 31, 2018, which was driven primarily by the reduced revenue from our largest customer.

### Other (Expenses)/Income

Other income (expenses) were \$71,000 and (\$303,000) for the years ended December 31, 2019 and 2018, respectively. This increased income was the primarily the result of \$411,000 in rental income from leasing a portion of our CVD Materials facility commencing in June 2019, offset partially by increased interest expense of \$20,000.

### Income Taxes

For the year ended December 31, 2019, we recorded an income tax expense of \$1,414,000 as compared to an income tax benefit of \$357,000 in the year ended December 31, 2018. For the year ended December 31, 2019, the Company has provided a full valuation allowance against all of the net deferred tax assets in the amount of \$2,497,414. This was based on management's assessment, including the last two years of operating losses, that it is more likely than not that the net deferred tax assets may not be realized in the future. During 2018, our corporate tax rate was reduced to 21% as a result of The Tax Cuts and Jobs Act ("TCJA") enacted December 22, 2017. This rate was partially offset by permanent differences related to fixed and intangible assets, stock-based compensation and other items resulting in an effective tax rate of 6.4%.

### **Net Income Loss**

As a result of the foregoing factors, for the year ended December 31, 2019, we had a net loss of \$6.3 million or \$.96 per diluted share compared to a net loss of \$5.2 million or \$0.80 per diluted share for the year ended December 31, 2018.

### **Inflation**

Inflation has not materially impacted our operations.

### **Liquidity and Capital Resources**

As of December 31, 2019, we had aggregate working capital of \$8.8 million compared to aggregate working capital of \$15.4 million at December 31, 2018. Our cash and cash equivalents of at December 31, 2019 and 2018 were \$8.7 million and \$11.4 million, respectively. The decrease in working capital of \$6.6 million is primarily attributable to the overall sales reductions and resulting operating loss for the year and debt service payments of approximately \$1.2 million, including payments on our investment in the CVD Materials building on November 30, 2017. We have invested \$2.7 million and \$2.5 million during 2019 and 2018, respectively, in building improvements, machinery, and other expenses related primarily to CVD Materials, and we also incurred operating costs of approximately \$.3 million, exclusive of interest expense. Further, there were decreases in contract assets of \$.8 million, cash of \$2.8 million and accounts receivable of \$1.5 million, as well as increases in deferred revenue of 1.0 million.

Accounts receivable, net of allowance for doubtful accounts, decreased by \$1.5 million or 37.4% at December 31, 2019 to \$2.6 million compared to \$4.1 million at December 31, 2018. This decrease is principally due to the timing of shipments and customer payments.

We have a loan agreement with HSBC USA, N.A. (the "HSBC") which is secured by a mortgage on our Central Islip headquarters at 355 South Technology Drive. The loan is payable in 120 consecutive equal monthly installments of \$25,000 in principal plus interest and a final balloon payment upon maturity in March 2022. The balances as of December 31, 2019 and December 31, 2018 were approximately \$2.4 million and \$2.7 million respectively. Interest accrues on the Loan, at our option, at the variable rate of LIBOR plus 1.75% or Prime less 0.5% (3.49% and 2.18% at December 31, 2019 and 2018, respectively).

On November 30, 2017, we purchased the premises located at 555 North Research Place, Central Islip, NY which is intended to house the CVD Materials segment. The purchase price of the land and the building was \$13,850,000 exclusive of closing costs.

As part of the acquisition, our newly formed wholly-owned subsidiary, 555 N Research Corporation (the "Assignee") and the Islip IDA, entered into a Fee and Leasehold Mortgage and Security Agreement (the "Loan") with HSBC in the amount of \$10,387,500, which was used to finance a portion of the purchase price to acquire the premises located at 555 North Research Place, Central Islip, New York (the "Premises"). The Loan was evidenced by the certain Note, dated November 30, 2017 (the "Note"), by and between Assignee and the Bank, and secured by a certain Fee and Leasehold Mortgage and Security Agreement, dated November 30, 2017 (the "Mortgage"), as well as a collateral Assignment of Leases and Rents ("Assignment of Leases").

The Note is payable in 60 consecutive equal monthly installments of \$62,481, including interest.

The balances as of December 31, 2019 and 2018 were approximately \$9.7 million and \$10.0 million, respectively. The Note bears interest for each Interest Period (as defined in the Note), at the fixed rate of 3.9148%. The maturity date for the Note is December 1, 2022. As a condition of the Bank making the Loan, we were required to guaranty Assignee's obligations under the Loan.

At December 31, 2018, we were not in compliance with the only financial covenant (fixed charge coverage ratio) contained in the Mortgage. On March 26, 2019 the Company received a waiver from HSBC until April 1, 2020. On August 5, 2019, the Company entered into a Mortgage Modification Agreement which replaced the former covenant with a Minimum Liquid Assets covenant. The Company is in compliance with its obligations under the mortgage at December 31, 2019.

In December 2019 an outbreak of a novel strain of coronavirus originated in Wuhan, China, and has since spread to a number of other countries, including the United States. Initially, this outbreak resulted in extended shutdowns of certain businesses in the Wuhan region and had ripple effects to businesses around the world. Most recently this disruption has extended to the United States including complete or partial government shutdowns of many businesses, schools, bars and restaurants, including our Company. We cannot presently predict the scope and severity of the business shutdowns or disruptions to us, but if we or any of the third parties with whom we engage, including our customers, suppliers and other third parties with whom we conduct business, were to experience extended shutdowns or other business disruptions, our ability to conduct our business could be materially and negatively impacted, and could have a material adverse effect on our business and our results of operation and financial condition.

At December 31, 2019 we have reduced our employee headcount by 13% to 172, as compared to 197 at December 31, 2018. We are continuing to evaluate our staffing levels to support the CVD Materials new building and related operations, and the level of current and expected orders. We believe that our cash and cash equivalent positions and cash flow from operations will be sufficient to meet our working capital and capital expenditure requirements for the next twelve months from the date of issuance of the accompanying financial statements.

## Critical Accounting Policies

### 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 significant estimates include 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 realizable value; allowance for doubtful accounts receivable; valuation of stock-based compensation; estimated lives and recoverable value of our long-lived assets and certain components of the deferred income tax provisions which are based on estimates of future taxable events.

### 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.

Incurring 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.

### Stock-Based Compensation

We record stock-based compensation in accordance with the provisions set forth in the Financial Accounting Standard Board ("FASB") Accounting Standards Codification ("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.

### Long-Lived Assets and Intangibles

Long-lived assets consist primarily of property, plant and equipment. Intangibles consist of patents, copyrights, 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 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. We had no recorded long-lived asset impairment charges in the statement of operations during each of the years ended December 31, 2019 and 2018.

### **Off-Balance Sheet Arrangements**

None.

### **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, 2019.

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.

Since the first quarter of 2019, through the third quarter of 2019, we remediated previously disclosed deficiencies by implementing changes, and monitoring the results of those changes in each successive quarter up to the quarter and year ended December 31, 2019 as follows: (1) established stricter formal procedures with respect to how and when our management will communicate to the auditors and Audit Committee on a more timely basis, (2) adopted sufficient written policies and procedures for accounting and financial reporting, (3) appointed and/or designated additional qualified personnel to ensure timely filing of the reports that we file or submit under the Exchange Act, (4) added additional, multiple review levels, and (5) receive from the staff of the foreign subsidiary financial information on a weekly, monthly and quarterly basis in order to monitor more closely. In addition, during the first quarter of 2019, we have reevaluated our internal controls regarding the estimation of costs on contracts in progress and have implemented changes as needed, and have also monitored those results up to the quarter and year ended December 31, 2019.

#### *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, 2019. 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, 2019, 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.**

None.

## 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

While the Board has not separated the positions of Chairman and CEO, it has appointed Lawrence J. Waldman as the Lead Independent Director. The Lead Independent Director is appointed by the Board and is responsible for coordinating the activities of the independent directors and the Chief Executive Officer of the Company to set agendas for Board meetings and chair executive sessions of the independent directors. The Lead Independent Director is also responsible for meeting, from time to time, with the Company's Compensation Committee to discuss the Chief Executive Officer's performance.

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

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

While our Board has no formal policy with respect to separation of the positions of Chairman and CEO or with respect to whether the Chairman should be a member of management or an independent director, we believe that the creation of the position of Lead Independent Director properly facilitates better communication between the Independent Directors on the one hand and the non-Independent Directors 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, Leonard Rosenbaum, is tasked with the responsibility of implementing our corporate strategy, we believe he is best suited for leading discussions with input from the Lead Independent Director, 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 24, 2020.

Name	Age	Position(s) with the Company
Leonard A. Rosenbaum	74	Chairman of the Board of Directors, Chief Executive Officer, President
Martin J. Teitelbaum	69	Director, General Counsel and Assistant Secretary
Conrad J. Gunther	73	Director, Chairperson-Compensation Committee
Lawrence J. Waldman	73	Lead Independent Director, Chairperson-Audit Committee
Raymond A. Nielsen	69	Director, Chairperson-Nominating, Governance and Compliance Committee
Thomas McNeill	57	Chief Financial Officer, Secretary and Treasurer
Steven Aragon	58	Chief Operating Officer
Kevin R. Collins	54	Vice President and General Manager-SDC Division
Emmanuel Lakios	58	Vice President of Sales and Marketing
Max Shatalov	49	Vice President of Engineering and Technology
Karlheinz Strobl	60	Vice President of Business Development

#### Leonard A. Rosenbaum

Leonard A. Rosenbaum founded the Company in 1982 and has been our President, Chief Executive Officer and has served as Chairman of the Board of Directors since that time. From 1971 until 1982, Mr. Rosenbaum was president, director and a principal stockholder of Nav-Tec Industries, a manufacturer of semiconductor processing equipment similar to the type of equipment we manufacture. From 1966 to 1971, Mr. Rosenbaum was employed by a division of General Instrument, a manufacturer of semiconductor materials and equipment.

#### Martin J. Teitelbaum, Esq.

Martin J. Teitelbaum has served as a member of our Board of Directors and General Counsel since 1985 and as our in-house General Counsel since May 16, 2011. Mr. Teitelbaum is an attorney, who prior to May 16, 2011, conducted his own private practice, the Law Offices of Martin J. Teitelbaum. Prior to establishing his own firm in 1988, Mr. Teitelbaum was a partner at Guberman and Teitelbaum from 1977 to 1987. In addition, Mr. Teitelbaum currently acts as our Assistant Secretary. Mr. Teitelbaum earned a B.A. in Political Science from the State University of New York at Buffalo and a Juris Doctor from Brooklyn Law School. Mr. Teitelbaum has served as our outside General Counsel for many years and his legal expertise makes him an asset to the Company's board of directors.

#### 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. He most recently served on the board of GVC Venture Corp., a public company from June 2004 until it merged with the Halo Companies in September 2009. Since January 2008, Mr. Gunther has served as an Executive Vice President and Senior Loan Officer for Community National Bank, a Long Island, New York based commercial bank, where he is responsible for all commercial lending. Mr. Gunther qualifies to serve on our board of directors as a result of his experience and expertise in the financial community.

#### Lawrence J. Waldman

Lawrence J. Waldman was appointed a member of the Board of Directors on October 5, 2016 and serves as Chairman of the Audit Committee as well as the Lead Independent Director. Mr. Waldman has over forty years of experience in public accounting. He joined First Long Island Investors LLC, an investment and wealth management firm, as a Senior Advisor in May 2016. Prior to that Mr. Waldman served as an advisor to the accounting firm of EisnerAmper LLP, where he was previously the Partner-in-Charge of Commercial Audit Practice Development for Long Island since September 2011. Prior to joining EisnerAmper LLP, Mr. Waldman was the Partner-in-Charge of Commercial Audit Practice Development for Holtz Rubenstein Reminick, LLP from July 2006 to August 2011. Mr. Waldman was 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. Mr. Waldman serves as a director of Apyx Medical Corporation, formerly Bovie Medical Corporation, since 2011 and he is currently the Chair of the Audit Committee and Lead Independent Director of the Board. Mr. Waldman has served as a member of the Board of Directors of Northstar/RXR Metro Income Fund, a non-traded Real Estate Investment Trust, and has served as a member of its audit committee from 2014 until October of 2018. Mr. Waldman was elected to the Board of Directors of Comtech Telecommunications Corp. in August of 2015, and since December 2015, serves as Chair of its Audit Committee. Mr. Waldman is also the Chair of the Supervisory Committee of Bethpage Federal Credit Union. Mr. Waldman previously served as a member of the State University of New York's Board of Trustees and as chair of its audit committee. He also previously served as the Chairman of the Board of Trustees of the Long Island Power Authority and as Chair and a member of the finance and audit committee of its Board of Trustees. Mr. Waldman is a Certified Public Accountant. Mr. Waldman qualifies to serve as a director, Audit Committee Chairman and Lead Independent Director because of his more than 35 years' experience in public accounting and his service on various boards.

#### Raymond 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 has been responsible for Project and Corporate Finance including Strategic Planning Initiatives since 2014. He has been a member of the Board of Directors of Bridgehampton National Bank and Bridge Bancorp Inc., its Parent holding company since 2013, serving on the Compensation Committee, Corporate Governance & Nominating Committee, ALCO, Loan, and the Compliance, BSA & CRA Committees. 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 also served as a Director of North Fork Bancorporation and its subsidiary North Fork Bank for 6 years where he chaired both the Compensation Committee and Audit Committee as well as having served as Lead Independent Director. Mr. Nielsen's extensive public company, banking and real estate development experience will provide a valuable resource to the Board of Directors and Executive Management.

### Thomas McNeill

Thomas McNeill was appointed as the Company's Chief Financial Officer, Secretary and Treasurer effective as of March 4, 2019. Mr. McNeill has been a Chief Financial Officer ("CFO") since 1996 and has seventeen years' of SEC reporting experience with two public companies, as well as a full range of financial and operational experience. Since April 2015, he has been CFO at Century Direct, LLC, a printing and mailing company serving the direct mail marketing industry. From November 2014 to April 2015, he was a consultant at Mailmen Inc. until its assets were purchased by Century Direct, LLC. Mr. McNeill was CFO/COO at Nina McLemore from July 2013 to June 2014, a woman's retail apparel Company. On the Public reporting side, he was CFO at DineWise, Inc. from April 2006 to April 2013, a direct to consumer prepared frozen foods company, and from October 1996 to April 2006, was CFO at Global Payment Technologies, Inc, a hi-tech manufacturing and engineering company. Mr. McNeill is a Certified Public Accountant who began his career at KPMG, achieving the position of audit manager. Mr. McNeill holds a BBA in accounting from Hofstra University.

### Steven Aragon

Dr. Steven Aragon was appointed Chief Operating Officer by the Board of Directors on October 20, 2014. Dr. Aragon has over 25 years of thin-film process, materials, and system expertise applied to photovoltaic, optical, electronic, and magnetic device fabrication. He received his Ph.D. in Physical Chemistry from the University of California, Santa Cruz, in 1990 and his MBA from Santa Clara University in 1996. He is the holder of five process equipment design patents. Dr. Aragon was a co-founder of Optimus Energy Systems International Inc. and served as its Chief Technical Officer and Senior Vice-President – Engineering from November 2011 to October 2014. From June 2008 to October 2011, He has also served as Vice-President – Engineering at Stion Corp of San Jose, California, a maker of nanostructure-based CIGS (copper indium gallium sulphur diselenide) thin-film photovoltaic panels and as the Vice President – Engineering at Day Star Technologies Inc. from June 2001 to June 2008.

### Kevin R. Collins

Prior to his appointment as Vice President and General Manager-SDC Division, Mr. Collins served as the General Manager of CVD's SDC Division 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.

### Emmanuel Lakios

Mr. Lakios has over thirty (30) years of experience serving the semiconductor, data storage and optical device industries and is the holder of several patents in the field of process equipment and device structure. From 2015 until earlier this year, 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.

### Max Shatalov

Dr. Shatalov joined CVD as 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.

### Karlheinz Strobl

Dr. Karlheinz Strobl has been the Vice President of Business Development since October 2007. From 1997 to 2007, he was the founder and President of eele Laboratories, LLC, a technology and manufacturing solutions development company for a novel Light Engine for the video and data projection display market. Dr. Strobl holds over 14 patents and earned an MBA from Boston University, a PhD from the University of Innsbruck and an MS from both the University of Innsbruck and the University of Padova. He has also worked at the Max Planck Institute and at Los Alamos National Laboratory.

### **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 "Corporate Overview."

### **Audit Committee**

Our Board of Directors has an Audit Committee that currently consists of, Lawrence J. Waldman, Chairman, Conrad J. Gunther and Raymond A. Nielsen. During the fiscal year ended December 31, 2019, the Audit Committee held seven 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. Gunther, Waldman and Nielsen are "independent" under the requirements of the NASDAQ Stock Market.

The Board of Directors has determined that each of Messrs. Gunther and 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, 2019, all of the filings for our officers, directors and ten percent shareholders were made on a timely basis except Dr. Max Shatalov, who inadvertently failed to file timely a Form 3.

**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, 2019 and 2018.

<b>Name and principal position</b>	<b>Year</b>	<b>Salary (\$)</b>	<b>Bonus (\$)</b>	<b>Option Awards (\$)(1)</b>	<b>Stock Awards (\$)(1)</b>	<b>All Other Compensation</b>	<b>Total (\$)</b>
Leonard A. Rosenbaum President and Chief Executive Officer	2019	310,000	-	-	-	11,923(2)	321,923
	2018	314,008	-	-	21,912	11,923(2)	347,843
Thomas McNeill (3) Secretary and Chief Financial Officer	2019	184,154	-	-	41,500	-	225,654
	2018	-	-	-	-	-	-
Martin J. Teitelbaum General Counsel and Assistant Secretary	2019	269,231	-	-	-	-	269,231
	2018	277,170	-	-	21,912	-	299,082

- (1) Amounts shown do not reflect compensation actually received by the named executive officer. Instead, the amounts shown reflect the total remaining compensation on restricted stock and option awards granted, that have not previously been shown, as determined pursuant to ASC 718. The assumptions used to calculate the value of stock and option awards are set forth under Note 11 of the Notes to Consolidated Financial Statements. This column represents the grant date fair value of the awards as calculated in accordance with FASB ASC 718 (Stock Compensation). Pursuant to SEC rule changes effective February 28, 2010, we are required to reflect the total grant date fair values of the option grants in the year of grant, rather than the portion of this amount that was recognized for financial statement reporting purposes in a given fiscal year which was required under the prior SEC rules, resulting in a change to the amounts reported in prior Annual Reports, which was valued utilizing the grant date fair value in the year granted.
- (2) Represents payment for accrued and unused vacation time.
- (3) Effective March 4, 2019, Thomas McNeill was appointed CFO, Secretary and Treasurer.

**Employment Agreements and Potential Payments Upon Termination or Change in Control**

There are no arrangements for compensation of directors and there are no employment contracts between the company and its directors or any change in control arrangements.

## Outstanding Equity Awards at December 31, 2019

The following table sets forth the outstanding equity awards held by our named executive officers as of December 31, 2019.

Name	OPTION AWARDS				STOCK AWARDS		Equity Incentive Plan Awards: Market or payout value of unearned shares or units that have not vested
	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	
Leonard A. Rosenbaum	-						800 (1) \$ 2,576
Thomas McNeill (3)	-						10,000 (2) \$ 32,200
Martin J. Teitelbaum	5,310		\$ 4.25	1/15/2020			800 (1) \$ 2,576
	1,400		\$ 7.90	1/15/2021			

(1) Restricted stock units vest as to 800 shares on October 1, 2020.

(2) Restricted stock units vest as to 2,500 shares respectively on March 4, 2020 and 2021 and 5,000 shares on March 4, 2022.

(3) Effective March 4, 2019, Thomas McNeill was appointed CFO, Secretary and Treasurer.

## 2019 Director Compensation

The following table sets forth a summary of the compensation we paid to our non-employee directors in 2019.

Name	Fees Earned or Paid in Cash	Option Awards (1)	Restricted Stock Awards (1)	Total
Conrad J. Gunther	\$ 22,000	22,188	\$ 33,516	\$ 77,704
Lawrence J. Waldman	60,000	22,188	45,486	127,674
Raymond A. Nielsen	22,000	22,188	33,516	77,704
Dr. Robert Brill (2)	24,000	-	27,232	51,232

(1) Amounts shown do not necessarily reflect compensation actually received by the named director. Instead, the amounts shown are the compensation costs recognized by CVD in fiscal 2019 for awards as determined pursuant to ASC 718. The assumptions used to calculate the value of option awards are set forth under Note 11 of the Notes to Consolidated Financial Statements.

(2) On August 22, 2019, Robert Brill, a director of CVD Equipment Corporation (the "Company"), notified the Company that he will be retiring as a director of the Company for personal reasons when his term expires at the next annual meeting of the shareholders of the Company, which was held on October 29, 2019.

On May 9, 2016, the Board of Directors adopted a Director Compensation Plan for all non-employee directors, which retroactively from January 1, 2016, provided for annual compensation of approximately fifty thousand dollars (\$50,000) to each non-employee director in a combination of 40% cash and 60% stock grant.

On December 14, 2018, the Board of Directors approved a new Director Compensation Plan for all non-employee directors which is effective January 1, 2019 and provides for additional compensation to Committee Chairs as well as for the Independent Lead Director. The independent Lead Director receives \$30,000 in cash, the Audit Chairman receives \$25,000 in combination of cash and stock grants, and the other Committee Chairs receive amounts ranging from \$5,000-\$10,000 in a combination of cash and stock grants.

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

The following table sets forth, as of March 24, 2020, 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 24, 2020.

Name and Address of Beneficial Owner (1)	Amounts and Nature of Beneficial Ownership (2)	Percent of Class (%)
Leonard A. Rosenbaum	831,368 (3)	12.6
Martin J. Teitelbaum	78,107 (4)	1.2
Conrad J. Gunther	83,488 (5)	1.3
Lawrence J. Waldman	33,200 (6)	*
Raymond A. Nielsen	30,200 (7)	*
Thomas McNeill	2,500 (8)	*
Steven Aragon	104,192 (9)	1.6
Karlheinz Strobl	122,721 (10)	1.9
Kevin R. Collins	90,860 (11)	1.4
Max Shatalov	- (12)	*
Emmanuel Lakios	68,098 (13)	1.0
All directors and executive officers and executive employees as a group (eleven) persons)	<u>1,444,734</u>	<u>21.8</u>

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

- (1) The address of Messrs. Rosenbaum, Teitelbaum, Gunther, Waldman, Nielsen, McNeill, Strobl, Aragon Shatalov and Lakios 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.
- (2) All of such shares are owned directly with sole voting and investment power, unless otherwise noted below.
- (3) Does not include 800 shares of unvested restricted stock units.

- (4) Includes 2,000 shares held by Mr. Teitelbaum's wife as to which beneficial ownership thereof is disclaimed by Mr. Teitelbaum. Does not include 800 shares of unvested restricted common stock units.
- (5) Does not include 9,000 shares of unvested restricted common stock.
- (6) Does not include 12,200 shares of unvested restricted common stock.
- (7) Does not include 9,000 shares of unvested restricted common stock.
- (8) Does not include 7,500 shares of unvested restricted common stock.
- (9) Does not include 800 shares of unvested restricted common stock units.
- (10) Does not include 800 shares of unvested restricted common stock units.
- (11) Does not include 800 shares of unvested restricted common stock units.
- (12) Does not include unvested options to purchase 20,000 shares of our common stock.
- (13) Does not include unvested options to purchase 40,000 shares of our common stock. Does not include 600 shares of unvested restricted common stock units.

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 Leonard A. Rosenbaum, Martin J. Teitelbaum, Conrad J. Gunther, Lawrence J. Waldman and Raymond A. Nielsen. Messrs. Gunther, Waldman and Nielsen have been determined to be "independent" as defined under Rule 4200 of the Nasdaq Stock Market.

**Item 14. Principal Accountant Fees and Services.**

Effective September 20, 2019, the Company authorized the engagement of Marcum, LLP, Certified Public Accountants ("Marcum") to serve as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2019. Marcum also performed the review of the Company's interim quarterly period ending September 30, 2019. Previously MSPC, Certified Public Accountants and Advisors ("MSPC") were the Company's independent registered public accounting firm. The following presents fees for professional audit services rendered by Marcum, for the year ended December 31, 2019, and MSPC, for the year ended December 31, 2018.

	<u>2019</u>	<u>2018</u>
Audit Fees	\$ 145,500	\$ 161,511
Audit-Related Fees	10,000	5,000
All Other Fees	-	-
Total Fees	<u>\$ 155,500</u>	<u>\$ 166,511</u>

**Audit-Fees**

Audit fees for 2019 consisted of the review of the first and second quarters of 2019 by MSPC and the review of the third quarter and audit of the year-end by Marcum.

**Audit -related Fees**

Consisted of the audit of the Company's Defined Contribution Plan 401(k) by MSPC.

**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 Exhibit 3.1 to our Form S-1 filed on July 3, 2007.](#)
- 3.2 [Certificate of Amendment dated April 25, 1985 of Certificate of Corporation incorporated herein by reference to Exhibit 3.1 to our Form S-1 filed on July 3, 2007.](#)
- 3.3 [Certificate of Amendment dated August 12, 1985 of Certificate of Corporation incorporated herein by reference to Exhibit 3.1 to our 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 to Exhibit 3.1 on our Current Report on Form 8-K filed on December 14, 2016.](#)
- 3.5 [Bylaws of CVD Equipment Corporation, incorporated herein by reference to Exhibit 3.2 to our Form S-1 filed on July 3, 2007.](#)
- 3.6 [Amended and restated By-laws of CVD Equipment Corporation, dated as of October 5, 2016, incorporated herein by reference to Exhibit 3.5 to our Current Report on Form 8-K filed on October 11, 2016.](#)
- 4.1\*\* [Description of the Company's Securities](#)
- 10.1 [CVD Equipment Corporation 2001 Stock Option Plan incorporated herein by reference to Exhibit 3.1 to our Form S-1 filed on July 3, 2007.\\*](#)
- 10.2 [Form of Non-Qualified Stock Option Agreement incorporated herein by reference to Exhibit 3.1 to our Form 10-KSB filed on March 26, 2007.\\*](#)
- 10.3 [CVD Equipment Corporation 2007 Share Incentive Plan incorporated herein by reference to our Schedule 14A filed 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 [Qualified Exchange Accommodation 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.](#)
- 10.7 [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.](#)

- 10.8 [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.](#)
- 10.9 [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](#)
- 10.10 [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.](#)
- 10.11 [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.](#)
- 10.12 [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.](#)
- 10.13 [Agreement of Purchase and sale dated October 24, 2017, by and between the Company and Creative Bath Products, Inc., incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.14 [Asset Purchase Agreement, dated October 31, 2017, by and between MesoScribe Technologies, Inc. and CVD MesoScribe Technologies Corporation, incorporated by reference from the Company's Current Report on Form 8-K filed on November 6, 2017.](#)
- 10.15 [ADA and Environmental Indemnity Agreement by 555 N Research Corporation and CVD Equipment Corporation dated November 30, 2017, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.16 [Assignment of Leases and Rents dated November 30, 2017 by and between 555 N Research Corporation and HSBC Bank USA, National Association, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.17 [Unlimited Guaranty between CVD Equipment Corporation and HSBC Bank USA, National Association dated November 30, 2017, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.18 [Town of Islip Industrial Development Agency and CVD Equipment Corporation, Agency Compliance Agreement dated as of November 1, 2017, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.19 [Town of Islip Industrial Development Agency and CVD Equipment Corporation Amended and Restated Agency Compliance Agreement dated November 30, 2017, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)

- 10.20 [Fee and Leasehold Mortgage and Security Agreement from town of Islip Industrial Development Agency and 555 N Research Corporation to HSBC Bank USA, national Association, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.21 [Town of Islip Industrial Development Agency and FAE Holdings 411519R, LLC Amended and Restated Lease and Project Agreement dated as of November 1, 2017, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.22 [Amended and Restated Note by and between 555 N Research Corporation and HSBC Bank USA, National Association, incorporated by reference to the Company's Annual Report on Form 10-K filed with Commission on April 2, 2018.](#)
- 10.23 [Mortgage Modification Agreement, dated as of August 5, 2019, by and between 555 N Research 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.](#)
- 10.24 [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.](#)
- 10.25 [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.](#)
- 10.26 [West side sublease, dated May 31, 2019, by and between the Company and ELM Freight Handlers Inc., incorporated by reference to the Company's Quarterly Report on Form 10-Q filed with the Commission on August 13, 2019.](#)
- 10.27 [East side sublease, dated May 31, 2019, by and between the Company and ELM Freight Handlers Inc., incorporated by reference to the Company's Quarterly Report on Form 10-Q filed with the Commission on August 13, 2019.](#)
- 16.1 [Letter from MSPC, Certified Public Accountants and Advisors, A Professional Corporation, dated September 23, 2019, incorporated by reference to the Company's Current Report on Form 8-K filed with the Commission on September 23, 2019.](#)
- 21.1\*\* [List of Subsidiaries.](#)
- 23.1 [\\*\\*Consent of MARCUM, Certified Public Accountants and Advisors, A Professional Corporation \(S-8\).](#)
- 23.2 [\\*\\*Consent of MSPC, 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\*\*\* XBRL Instance

101.SCH\*\*\* XBRL Taxonomy Extension Schema

101.CAL\*\*\* XBRL Taxonomy Extension Calculation

101.DEF\*\*\* XBRL Taxonomy Extension Definition

101.LAB\*\*\* XBRL Taxonomy Extension Labels

101.PRE\*\*\* XBRL Taxonomy Extension Presentation

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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 30, 2020  
CVD EQUIPMENT CORPORATION

By: /s/ Leonard A. Rosenbaum  
Name: Leonard A. Rosenbaum  
Title: President and Chief Executive Officer

By: /s/ Thomas McNeill  
Name: Thomas McNeill  
Title: 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.

<u>NAME</u>	<u>POSITION</u>	<u>DATE</u>
<u>/s/ Leonard A. Rosenbaum</u> Leonard A. Rosenbaum	President, Chief Executive Officer and Director (Principal Executive Officer)	3/30/2020
<u>/s/ Martin J. Teitelbaum</u> Martin J. Teitelbaum	Director, General Counsel and Assistant Secretary	3/30/2020
<u>/s/ Conrad J. Gunther</u> Conrad J. Gunther	Director	3/30/2020
<u>/s/ Lawrence J. Waldman</u> Lawrence J. Waldman	Director	3/30/2020
<u>/s/ Raymond A. Nielsen</u> Raymond A. Nielsen	Director	3/30/2020

**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 and Subsidiaries

### Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of CVD Equipment Corporation and Subsidiaries (the "Company") as of December 31, 2019, the related consolidated statements of operations, changes in stockholders' equity and cash flows for the year ended December 31, 2019, 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, 2019, and the results of its operations and its cash flows for the year ended December 31, 2019, 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 audit. 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the 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 audit 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 audit 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 audit 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 audit provides a reasonable basis for our opinion.

/s/ Marcum LLP

Marcum LLP

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

Melville, NY  
March 30, 2020

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

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

***Opinion on the Consolidated Financial Statements***

We have audited the accompanying consolidated balance sheet of CVD Equipment Corporation and Subsidiaries (the "Company") as of December 31, 2018, and the related consolidated statements of operations, changes in stockholders' equity, and cash flows for the year ended December 31, 2018, and the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of CVD Equipment Corporation and Subsidiaries as of December 31, 2018, and the results of their operations and their cash flows for the year ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

***Basis for Opinion***

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. 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 audit 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 consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit 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 audit of the consolidated financial statements 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 consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

**MSPC**  
Certified Public Accountants and Advisors,  
A Professional Corporation

We began serving as the Company's auditor in 2004. In 2019, we became the predecessor auditor.

New York, New York  
April 1, 2019

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**Consolidated Balance Sheets**  
**As of December 31, 2019 and 2018**

	<b>2019</b>	<b>Revised 2018</b>
<b>ASSETS</b>		
Current Assets		
Cash and cash equivalents	\$ 8,664,253	\$ 11,439,361
Accounts receivable, net	2,545,537	4,065,220
Contract assets	512,952	1,357,797
Inventories	1,709,713	1,861,873
Other current assets	733,337	723,204
<b>Total Current Assets</b>	<b>14,165,792</b>	<b>19,447,455</b>
Property, plant and equipment, net	32,102,335	30,402,558
Deferred income taxes	-	1,425,414
Other assets	13,748	64,583
Intangible assets, net	441,177	495,552
<b>Total Assets</b>	<b>\$ 46,723,052</b>	<b>\$ 51,835,562</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current Liabilities		
Accounts payable	\$ 535,394	\$ 713,194
Accrued expenses	1,902,858	1,503,309
Current maturities of long-term debt	674,593	857,590
Contract liabilities	845,653	536,524
Deferred revenue	1,429,583	459,899
<b>Total Current Liabilities</b>	<b>5,388,081</b>	<b>4,070,516</b>
Long-term debt, net of current portion	11,377,126	12,051,720
<b>Total Liabilities</b>	<b>16,765,207</b>	<b>16,122,236</b>
Commitments and contingencies (see Note 13)		
Stockholders' Equity:		
Common stock - \$0.01 par value – 20,000,000 shares authorized; issued and outstanding 6,623,793 at December 31, 2019 and 6,535,888 at December 31, 2018	66,237	65,358
Additional paid-in capital	26,719,554	26,148,256
Retained earnings	3,172,054	9,499,712
<b>Total Stockholders' Equity</b>	<b>29,957,845</b>	<b>35,713,326</b>
<b>Total Liabilities and Stockholders' Equity</b>	<b>\$ 46,723,052</b>	<b>\$ 51,835,562</b>

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, 2019 and 2018**

	<u>2019</u>	<u>2018</u>
Revenue	\$ 19,646,652	\$ 24,334,331
Cost of revenue	16,850,077	19,156,201
Gross profit	2,796,575	5,178,130
Operating expenses		
Research and development	597,456	606,618
Selling and shipping	898,338	1,620,089
General and administrative	6,285,496	8,205,942
Total operating expenses	7,781,290	10,432,649
Operating loss	(4,984,715)	(5,254,519)
Other income (expense):		
Interest income	142,579	159,953
Interest expense	(482,844)	(463,017)
Other Income	411,230	-
Total other income (expense), net	70,965	(303,064)
Loss before income tax	(4,913,750)	(5,557,583)
Income tax expense (benefit)	1,413,908	(356,562)
Net loss	\$ (6,327,658)	\$ (5,201,021)
Basic loss per common share	\$ (0.96)	\$ (0.80)
Diluted loss per common share	\$ (0.96)	\$ (0.80)
Weighted average common shares		
Outstanding-basic	6,562,141	6,495,597
Weighted average common shares		
Outstanding-diluted	6,562,141	6,495,597

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

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**Consolidated Statements of Changes in Stockholders' Equity**

	<u>Common stock</u>		<u>Additional paid-in Capital</u>	<u>Retained Earnings</u>	<u>Total</u>
	<u>Shares</u>	<u>Par Value</u>			
Balance at January 1, 2018, revised	6,458,714	\$ 64,587	\$ 25,209,316	\$ 14,700,733	39,974,636
Net loss	-	-	-	(5,201,021)	(5,201,021)
Share-Based Compensation	77,174	771	938,940	-	939,711
Balance at December 31, 2018, revised	6,535,888	\$ 65,358	\$ 26,148,256	\$ 9,499,712	\$ 35,713,326
Net loss	-	-	-	(6,327,658)	(6,327,658)
Share-Based Compensation	87,905	879	571,298	-	572,177
Balance at December 31, 2019	<u>6,623,793</u>	<u>\$ 66,237</u>	<u>\$ 26,719,554</u>	<u>\$ 3,172,054</u>	<u>\$ 29,957,845</u>

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, 2019 and 2018**

	<u>2019</u>	<u>2018</u>
<b>Cash flows from operating activities:</b>		
Net loss	\$ (6,327,658)	\$ (5,201,021)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities		
Stock-based compensation	572,177	939,711
Depreciation and amortization	1,042,829	1,141,161
Deferred income tax expense / (benefit)	1,425,414	(495,228)
Recovery of contingent earnout	(200,000)	-
(Increase)/decrease in operating assets		
Accounts receivable	1,519,683	(2,006,603)
Contract assets	844,846	7,039,227
Inventories	152,160	1,103,750
Other assets	125,056	(552,515)
Increase/(decrease) in operating liabilities		
Accounts payable	(177,801)	(461,774)
Accrued expenses	315,195	(1,235,064)
Contract liabilities	309,129	70,211
Deferred revenue	969,684	167,946
Total adjustments	<u>6,898,372</u>	<u>5,710,822</u>
Net cash provided by operating activities	<u>570,714</u>	<u>509,801</u>
<b>Cash flows from investing activities:</b>		
Capital expenditures	(2,688,231)	(2,537,652)
Net cash used in investing activities	<u>(2,688,231)</u>	<u>(2,537,652)</u>
<b>Cash flows from financing activities:</b>		
Payments of long-term debt	(657,591)	(743,697)
Net cash used in financing activities	<u>(657,591)</u>	<u>(743,697)</u>
Net decrease in cash and cash equivalents	(2,775,108)	(2,771,548)
Cash and cash equivalents at beginning of year	11,439,361	14,210,909
Cash and cash equivalents at end of year	<u>\$ 8,664,253</u>	<u>\$ 11,439,361</u>
<b>Supplemental disclosure of cash flow information:</b>		
Income taxes paid	\$ 2,800	\$ 472,542
Interest paid	\$ 365,254	\$ 463,850
<b>Supplemental disclosure of non-cash investing and financing activities:</b>		
Capitalization of right to use Asset and related lease liability	<u>\$ 84,354</u>	<u>\$ -</u>

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

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
December 31, 2019 and 2018

**Note 1 – Business Description**

CVD Equipment Corporation and its subsidiaries (the "Company"), a New York corporation, was organized and commenced operations in October 1982. Its principal business activities include the manufacturing of chemical vapor deposition equipment, customized gas control systems, the manufacturing of process equipment suitable for the synthesis of a variety of one-dimensional nanostructures and nanomaterials and a line of furnaces, all of which are used primarily to produce semiconductors and other electronic components. The Company engages in business throughout the United States and internationally.

**Note 2 - Summary of Significant Accounting Policies**

Principles of Consolidation

The consolidated financial statements include the accounts of CVD Equipment Corporation and its wholly owned subsidiaries. The Company has five wholly owned subsidiaries: CVD Materials Corporation, which provides material coatings, process development support and process startup assistance through Tantaline ApS and CVD MesoScribe Technologies Corporation, FAE Holdings 411519R, LLC, a real estate holding company whose sole asset is its interest in the real estate and building housing our corporate headquarters and 555 N Research Corporation whose sole asset is its interest in the real estate and building located at 555 North Research Place, Central Islip, NY. All significant intercompany accounts and transactions have been eliminated in consolidation.

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, depreciation and amortization, valuation of inventories at the lower of cost or net realizable value; allowance for doubtful accounts receivable; valuation allowances for deferred tax assets, impairment considerations of long-lived assets and valuation of stock-based compensation.

**Note 2 - Summary of Significant Accounting Policies (continued)**

Revenue Recognition

The Company designs, manufactures and sells custom chemical vapor deposition equipment through contractual agreements. These system sales require the Company to deliver functioning equipment that is generally completed within three to eighteen months from commencement of order acceptance. The Company recognizes revenue over time by using an input method based on costs incurred as it depicts the Company's progress toward satisfaction of the performance obligation. 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, 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.

"Contract assets," include unbilled amounts typically resulting from sales under contracts when revenue recognition is utilized and revenue recognized exceeds the amount billed to the customer. The amount may not exceed their estimated net realizable value. Contract assets are classified as current based on our contract operating cycle.

"Contract liabilities," include advance payments and billings in excess of revenue recognized. Contract liabilities are classified as current based on our contract operating cycle and reported on a contract-by-contract basis, net of revenue recognized, at the end of each reporting period.

For outright sales of products, revenue is recognized when control of the promised products or services is transferred to our customers, in an amount that reflects the consideration we expect 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.

Investment tax credits are accounted for by the flow-through method, reducing income taxes currently payable and the provision for income taxes in the period the assets giving rise to such credits are placed in service. To the extent such credits are not currently utilized on the Company's tax return, deferred tax assets, subject to considerations about the need for a valuation allowance, are recognized for the carryforward amount.

The Company recognizes the tax benefit from an uncertain tax position only if it is more-likely-than-not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement.

The accounting guidance on accounting for uncertainty in income taxes also addresses derecognition, classification, interest and penalties on income taxes, and accounting in interim periods. The Company does not believe it has any uncertain tax positions through the year ending December 31, 2019 which would have a material impact on the Company's consolidated financial statements.

The Company and its subsidiaries file combined income tax returns in the U.S. Federal and New York State jurisdiction. In addition, the parent company files standalone tax returns in California, Delaware, Florida, Michigan, Minnesota, New Hampshire and Wisconsin. The Company is no longer subject to U.S. federal and state income tax examinations for tax periods before 2015.

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 Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("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. The Company had no recorded impairment charges in the consolidated statement of operations during each of the years ended December 31, 2019 and 2018.

**Note 2 - Summary of Significant Accounting Policies (continued)**

Computer Software

The Company follows ASC 350-40, "Internal Use Software." This standard requires certain direct development costs associated with internal-use software to be capitalized including external direct costs of material and services and payroll costs for employees devoting time to the software projects. There were no costs incurred during the year ended December 31, 2019 and December 31, 2018 that were included in Property, Plant and Equipment. All computer software is amortized using the straight-line method over its estimated useful life of three to five years. Amortization expense related to computer software totaled \$142,480 and \$144,500 for the years ended December 31, 2019 and 2018, respectively.

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 in Operating Expenses-General and Administrative.

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. Amortization expense recorded by the Company in 2019 and 2018 totaled \$120,488 and \$115,800, respectively.

Research & Development

Research and development costs are expensed as incurred. Our laboratory staff conducts research and development independent of customer orders. In 2019, we incurred approximately \$598,000 of research and development expenses as compared to \$607,000 in 2018.

Product Warranty

The Company records warranty costs as incurred and does not provide for possible future costs. Management estimates such costs are immaterial, based on historical experience.

**Note 2 - Summary of Significant Accounting Policies (continued)**

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 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.

Cash and Cash Equivalents

The Company had cash and cash equivalents of \$8.7 million and \$11.4 million at December 31, 2019 and 2018, respectively. The Company invests excess cash in treasury bills, certificates of deposit or money market accounts, all with maturities of less than three months. Cash equivalents were \$2.1 million and \$7.5 million for the years ended December 31, 2019 and December 31, 2018, 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 at risk at December 31, 2019 and at December 31, 2018 was \$5,198,000 and \$6,920,000 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 money market instruments. The Company has established guidelines relative to credit ratings and maturities that seek to maintain stability and liquidity.

The Company sells products and services to various companies across several industries in the ordinary course of business. The Company routinely assesses the financial strength of its customers and maintains allowances for anticipated losses based upon historical experience.

Accounts Receivable

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, 2019 and 2018, the accounts receivable balance includes amounts from three customers, which total 61% and two customers which total 42%, respectively.

**Note 2 - Summary of Significant Accounting Policies (continued)**

Accounts receivable is presented net of an allowance for doubtful accounts of \$24,000 as of December 31, 2019 and 2018, 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 doesn't require collateral from its customers.

Sales Concentrations

Revenue to a single customer in any one year can exceed 10.0% of our total sales. Two customers represented 39.3% and one customer represented 38.2%, respectively, of our annual revenues in fiscal years 2019 and 2018. We believe that our relationships with these customers are positive and may provide us with ongoing continuous sustainability for years to come, however the loss of a large 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.

Export sales to customers represented approximately 21.3% and 9.9% of sales for the years ended December 31, 2019 and 2018, respectively. Export sales in both 2019 and 2018 were primarily to customers in Europe and Asia. All contracts except those entered into by CVD Tantaline ApS are denominated in U.S. dollars. The Company does not enter into any foreign exchange contracts.

Fair Value of Financial Instruments

The carrying amounts of financial instruments including cash and cash equivalents, accounts receivable, net, accounts payable, deferred revenue and customer deposits 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.

**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 \$39,000 and \$61,200 for the years ended December 31, 2019 and 2018, respectively.

Recently Adopted Accounting Standards

In June 2016, the FASB issued Accounting Standard Update ("ASU") 2016-13, *Financial Instruments – Credit Losses (Topic 326)*, which require that financial assets measured at amortized cost be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial asset to present the net carrying value at the amount expected to be collected. The income statement reflects the measurement of credit losses for newly recognized financial assets, as well as the increase or decreases of expected credit losses that have taken place during the period. The measurement of expected credit losses is based upon historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. 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. Early adoption for fiscal years beginning after December 15, 2018 is permitted. We are currently evaluating the effect of this update on our consolidated financial statements.

In February 2016 the FASB issued ASU No. 2016-02, "Leases (Topic 842)" (ASU 2016-02). The primary difference between previous GAAP and ASU 2016-02 is the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous GAAP. The guidance requires a lessee to recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. When measuring assets and liabilities arising from a lease, a lessee (and a lessor) should include payments to be made in optional periods only if the lessee is reasonably certain to exercise an option to extend the lease or not to exercise an option to terminate the lease. Similarly, optional payments to purchase the underlying asset should be included in the measurement of lease assets and lease liabilities only if the lessee is reasonably certain to exercise that purchase option. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expense for such leases generally on a straight-line basis over the lease term. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018 and the Company adopted ASU 2016-02 January 1, 2019. Lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The modified retrospective approach includes a number of optional practical expedients that entities may elect to apply.

**Note 2 - Summary of Significant Accounting Policies (continued)**

An entity that elects to apply the practical expedients will, in effect, continue to account for leases that commence before the effective date in accordance with previous GAAP unless the lease is modified, except that lessees are required to recognize a right-of-use asset and a lease liability for all operating leases at each reporting date based on the present value of the remaining minimum rental payments that were tracked and disclosed under previous GAAP. In addition, FASB has amended Topic 842 prior to it becoming effective. The effective date and transition requirements for these amendments to Topic 842 are the same as ASU 2016-02. The Company has one lease at its Denmark facility which currently expires at December 31, 2020 and has recognized a lease liability and a right-of-use asset effective in 2019 representing its right to use the underlying asset for the lease term in the amount of \$84,000 at December 31, 2019.

We believe 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 – Contracts in Progress**

The following table represents a disaggregation of revenue from contracts for the years ended December 31, 2019 and December 31, 2018:

(In thousands)	<u>2019</u>	<u>2018</u>
<u>Category</u>		
Aerospace	\$ 4,937	\$ 8,115
Industrial	4,933	7,043
Research	3,114	4,114
Point in time	6,663	5,062
Total revenue	<u>\$ 19,647</u>	<u>\$ 24,334</u>

Contract Assets and Liabilities

Contract assets consist of (i) retainage which represent the earned, but unbilled, portion for which payment is deferred by the customer until certain contractual milestones are met; and (ii) unbilled receivables which represent revenue that has been recognized in advance of billing the customer, which is common for long-term contracts. Contract liabilities consist of customer advances and billings in excess of revenue recognized.

For the year ended December 31, 2019, the decrease in contract assets of approximately \$.8 million was primarily driven by additional billed receivables during the period, for those projects that certain milestones had been reached. During the year ended December 31, 2019, the increase in contract liabilities of \$.3 million was primarily due to invoicing for those projects.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
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**Note 3 – Contracts in Progress (continued)**

Contract assets and contract liabilities on input method type contracts in progress are summarized as follows:

	2019	2018
Costs incurred on contracts in progress	\$ 6,943,067	\$ 24,913,254
Estimated earnings	3,370,032	26,040,219
	10,313,099	50,953,473
Billings to date	(10,645,800)	(50,132,200)
	<u>\$ (332,701)</u>	<u>\$ 821,273</u>
Included in accompanying balance sheets		
Under the following captions:		
Contract assets	\$ 512,952	\$ 1,357,797
Contract liabilities	<u>\$ (845,653)</u>	<u>\$ (536,524)</u>

The Company has unrecognized contract revenue of approximately \$3.6 million at December 31, 2019, which it expects to recognize as revenue within the next twelve months.

**Note 4 - Inventories**

Inventories consist of:

	2019	2018
Raw materials	\$ 1,281,250	\$ 1,656,488
Work-in-process	428,463	205,385
Inventories	<u>\$ 1,709,713</u>	<u>\$ 1,861,873</u>

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
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**Note 5 – Property, Plant and Equipment**

Major classes of property, plant and equipment consist of the following:

	<u>2019</u>	<u>2018</u>
Land	\$ 6,929,000	\$ 6,929,000
Buildings	15,917,000	15,920,925
Building improvements	7,864,757	6,603,121
Machinery and equipment	3,592,351	3,385,357
Furniture and fixtures	613,765	611,190
Computer equipment	487,902	487,007
Software	438,391	441,376
Transportation equipment	114,511	65,995
Lab equipment	1,985,179	1,985,179
Construction in Progress	2,110,875	946,960
Totals at cost	<u>\$ 40,053,731</u>	<u>\$ 37,376,110</u>
Less: Accumulated depreciation and amortization	<u>(7,951,396)</u>	<u>(6,973,552)</u>
Property, plant and equipment, net	<u>\$ 32,102,335</u>	<u>\$ 30,402,558</u>
Depreciation and amortization expense (1)	<u>\$ 1,042,829</u>	<u>\$ 1,141,161</u>

(1) Includes amortization expense of \$120,488 and \$115,800 for the year ending December 31, 2019 and the year ended December 31, 2018, respectively. Such amortization expense relates to other capitalized and intangibles assets.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
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**Note 6 – Intangible Assets**

Intangible assets consisted of the following:

**2019**

<b>Intangible Assets</b>	<b>Cost</b>	<b>Accumulated Amortization</b>	<b>Carrying Amount</b>
Patents, Copyrights and Intellectual Property	\$ 836,544	\$ 413,957	\$ 422,587
Licensing Agreement	10,000	10,000	0
Certifications	83,272	64,682	18,590
Totals	<u>\$ 929,816</u>	<u>\$ 488,639</u>	<u>\$ 441,177</u>

**2018**

<b>Intangible Assets</b>	<b>Cost</b>	<b>Accumulated Amortization</b>	<b>Carrying Amount</b>
Patents, Copyrights and Intellectual Property	\$ 796,080	\$ 300,528	\$ 495,552
Licensing Agreement	10,000	10,000	0
Certifications	58,486	58,486	0
Totals	<u>\$ 864,566</u>	<u>\$ 369,014</u>	<u>\$ 495,552</u>

The estimated amortization expense related to intangible assets for each of the five succeeding fiscal years and thereafter as of December 31, 2019 is as follows:

<u>Year Ended</u>		
2020	\$	126,958
2021		126,958
2022		53,469
2023		53,469
2024		46,387
Thereafter		33,936
Total	<u>\$</u>	<u>441,177</u>

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
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**Note 7 – Long-term Debt**

Long-term debt as of December 31 consists of the following:

	<b>2019</b>	<b>2018</b>
HSBC \$10,387,500 Mortgage payable secured by real property Buildings and improvements at 555 N Research Drive, Central Islip, NY payable in monthly principle installments of \$62,481 including Interest at a rate of 3.9148% maturing on December 1, 2022.	\$ 9,686,211	\$ 10,043,802
MesoScribe Technologies, Inc. \$300,000 acquisition related contingent payment (1)	-	200,000
HSBC \$6,000,000 Mortgage payable secured by building Buildings and improvements at 355 South Technology Drive, Central Islip, NY payable in monthly principle installments of \$25,000 plus interest. Interest presently accrues at our option, at the variable rate of LIBOR plus 1.75% or HSBC's Prime rate minus 0.50% The loan matures on March 1, 2022.	2,365,508	2,665,508
Total long-term debt	\$ 12,051,719	\$ 12,909,310
Less: Current maturities	(674,593)	(857,590)
Long-term debt	\$ 11,377,126	\$ 12,051,720

(1) For the twelve-month measurement periods December 31, 2019 and 2018, the Company did not meet the threshold required and \$200,000 and \$100,000, respectively, of contingent payments was recorded into earnings.

Future maturities of long-term debt as of December 31, 2019 are as follows:

2020	\$ 674,593
2021	690,813
2022	10,686,313
Total long-term debt	\$ 12,051,719

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS  
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**Note 7 – Long-term Debt (continued)**

The Company has a loan agreement with HSBC which is secured by a mortgage against our Central Islip, NY Headquarters. The loan is payable in 120 consecutive equal monthly installments of \$25,000 in principal plus interest and a final balloon payment upon maturity in March 2022. The balances as of December 31, 2019 and December 31, 2018 were approximately \$2.4 million and \$2.7 million respectively. Interest accrues on the Loan, at our option, at the variable rate of LIBOR plus 1.75% or Prime less 0.5% (3.49% and 2.18% at December 31, 2019 and 2018, respectively).

On November 30, 2017, the Company purchased the premises located at 555 North Research Place, Central Islip, NY. The purchase price of the building was \$13,850,000 exclusive of closing costs. The Company's newly formed wholly-owned subsidiary, 555 N Research Corporation (the "Assignee") and the Islip IDA, entered into a Fee and Leasehold Mortgage and Security Agreement (the "Loan") with HSBC in the amount of \$10,387,500, which was used to finance a portion of the purchase price to acquire the premises located at 555 North Research Place, Central Islip, New York. The Loan was evidenced by the certain Note, dated November 30, 2017 (the "Note"), by and between Assignee and the Bank, and secured by a certain Fee and Leasehold Mortgage and Security Agreement (the "Mortgage"), dated November 30, 2017, as well as a collateral Assignment of Leases and Rents.

The Note is payable in 60 consecutive equal monthly installments of \$62,481 including interest and a final balloon payment upon maturity in December 2022. The balance outstanding as of December 31, 2019 and December 31, 2018 were approximately \$9.7 million and \$10.0 million respectively. The Note bears interest for each Interest Period (as defined in the Note), at the fixed rate of 3.9148%. As a condition of the Bank making the Loan, the Company was required to guaranty Assignee's obligations under the Loan pursuant that certain Unlimited Guaranty, dated November 30, 2017 (the "Guaranty"). On May 31, 2019, the Company entered into two sublease agreements for a portion of the CVD Materials facility. During the year ended December 31, 2019, the Company recognized \$411,000 of rental income which commenced in June 2019. Commencing July 2019, the monthly rental income increased from \$36,000 to approximately \$67,000 per month, which includes both of the sublease agreements (eastside and westside), or approximately \$800,000 per annum. On October 30, 2019, the Tenant exercised its option to terminate the eastside Lease, which termination will be effective as of December 31, 2019 (the "Termination"). The Lease was for a one-year term ending on June 30, 2020, and provided for an initial base monthly rent of \$31,667 per month (\$380,000 per annum).

At December 31, 2018, the Company was not in compliance with the one financial covenant (fixed charge coverage ratio) contained in the Mortgage. On March 26, 2019 the Company received a waiver from HSBC until April 1, 2020. On August 5, 2019, the Company entered into a Mortgage Modification Agreement which replaced the former covenant with a Minimum Liquid Assets covenant. The Company is in compliance with its financial covenant under the mortgage at December 31, 2019.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
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**Note 8 – Earnings per Share**

The calculation of basic and diluted weighted average common shares outstanding is as follows:

	2019	2018
Weighted average common shares outstanding basic earnings per share	6,562,141	6,495,597
Effect of potential common share issuance:		
Stock options	-	-
<b>Weighted average common shares outstanding</b>		
Diluted earnings per share	6,562,141	6,495,597

At December 31, 2019, stock options to purchase 432,930 shares of common stock were outstanding and 307,930 were exercisable. Stock options to purchase 407,930 shares of common stock were outstanding and 257,930 were exercisable at December 31, 2018. At December 31, 2019 and 2018, respectively, 307,930 and 257,930, stock options were not included in the computation of diluted earnings per share because their effect was antidilutive.

**Note 9 – Income Taxes**

At December 31, 2019, the Company had approximately \$588,000 of federal research and development tax credits. If not utilized, the research and development tax credits expire from 2034-2039. For the year ended December 31, 2019, the Company has provided a full valuation allowance against all of the net deferred tax assets in the amount of \$2,497,414. This was based on management's assessment, including the last two years of operating losses, that it is more likely than not that the net deferred tax assets may not be realized in the future.

The expense/(benefit) for income taxes includes the following:

	2019	2018
<b>Current:</b>		
Federal	\$ -	\$ 58,304
State	(11,506)	80,367
Total current tax provision	(11,506)	138,671
<b>Deferred:</b>		
Federal	1,425,414	(495,233)
State	---	---
Total deferred tax provision	1,425,414	(495,233)
<b>Income tax expense / (benefit)</b>	<b>\$ 1,413,908</b>	<b>\$ (356,562)</b>

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
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**Note 9 – Income Taxes (continued)**

The tax effects of temporary differences giving rise to significant portions of the net deferred taxes are as follows:

	<b>2019</b>	<b>Revised 2018</b>
Deferred income tax assets:		
Allowance for doubtful accounts	\$ 5,293	\$ 5,060
Inventory capitalization	7,107	6,197
Depreciation and amortization	-	-
Research & development tax credits	588,096	413,680
Compensation costs	202,287	356,983
Vacation accrual	142,230	167,644
Interest expense carryforward	144,340	66,149
Net operating loss carryforward	1,798,315	832,565
Other items	52,232	16,446
Total deferred tax asset	<u>2,939,900</u>	<u>1,864,724</u>
Deferred incomes tax liability:		
Property and equipment - tax over book depreciation	(442,486)	(439,310)
Less valuation allowance	(2,497,414)	---
Net long-term deferred tax asset	<u>\$ -</u>	<u>\$ 1,425,414</u>

During the Company's review of its deferred tax assets for the year ended December 31, 2019, it was determined that there was an error in the amounts recorded during the years ended December 31, 2018 and prior related to the deferred tax asset for stock-based compensations costs. The effects of this error were determined to be immaterial to any of the years effected. As such, the Company elected to record in this financial statement an adjustment to the prior periods as a revision. As a result of this revision, as of December 31, 2018 the deferred tax asset was reduced by \$679,000 and retained earnings was reduced by \$679,000. For the year ended December 31, 2018 there was no impact to the income tax benefit.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
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**Note 9 – Income Taxes (continued)**

The reconciliation of the federal statutory income tax rate to our effective tax rate is as follows:

	<b>2019</b>	<b>2018</b>
Expected provision at federal statutory tax rate (21%)	\$ (1,031,888)	\$ (1,167,092)
Provision for valuation allowance	2,497,414	-
Foreign tax loss	57,856	99,215
Adjustment to 2017 tax return	-	58,304
State taxes, net of federal benefit	(11,506)	80,367
Stock-based compensation expense	-	185,675
Federal research & development credit	(174,416)	(83,245)
Other permanent differences	76,448	470,214
<b>Income tax expense/(benefit)</b>	<b>\$ 1,413,908</b>	<b>\$ (356,562)</b>

The Company's foreign subsidiary, CVD Tantaline ApS incurred a loss of approximately \$276,000, which would provide a \$61,000 deferred tax asset as of December 31, 2019, based on the standard corporate tax rate of 22% in Denmark. For the year ended December 31, 2018 the Company had a loss of \$463,000 which would provide a \$102,000 deferred tax asset of \$102,000. However, sufficient uncertainty exists as to the realizability of these assets such that a full valuation allowance has been necessary.

**Note 10 – Stockholders’ equity**

2001 Non-Qualified Stock Option Plan

In November 2006, the Company registered a non-qualified stock option plan that the shareholders had approved in July 2001, covering key employees, officers, directors and other persons that may be considered as service providers to the Company. Options were awarded by the Board of Directors or by a committee appointed by the Board. Under the plan, an aggregate of 300,000 shares of Company common stock, \$.01 par value, were reserved for issuance or transfer upon the exercise of options which were granted. Unless otherwise provided in the option agreement, options granted under the plan would vest over a four-year period commencing one year from the anniversary date of the grant. The stock option plan expired on July 22, 2011. As of December 31, 2019 there were 22,930 options outstanding under this plan.

2007 Share Incentive Plan

On December 12, 2007, shareholders approved the Company’s 2007 Share Incentive Plan (“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 Share Incentive Plan through December 12, 2017. The Plan expired in December, 2017. As of December 31, 2019 there were 345,000 options outstanding under this plan.

2016 Share Incentive Plan

On December 9, 2016, shareholders approved the Company’s 2016 Share Incentive Plan (“2016 Incentive Plan”), in connection therewith 750,000 shares of the Company’s common stock are reserved for issuance pursuant to options or restricted stock that may be granted under the 2016 Incentive Plan through December 9, 2026. As of December 31, 2019, there were 65,000 options outstanding under this plan.

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. The Company recorded stock-based compensation of \$572,000 and \$940,000 for the years ended December 31, 2019 and 2018, respectively.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
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**Note 10 – Stockholders’ equity (continued)**

A summary of the stock option activity related to the 2001 Stock Option Plans, the 2007 Share Incentive Plan and the 2016 Share Incentive Plan for the period from January 1, 2018 through December 31, 2019 is as follows:

**2001 Non-Qualified Stock Option Plan**

	Beginning Balance Outstanding	Granted During Period	Exercised During Period	Canceled During Period	Ending Balance Outstanding	Exercisable
<b>Year ended December 31, 2018</b>						
Number of shares	22,930	-	-	-	22,930	22,930
Weighted average exercise price per share	\$ 5.36	-	-	-	\$ 5.36	\$ 5.36
<b>Year ended December 31, 2019</b>						
Number of shares	22,930	-	-	-	22,930	22,930
Weighted average exercise price per share	\$ 5.36	-	-	-	\$ 5.36	\$ 5.36

**2007 Share Incentive Plan**

	Beginning Balance Outstanding	Granted During Period	Exercised During Period	Canceled During Period	Ending Balance Outstanding	Exercisable
<b>Year ended December 31, 2018</b>						
Number of shares	365,000	-	-	-	365,000	235,000
Weighted average exercise price per share	\$ 12.35	-	-	-	\$ 12.35	\$ 13.15
<b>Year ended December 31, 2019</b>						
Number of shares	365,000	-	-	(20,000)	345,000	285,000
Weighted average exercise price per share	\$ 12.35	-	-	\$ 11.61	\$ 12.69	\$ 12.76

**2016 Share Incentive Plan**

	Beginning Balance Outstanding	Granted During Period	Exercised During Period	Canceled During Period	Ending Balance Outstanding	Exercisable
<b>Year ended December 31, 2018</b>						
Number of shares	-	20,000	-	-	20,000	-
Weighted average exercise price per share	-	\$ 8.07	-	-	\$ 8.07	-
<b>Year ended December 31, 2019</b>						
Number of shares	20,000	60,000	-	(15,000)	65,000	-
Weighted average exercise price per share	\$ 8.07	\$ 5.00	-	\$ 5.00	\$ 5.94	-

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
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**Note 10 – Stockholders’ equity (continued)**

The Company has 432,930 of outstanding stock options under the three plans at December 31, 2019.

The following table summarizes information about the outstanding and exercisable options at December 31, 2019.

<u>Options Outstanding</u>					<u>Options Exercisable</u>			
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	60,930	.1	\$ 4.80	\$ 0	15,930	\$ 4.25	\$ 0	
\$7.01 - 10.00	27,000	1	\$ 8.03	\$ 0	7,000	\$ 7.90	\$ 0	
\$10.01 - 12.00	220,000	6.3	\$ 10.81	\$ 0	160,000	\$ 11.05	\$ 0	
\$12.01 - 15.00	125,000	2.5	\$ 15.00	\$ 0	125,000	\$ 15.00	\$ 0	

No options were exercised for the year ended December 31, 2019 and 2018. As of December 31, 2019, there was \$48,000 of unrecognized compensation costs related to stock options expected to be recognized over a weighted average period of 1.24 years

Restricted Stock Awards

The following table summarizes restricted stock awards for the years ended December 31, 2019 and 2018:

	Shares of Restricted Stock	Weighted Average Grant Date Fair Value
Unvested outstanding at December 31, 2017	0	\$ 0
Granted	11,000	\$ 10.53
Vested	(11,000)	\$ 10.53
Forfeited/Cancelled		
Unvested outstanding at December 31, 2018	0	\$ 0
Granted	37,300	\$ 3.99
Vested	(35,025)	\$ 3.99
Forfeited/Cancelled	(2,275)	\$ 3.99
Unvested outstanding at December 31, 2019	0	\$ 0

The total fair value of shares of restricted stock awards vested for the years ended December 31, 2019 and 2018 was approximately \$140,000 and \$116,000 respectively. The fair value of the outstanding restricted stock awards is recorded as stock compensation expense over the vesting period.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS  
December 31, 2019 and 2018

**Note 10 – Stockholders’ equity (continued)**

Restricted Stock Units

The following table summarizes restricted stock units for the years ended December 31, 2019 and December 31, 2018:

	Shares of Restricted Stock Units	Weighted Average Grant Date Fair Value
Unvested outstanding at December 31, 2017	73,870	\$ 10.05
Granted	39,260	\$ 8.75
Vested	(67,067)	\$ 9.26
Forfeited/Cancelled	(-)	\$ --
Unvested outstanding at December 31, 2018	46,063	\$ 8.25
Granted	10,500	\$ 4.15
Vested	(33,988)	\$ 9.08
Forfeited/Cancelled	(-)	\$ --
Unvested outstanding at December 31, 2019	<u>22,575</u>	<u>\$ 4.66</u>

The total fair value of vested restricted stock units was \$309,000 and \$621,000 respectively for the years ended December 31, 2019 and 2018.

The fair value of the outstanding restricted stock units will be recorded as stock compensation expense over the vesting period. As of December 31, 2019, there was \$106,000 of total unrecognized compensation costs related to restricted stock units, which is expected to be recognized over a weighted-average period of 1.21 years.

During the years ended December 31, 2019 and 2018, the Company recorded into selling and general administrative expense approximately \$572,000 and \$940,000 of stock-based compensation expense for the cost of employee and director services received in exchange for equity instruments based on the grant-date fair value of those instruments in accordance with the provisions of ASC 718.

**CVD EQUIPMENT CORPORATION AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
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**Note 11 – 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. No discretionary employer contribution has been made for 2019 and 2018.

**Note 12 – Segment Reporting**

The Company operates through three segments, CVD, SDC and CVD Materials. The CVD segment is utilized for silicon, silicon germanium, silicon carbide and gallium arsenide processes. SDC is the Company's ultra-high purity manufacturing division in Saugerties, New York. The accounting policies of CVD and SDC are the same as those described in the summary of significant accounting policies (see Note 2). The Company evaluates performance based on several factors, of which the primary financial measure is earnings before taxes. Included in the CVD Materials segment are our wholly owned subsidiaries, CVD Tantaline Aps and CVD MesoScribe Technologies Corporation.

The following table presents certain information regarding the Company's segments as of December 31, 2019 and December 31, 2018 and for the years then ended:

<b>2019</b>						
(In thousands)	<b>CVD</b>	<b>SDC</b>	<b>Materials</b>	<b>Corporate</b>	<b>Eliminations *</b>	<b>Consolidated</b>
Assets	\$ 34,374	\$ 6,003	\$ 6,355		\$ (9)	\$ 46,723
Revenue	\$ 14,065	\$ 4,498	\$ 1,786		\$ (702)	\$ 19,647
Operating (loss)/income	(1,811)	696	(537)	(3,333)		(4,985)
Pretax (loss)/income	(1,782)	719	(518)	(3,333)		(4,914)
<b>2018</b>						
(In thousands)	<b>CVD</b>	<b>SDC</b>	<b>Materials</b>	<b>Corporate</b>	<b>Eliminations *</b>	<b>Consolidated</b>
Assets-revised	\$ 39,788	\$ 4,870	\$ 7,187		\$ (9)	\$ 51,836
Revenue	\$ 17,860	\$ 5,503	\$ 1,993		\$ (1,022)	\$ 24,334
Operating (loss)/income	(1,754)	958	(1,295)	(3,164)		(5,255)
Pretax (loss)/income	(1,691)	987	(1,690)	(3,164)		(5,558)

\*All elimination entries represent intersegment transactions eliminated in consolidation for external reporting.

**Note 13 – Subsequent Events**

On November 15, 2019, a complaint was filed against the Company in the United States District Court for the Eastern District of New York by plaintiff O2Cure Ltd. alleging patent infringement by the Company, and seeking injunctive relief against the Company to settle with unspecified damages. On January 29, 2020, O2Cure filed a Notice of Voluntary Dismissal Without Prejudice in the United States District Court for the Eastern District of New York. Accordingly, the claims previously asserted in the Complaint against the Company have been withdrawn and the action is now closed.

In December 2019 an outbreak of a novel strain of coronavirus originated in Wuhan, China, and has since spread to a number of other countries, including the United States. Initially, this outbreak resulted in extended shutdowns of certain businesses in the Wuhan region and had ripple effects to businesses around the world. Most recently this disruption has extended to the United States including complete or partial government shutdowns of many businesses, schools, bars and restaurants, including our Company. We cannot presently predict the scope and severity of the business shutdowns or disruptions to us, but if we or any of the third parties with whom we engage, including our customers, suppliers and other third parties with whom we conduct business, were to experience extended shutdowns or other business disruptions, our ability to conduct our business could be materially and negatively impacted, and could have a material adverse effect on our business and our results of operation and financial condition.

**DESCRIPTION OF THE REGISTRANT'S SECURITIES  
REGISTERED PURSUANT TO SECTION 12 OF THE  
SECURITIES EXCHANGE ACT OF 1934**

*The following description of the common stock of CVD Equipment Corporation (referred to as "the Company", "we", "us" and "our" unless specified otherwise) is based upon relevant provisions of the Company's Certificate of Incorporation, as amended (the "Certificate of Incorporation"), the Company's Amended and Restated Bylaws (the "Bylaws") and applicable provisions of law. We have summarized certain portions of the Certificate of Incorporation and Bylaws below. The summary is not complete and is subject to, and is qualified in its entirety by express reference to, the provisions of our Certificate of Incorporation, which is incorporated herein by reference to Exhibit 3.1 on our Current Report on Form 8-K filed on December 14, 2016, and Bylaws, which is incorporated herein by reference to Exhibit 3.5 to our Current Report on Form 8-K filed on October 11, 2016.*

**Authorized Capital Stock**

The Company's authorized capital stock consists of 20,000,000 shares of common stock, par value \$0.01 per share. All outstanding shares of common stock are fully paid and non-assessable.

**Description of Common Stock**

*Voting Rights.* Holders of shares of common stock are entitled to one vote for each share on all matters to be voted on by the shareholders, and do not have cumulative voting rights. Except as otherwise provided by statute or by the Certificate of Incorporation, any corporate action, other than the election of directors to be taken by vote of the shareholders, shall be authorized by a majority of votes cast at a meeting of shareholders by the holders of shares entitled to vote thereon, while directors shall be elected by a plurality of the votes cast.

*Dividends.* Holders of shares of common stock are entitled to share ratably in dividends, if any, as may be declared from time to time by the Board of Directors in its discretion, from funds legally available therefore.

*Liquidation.* In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to shareholders after the payment of all of our debts and other liabilities.

*Preemptive and Redemption Rights.* Holders of common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption rights with respect to such shares.

## SUBSIDIARIES

CVD Materials Corporation, a New York corporation.  
CVD MesoScribe Technologies Corporation, a New York corporation.  
555 N Research Corporation, a New York Corporation.  
FAE Holdings 411519R, LLC, a New York limited liability company.  
CVD Tantaline ApS, a Danish private limited liability company.

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 30, 2020, with respect to our audit of the consolidated financial statements of CVD Equipment Corporation and Subsidiaries as of December 31, 2019 and for the year ended December 31, 2019, which report is included in this Annual Report on Form 10-K of CVD Equipment Corporation for the year ended December 31, 2019.

/s/ MarcumLLP

Marcum LLP  
Melville, NY  
March 30, 2020

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in Registration Statement (No. 333-138903) on Form S-8, pertaining to the 2001 Stock Option Plan, Registration Statement (No. 333-153186) on Form S-8, pertaining to the 2007 Share Incentive Plan, and in Registration Statement (No. 333-217439) on Form S-8, pertaining to the 2016 Share Incentive Plan of CVD Equipment Corporation and Subsidiaries of our report dated April 1, 2019 relating to our audit of the consolidated financial statements, which appear in the Annual Report on Form 10-K of CVD Equipment Corporation for the year ended December 31, 2018.

/s/ **MSPC**  
Certified Public Accountants and Advisors,  
A Professional Corporation

New York, New York  
March 30, 2020

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

I, Leonard A. Rosenbaum, 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 30, 2020

/s/ Leonard A. Rosenbaum  
President, Chief Executive Officer and Director

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

I, Thomas McNeill, 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 30, 2020

/s/ Thomas McNeill  
Chief Financial Officer

**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, Leonard A. Rosenbaum, 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, 2019 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 30, 2020

/s/ Leonard A. Rosenbaum  
Leonard A. Rosenbaum  
Chief Executive Officer  
(Principal Executive Officer)

**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, Thomas McNeill, 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, 2019 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 30, 2020

/s/ Thomas McNeill  
Thomas McNeill  
Chief Financial Officer  
(Principal Financial Officer)

