

LIQUIDMETAL TECHNOLOGIES INC  
Form 10-K  
March 05, 2019

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

**FORM 10-K**

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

For the fiscal year ended December 31, 2018

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

**Commission File No. 001-31332**

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**LIQUIDMETAL TECHNOLOGIES, INC.**

*(Exact name of Registrant as specified in its charter)*

**Delaware** **33-0264467**  
*(State or other jurisdiction of incorporation or (I.R.S. Employer organization)* *Identification No.)*  
**20321 Valencia Circle**

**Lake Forest, CA 92630**  
*(Address of principal executive offices, zip code)*

Registrant's telephone number, including area code: **(949) 635-2100**

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

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

**Title of each Class**

Common Stock, \$0.001 par value

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K

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. (Check one):

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 Act). Yes No

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant as of June 29, 2018 was approximately \$126,921,923. For purposes of this calculation only, (i) shares of common stock are deemed to have a market value of \$0.26 per share, the closing price of the common stock as reported on the "OTCQB Venture Marketplace" on June 29, 2018 and (ii) each of the executive officers, directors and persons holding more than 10% of the outstanding common stock as of June 29, 2018 is deemed to be an affiliate. The number of shares of common stock outstanding as of March 1, 2019 was 914,316,624.



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**PART I**

**Forward-Looking Statements**

This Annual Report on Form 10-K of Liquidmetal Technologies, Inc. contains “forward-looking statements” that may state our management’s plans, future events, objectives, current expectations, estimates, forecasts, assumptions or projections about the company and its business. Any statement in this report that is not a statement of historical fact is a forward-looking statement, and in some cases, words such as “believes,” “estimates,” “projects,” “expects,” “intends,” “may,” “anticipate,” “plans,” “seeks,” and similar expressions identify forward-looking statements. Forward-looking statements involve risks and uncertainties that could cause actual outcomes and results to differ materially from the anticipated outcomes or results. These statements are not guarantees of future performance, and undue reliance should not be placed on these statements. It is important to note that our actual results could differ materially from what is expressed in our forward-looking statements due to the risk factors described in the section of this report entitled “Risk Factors” (Item 1A of this report) as well as the following risks and uncertainties:

- Our history of operating losses and the uncertainty surrounding our ability to achieve or sustain profitability;
- Our limited history of developing and selling products made from our bulk amorphous alloys;
- Our limited history in licensing our technology to third parties;
- Lengthy customer adoption cycles and unpredictable customer adoption practices;
- Our ability to identify, develop, and commercialize new product applications for our technology;
- Competition from current suppliers of incumbent materials or producers of competing products;
- Our ability to identify, consummate, and/or integrate strategic partnerships;
- The potential for manufacturing problems or delays; and
- Potential difficulties associated with protecting or expanding our intellectual property position.

We undertake no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

**Item 1. Business**

In this Annual Report on Form 10-K, unless the context indicates otherwise, references to “the Company”, “Liquidmetal Technologies”, “our Company”, “we”, “us”, and similar references refer to Liquidmetal Technologies, Inc. and its subsidiaries.

## Overview

We are a materials technology and manufacturing company that develops and commercializes products made from amorphous alloys. Our Liquidmetal® family of alloys consists of a variety of proprietary bulk alloys and composites that utilize the advantages offered by amorphous alloy technology. We design, develop, manufacture, and sell custom products and parts from bulk amorphous alloys to customers in a wide range of industries. We also partner with third-party manufacturers and licensees to develop and commercialize Liquidmetal alloy products.

Amorphous alloys are, in general, unique materials that are distinguished by their ability to retain a random atomic structure when they solidify, in contrast to the crystalline atomic structure that forms in other metals and alloys when they solidify. Liquidmetal alloys are proprietary amorphous alloys that possess a combination of performance, processing, and potential cost advantages that we believe will make them preferable to other materials in a variety of applications. The amorphous atomic structure of bulk alloys enables them to overcome certain performance limitations caused by inherent weaknesses in crystalline atomic structures, thus facilitating performance and processing characteristics superior in many ways to those of their crystalline counterparts. Our alloys and the molding technologies we employ result in parts that exhibit exceptional dimensional control and repeatability that rivals precision machining, excellent corrosion resistance, brilliant surface finish, high strength, high hardness, high elastic limit, alloys that are non-magnetic, and the ability to form complex shapes common to the injection molding of plastics. All of these characteristics are achievable from the molding process, so design engineers do not have to select specific alloys to achieve one or more of the characteristics as is the case with crystalline materials. We believe these advantages could result in Liquidmetal alloys supplanting high-performance alloys, such as titanium and stainless steel, and other incumbent materials in a wide variety of applications. Moreover, we believe these advantages could enable the introduction of entirely new products and applications that are not possible or commercially viable with other materials.

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**General Corporate Information**

We were originally incorporated in California in 1987, and we reincorporated in Delaware in May 2003. Our principal executive office is located at 20321 Valencia Circle, Lake Forest, California 92630. Our telephone number at that address is (949) 635-2100. Our Internet website address is [www.liquidmetal.com](http://www.liquidmetal.com) and all of our filings with the Securities and Exchange Commission (“SEC”) are available free of charge on our website.

**Our Technology**

The performance, processing, and potential cost advantages of Liquidmetal alloys are a function of their unique atomic structure and their proprietary material composition.

***Unique Atomic Structure***

The atomic structure of Liquidmetal alloys is the fundamental feature that differentiates them from other alloys and metals. In the molten state, the atomic particles of all alloys and metals have an amorphous atomic structure, which means that the atomic particles appear in a completely random structure with no discernible patterns. However, when non-amorphous alloys and metals are cooled to a solid state, their atoms bond together in a repeating pattern of regular and predictable shapes or crystalline grains. This process is analogous to the way ice forms when water freezes and crystallizes. In non-amorphous metals and alloys, the individual crystalline grains contain naturally occurring structural defects that limit the potential strength and performance characteristics of the material. These defects, known as dislocations, consist of discontinuities or inconsistencies in the patterned atomic structure of each grain. Unlike other alloys and metals, bulk Liquidmetal alloys can retain their amorphous atomic structure throughout the solidification process and therefore do not develop crystalline grains and the associated dislocations. Consequently, bulk Liquidmetal alloys exhibit superior strength and other superior performance characteristics compared to their crystalline counterparts.

Prior to 1993, commercially viable amorphous alloys could be created only in thin forms, such as coatings, films, or ribbons. However, in 1993, researchers at the California Institute of Technology (“Caltech”) developed the first commercially viable amorphous alloy in a bulk form. We obtained the exclusive right to commercialize the bulk amorphous alloy through a license agreement with Caltech and have developed the technology to enable the commercialization of bulk amorphous alloys.

***Proprietary Material Composition***

The constituent elements and percentage composition of Liquidmetal alloys are critical to their ability to solidify into an amorphous atomic structure. We have several different alloy compositions that have different constituent elements in varying percentages. The raw materials that we use in Liquidmetal alloys are readily available and can be purchased from multiple suppliers.

### *Advantages of Liquidmetal Alloys*

Liquidmetal alloys possess a unique combination of performance, processing, and potential cost advantages that we believe makes them superior in many ways to other commercially available materials for a variety of existing and potential future product applications. The unique combined process results of precise dimensional control and repeatability, surface finish, strength, hardness, elasticity, and corrosion resistance are uncommon in crystalline material alternatives. Additionally, the ability to leverage various molding processes and related tooling technologies provides the ability to deliver a broad range of material characteristics in a complex shaped component.

### *Performance Advantages*

Our bulk Liquidmetal alloys provide several distinct performance advantages over other materials, and we believe that these advantages make the alloys desirable in applications that require high precision and repeatability, high yield strength, strength-to-weight ratio, elasticity, corrosion resistance and hardness.

### *Processing Advantages*

The processing of a material generally refers to how a material is shaped, formed, or combined with other materials to create a finished product. Bulk Liquidmetal alloys possess processing characteristics that we believe make them preferable to other materials in a wide variety of applications. In particular, our alloys are amenable to processing options that are similar in many respects to those associated with plastics. Additionally, unlike most metals and alloys, our bulk Liquidmetal alloys are capable of being thermoplastically molded in bulk form. Thermoplastic molding consists of heating a solid piece of material until it is transformed into a moldable state, although at temperatures much lower than the melting temperature, and then introducing it into a mold to form near-to-net shaped products. Accordingly, thermoplastic molding can be beneficial and economical for net-shape fabrication of high-strength products. Liquidmetal alloys also have superior net-shape casting capabilities as compared to high-strength crystalline metals and alloys. “Net-shape casting” is a type of casting that permits the creation of near-to-net shaped products that reduce costly post-cast processing or machining.





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### *Cost Advantages*

Liquidmetal alloys have the potential to provide cost advantages over other high-strength metals and alloys in certain applications. Because bulk Liquidmetal alloys have processing characteristics similar in some respects to plastics, which lend themselves to near-to-net shape molding, Liquidmetal alloys can in many cases be shaped efficiently into intricate, engineered products. This capability can eliminate or reduce certain post-molding steps, such as machining and re-forming, and therefore has the potential to significantly reduce processing costs associated with making parts in high volume.

### Our Strategy

The key elements of our strategy include:

*Focusing Our Marketing Activities on Select Products with Optimized Gross-Margins.* We have focused and continue to focus our marketing activities on select products with optimized gross margins for the long term. This strategy is designed to align our product development initiatives with our processes and cost structure, and to reduce our exposure to more commodity-type product applications that are prone to unpredictable demand and fluctuating pricing. Our focus is primarily on products that possess design features that take advantage of our existing and developing manufacturing technology and that command a price commensurate with the performance advantages of our alloys. In addition, we will continue to engage in prototype manufacturing, both for internally manufactured products and for products that will ultimately be licensed to or manufactured by ourselves and/or third parties.

*Pursuing Strategic Partnerships in Order to More Rapidly Develop and Commercialize Products.* We have and continue to actively pursue and support strategic partnerships that will enable us to leverage the resources, strength, and technologies of other companies in order to more rapidly develop and commercialize products. These partnerships may include licensing transactions in which we license full commercial rights to our technology in a specific application area, or they may include transactions of a more limited scope in which, for example, we outsource manufacturing activities or grant limited licensing rights. We believe that utilizing such a partnering strategy will enable us to reduce our working capital burden, better fund product development efforts, better understand customer adoption practices, leverage the technical and financial resources of our partners, and more effectively handle product design and process challenges.

*Advancing the Liquidmetal® Brand.* We believe that building our corporate brand will foster continued adoption of our technology. Our goal is to position Liquidmetal alloys as a superior substitute for materials currently used in a variety of products across a range of industries. Furthermore, we seek to establish Liquidmetal alloys as an enabling technology that will facilitate the creation of a broad range of commercially viable new products. To enhance industry awareness of our company and increase demand for Liquidmetal alloys, we are engaged in various brand development strategies that could include collaborative advertising and promotional campaigns with select customers, industry conference and trade show appearances, public relations, and other means.

### **Applications for Liquidmetal Alloys**

There are a very broad number of markets where Liquidmetal alloys have application opportunities. Some of the more prominent markets include: medical/ dental, automotive, non-consumer electronics, and sporting equipment. We believe that these areas are consistent with our strategy in terms of market size, building brand recognition, and providing an opportunity to develop and refine our processing capabilities. Although we believe that strategic partnership transactions could also create valuable opportunities beyond the parameters of these target markets, we anticipate continuing to pursue these markets both internally and in conjunction with partners.

### ***Medical Devices***

We are engaged in product development efforts relating to various medical devices that could be made from bulk Liquidmetal alloys. We believe that the unique properties of bulk Liquidmetal alloys provide a combination of performance and cost benefits that could make them a desirable replacement for incumbent materials, such as machined stainless steel and titanium, or components made from other more traditional metalworking technologies currently used in various medical device applications. Our ongoing emphasis has been on minimally invasive surgical instrument applications for Liquidmetal alloys. These include, but are not limited to, specialized blades, clamps, tissue suturing components, tissue manipulation devices and orthopedic instruments utilized for implant surgery procedures, dental devices, and general surgery devices. The potential value offered by our alloys is higher performance in some cases and cost reduction in others, the latter stemming from the ability of Liquidmetal alloys to be net shape molded into components, thus reducing costs of secondary processing common with other metalworking processes. The status of most components in the prototyping phase is subject to non-disclosure agreements with our customers.

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*Automotive Components*

We are engaged in product development efforts relating to various automotive components that could be made from bulk Liquidmetal alloys. We believe that the unique properties of bulk Liquidmetal alloys provide the combination of long-lasting surface finish, corrosion resistance, strength, and precision required by most automotive applications. The potential value offered by our alloys is higher performance in some cases and cost reduction in others, the latter stemming from the ability of Liquidmetal alloys to be net shape molded into components, thus reducing costs of secondary processing common with existing processes.

*Components for Non-Consumer Electronic Products*

We design, develop and produce components for non-consumer electronic devices utilizing our bulk Liquidmetal alloys and believe that our alloys offer enhanced performance and design benefits for these components in certain applications. Our strategic focus is primarily on parts that command a price commensurate with the performance advantages of our alloys. These product categories in the non-consumer electronics field include, but are not limited to, aerospace components, medical devices, sporting goods, leisure products, automotive components and industrial machines. We believe that there are multiple applications and opportunities in the non-consumer electronics product category for us to produce parts that command the higher margin and premium prices consistent with our core business strategy.

We believe that the continued miniaturization of, and the introduction of advanced features to non-consumer electronic devices is a primary driver of growth, market share, and profits in our industry. The high strength-to-weight ratio and elastic limit, along with the processing advantages of bulk Liquidmetal alloys enable the production of smaller, thinner, but stronger electronic parts. We also believe that the strength characteristics of our alloys could facilitate the creation of a new generation of non-consumer electronic devices which currently may not be viable because of strength limitations of conventional metal parts in the marketplace today. Lastly, we believe that our alloys offer style and design flexibility, such as shiny metallic finishes, to accommodate the changing tastes of our customers.

On August 5, 2010, we entered into a license transaction with Apple Inc. (“Apple”) pursuant to which, for a one time license fee, we granted to Apple a perpetual, worldwide, fully-paid, exclusive license to commercialize our intellectual property in the field of “consumer electronic” products, as defined in the license agreement. As a result, we will not pursue application of our bulk Liquidmetal alloys in the consumer electronics field. However, we continue to work with Apple to develop and advance research and development in the amorphous alloy space to benefit both consumer and non-consumer electronics fields. For more information regarding our transaction with Apple, see “ – Licensing Transactions” below.

***Sporting Goods and Leisure Products***

We are developing a variety of applications for Liquidmetal alloys in the sporting goods and leisure products area.

In the sporting goods industry, we believe that the high strength, hardness, corrosion resistance, and elasticity of our bulk alloys have the potential to enhance performance in a variety of products including, but not limited to, golf clubs, tennis rackets, archery, sporting arms and scuba equipment. We further believe that many sporting goods products are conducive to our strategy of focusing on high-margin products that meet our design criteria.

In the leisure products category, we believe that bulk Liquidmetal alloys can be used to efficiently produce intricately engineered designs with high-quality finishes, such as premium watchcases and knives. We further believe that Liquidmetal technology can be used to make high-quality, high-strength jewelry from precious metals.

**Licensing Transactions**

**Eontec License Agreement**

On March 10, 2016, in connection with the 2016 Purchase Agreement, we entered into a Parallel License Agreement (the "License Agreement") with DongGuan Eontec Co., Ltd., a Hong Kong corporation ("Eontec") pursuant to which we each agreed to cross-license our respective technologies. The Company's Chairman and CEO, Professor Lugee Li, is also a major shareholder and Chairman of Eontec.

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The License Agreement provides for the cross-license of certain patents, technical information, and trademarks between us and Eontec. In particular, we granted to Eontec a paid-up, royalty-free, perpetual license to our patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of North America and Europe. In turn, Eontec granted to us a paid-up, royalty-free, perpetual license to Eontec's patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of specified countries in Asia. The license granted by us to Eontec is exclusive (including to the exclusion of us) in the countries of Brunei, Cambodia, China (P.R.C and R.O.C.), East Timor, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, South Korea, Thailand and Vietnam. The license granted by Eontec to us is exclusive (including to the exclusion of Eontec) in North America and Europe. The cross-licenses are non-exclusive in geographic areas outside of the foregoing exclusive territories.

Beyond the License Agreement, we collaborate with Eontec to accelerate the commercialization of amorphous alloy technology. This includes but is not limited to developing technologies to reduce the cost of amorphous alloys, working on die cast machine technology platforms to pursue broader markets, sharing knowledge to broaden our intellectual property portfolio, and utilizing Eontec's volume production capabilities as a third party contract manufacturer.

## Apple License Transaction

On August 5, 2010, we entered into a license transaction with Apple Inc. ("Apple") pursuant to which (i) we contributed substantially all of our intellectual property assets to a newly organized special-purpose, wholly-owned subsidiary, called Crucible Intellectual Property, LLC ("CIP"), (ii) CIP granted to Apple a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in the field of consumer electronic products, as defined in the license agreement, in exchange for a license fee, and (iii) CIP granted back to us a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in all other fields of use.

Under the agreements relating to the license transaction with Apple, we were obligated to contribute, to CIP, all intellectual property developed through February 2016. We are also obligated to maintain certain limited liability company formalities with respect to CIP at all times after the closing of the license transaction.

## Visser Precision Cast, LLC License Transaction

On June 1, 2012, we entered into a Master Transaction Agreement (the "Visser MTA") with Visser Precision Cast, LLC ("Visser") relating to a strategic transaction for manufacturing services and financing. On May 20, 2014, we and Visser entered into a settlement agreement significantly amending the Visser MTA, whereby we granted to Visser a fully paid-up, royalty-free, irrevocable, perpetual, worldwide, non-transferable, nonexclusive sublicense to all of our

intellectual property developed on or prior to May 20, 2014 (the “Effective Date”). Visser does not have any rights, now or in the future, to our intellectual property developed after the Effective Date. The license to our intellectual property developed on or prior to the Effective Date does not include the right to use the “Liquidmetal” trademark or any of our other trademarks, except in certain defined situations, as set forth in the amended and restated agreement.

In addition, the settlement amended and restated the two warrants we issued to Visser in June 2012 to purchase 15,000,000 shares of our common stock at an exercise price of \$0.22 per share. The amended and restated warrant agreement includes the effect of anti-dilution adjustments and is exercisable for 21,317,094 shares at an exercise price \$0.16 per share under the anti-dilution provisions of the warrants. On March 22, 2017 Visser exercised, on a cashless basis, all 21,317,094 warrants, resulting in the issuance of 4,241,386 shares of our common stock. Upon exercise, we reclassified \$975,000 of the associated warrant liability to permanent equity, with \$4,000 being allocated to common stock and \$971,000 to additional paid in capital. (see Note 11 in the accompanying footnotes to the consolidated financial statements).

#### Other License Transactions

On January 31, 2012, the Company entered into a Supply and License Agreement for a five year term with Engel Austria GmbH (“Engel”) whereby Engel was granted a non-exclusive license to manufacture and sell injection molding machines to the Company’s licensees. Since that time, the Company and Engel have agreed on an injection molding machine configuration that can be commercially supplied and supported by Engel. On December 6, 2013, the companies entered into an Exclusivity Agreement for a ten year term whereby the Company agreed, with certain exceptions and limitations, that the Company and its licensees would purchase amorphous alloy injection molding machines exclusively from Engel, and this exclusivity right was granted in exchange for certain royalties to be paid by Engel to the Company based on a percentage of the net sales price of such injection molding machines.

The Company’s Liquidmetal Golf subsidiary has the exclusive right and license to utilize the Company’s Liquidmetal alloy technology for purposes of golf equipment applications. This right and license is set forth in an intercompany license agreement between Liquidmetal Technologies and Liquidmetal Golf. This license agreement provides that Liquidmetal Golf has a perpetual and exclusive license to use Liquidmetal alloy technology for the purpose of manufacturing, marketing, and selling golf club components and other products used in the sport of golf. The Company owns 79% of the outstanding common stock in Liquidmetal Golf.

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In June 2003, the Company entered into an exclusive license agreement with LLPG, Inc. (“LLPG”). Under the terms of the agreement, LLPG has the exclusive right to commercialize Liquidmetal alloys, particularly precious-metal based compositions, in jewelry and high-end luxury product markets. The Company, in turn, will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by LLPG. The exclusive license agreement with LLPG expires on December 31, 2021.

In March 2009, the Company entered into a license agreement with Swatch Group, Ltd. (“Swatch”) under which Swatch was granted a non-exclusive license to the Company’s technology to produce and market watches and certain other luxury products. In March 2011, this license agreement was amended to grant Swatch exclusive rights as to watches and all third parties (including the Company), but non-exclusive as to Apple, and the Company’s license agreement with LLPG was simultaneously amended to exclude watches from LLPG’s rights. The Company will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by Swatch. The license agreement with Swatch will expire on the expiration date of the last licensed patent.

## Our Intellectual Property

Our intellectual property consists of patents, trade secrets, know-how, and trademarks. Protection of our intellectual property is a strategic priority for our business, and we intend to vigorously protect our patents and other intellectual property. Our intellectual property portfolio includes more than 20 owned or licensed U.S. patents relating to the composition, processing, and application of our alloys, as well as more than 40 foreign counterpart patents and patent applications.

Our initial bulk amorphous alloy technology was developed by researchers at the California Institute of Technology (“Caltech”). We have acquired patent rights that provide us with the exclusive right to commercialize the amorphous alloys and other amorphous alloy technology developed at Caltech through a license agreement (“Caltech License Agreement”) with Caltech. In addition to the patents and patent applications that we license from Caltech, we are building a portfolio of our own patents to expand and enhance our technology position. These patents and patent applications primarily relate to various applications of our bulk amorphous alloys and the processing of our alloys. The patents expire on various dates between 2019 and 2036. Our policy is to seek patent protection for all technology, inventions, and improvements that are of commercial importance to the development of our business, except to the extent that we believe it is advisable to maintain such technology or invention as a trade secret.

In order to protect the confidentiality of our technology, including trade secrets, know-how, and other proprietary technical and business information, we require that all of our employees, consultants, advisors and collaborators enter into confidentiality agreements that prohibit the use or disclosure of information that is deemed confidential. The agreements also obligate our employees, consultants, advisors and collaborators to assign to us developments, discoveries and inventions made by such persons in connection with their work with us.



## **Research and Development**

We are engaged in ongoing research and development programs that are driven by the following key objectives:

*Enhance Material Processing and Manufacturing Efficiencies.* We are working with our strategic partners to •enhance material processing and manufacturing efficiencies. We plan to continue research and development of processes and compositions that will decrease our cost of making products from Liquidmetal alloys.

*Optimize Existing Alloys and Develop New Compositions.* We believe that one of the key technology drivers of our business will continue to be our proprietary alloy compositions. We plan to continue research and development on new alloy compositions to reduce the cost of our proprietary alloy compositions, as well as to generate a broader •class of amorphous alloys with a wider range of specialized performance characteristics. We believe that our ability to optimize our existing alloy compositions, and reduce their costs, will enable us to better tailor our alloys to our customers' specific application requirements. Current efforts also include collaboration with Eontec, under the terms of the License Agreement, in developing alternative, low-cost, alloy compositions.

*Develop New Applications.* We will continue the research and development of new applications for Liquidmetal •alloys. We believe the range of potential applications will broaden as we expand the forms, compositions, and methods of processing of our alloys.

We conduct our research and development programs internally, as well as through strategic relationships with third parties. Currently, our internal research and development efforts are conducted by a team of five scientists, engineers, and technicians each of whom we either employ directly or engage as a consultant.

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In addition to our internal research and development efforts, we enter into cooperative research and development relationships with leading academic institutions. We have entered into development relationships with other companies for the purpose of identifying new applications for our alloys and establishing customer relationships with such companies. Some of our product development programs are partially funded by our customers. We are also engaged in negotiations with other potential customers regarding possible product development relationships. Our research and development expenses for the years ended December 31, 2018, 2017 and 2016 were \$2.4 million, \$2.0 million and \$2.3 million, respectively.

## Raw Materials

Liquidmetal alloy compositions are comprised of many elements, many of which are generally available commodity products. While we believe that each of these raw materials is readily available in sufficient quantities from multiple sources on commercially acceptable terms, we continue to seek opportunities to secure stocks of essential elements in advance to manage lead-times and cost. Due to our inherent dependency on these alloy compositions for the manufacture of Liquidmetal products, any substantial increase in the price or interruption in the supply of these materials could have an adverse effect on our business.

## Manufacturing

During 2017, we purchased and relocated to a new manufacturing facility, which will allow for the expansion of our ability to (i) provide on-site manufacturing of customer products, (ii) provide our customers and strategic partners a venue to inspect, collaborate, and demonstrate the latest developments of our alloy composition development and manufacturing processes, and (iii) us being able to provide multiple platforms for manufacturing customer products. Additionally, as further validation of our on-site processes and focus on product quality, we have renewed our ISO 9001:2015 certification and will continue to add new customer quality process and procedures to secure additional quality certifications in future periods. This will allow for the continued growth of the customer base we are able to serve.

In addition, our current manufacturing strategy is to partner with global companies that are contract manufacturers and alloy producers. We seek third party companies with proven track records of success who can gain specialized skills and knowledge of our alloys through close collaborations with our team of scientists and engineers. We believe that partnering with these global companies will allow us to forgo the capital intensive requirements of maintaining our own larger scale manufacturing facilities and allow us to grow the number of applications for the technology much faster than could be accomplished on our own.

## Customers

During 2018, there were three major customers, who together accounted for 66% of our revenue. During 2017, there were five major customers, who together accounted for 63% of our revenue. During 2016, there were three major customers, who together accounted for 73% of our revenue. As of December 31, 2018, three customers represented 90%, or \$108,000, of the total outstanding trade accounts receivable. As of December 31, 2017, three customers represented 84%, or \$131,000, of the total outstanding trade accounts receivable. As of December 31, 2016, two customers represented 100%, or \$95,000, of the total outstanding trade accounts receivable. In the future, we expect that a significant portion of our revenue may continue to be concentrated in a limited number of customers, even if our bulk alloys business grows.

### **Competition**

Our bulk Liquidmetal alloys face competition from other materials, including metals, alloys, plastics and composites, which are currently used in the commercial applications that we pursue. For example, we face significant competition from plastics, zinc and stainless steel in our non-consumer electronics components business, and titanium and composites will continue to be used widely in medical devices and sporting goods. Many of these competitive materials are produced by domestic and international companies that have substantially greater financial and other resources than we do. Based on our experience developing products for a variety of customers, we believe that the selection of materials by potential customers will continue to be product-specific in nature, with the decision for each product being driven primarily by the performance needs of the application and, secondarily, by cost considerations and design flexibility. Because of the relatively high strength of our alloys, dimensional precision, and the design flexibility of our process, we are most competitive when the customer is seeking a higher strength, as well as greater design flexibility, than currently available with other materials. However, if currently available materials, such as plastics, are strong enough for the application, our alloys are often not competitive in those applications with respect to price. We also believe that our alloys are generally not competitive with the cost of some of the basic metals, such as steel, aluminum or copper, when such basic metals can be processed by simple traditional metalworking processes into shapes and components that are satisfactory for their intended applications. Our alloys are generally more competitive with respect to price compared to components machined from various metals, such as titanium, stainless steel and other higher performance crystalline metals. Our alloys could also face competition from new materials that may be developed in the future, including new materials that could render our alloys obsolete.

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We experience and will continue to experience indirect competition from the competitors of our customers. Because we rely on our customers to market and sell finished goods that incorporate our components or products, our success will depend in part on the ability of our customers to effectively market and sell their own products and compete in their respective markets.

## Backlog

Because of the minimal lead-time associated with orders of bulk alloy parts, we generally do not carry a significant backlog. The backlog as of any particular date gives no indication of actual sales for any succeeding period.

## Sales and Marketing

We direct our marketing efforts towards customers that will incorporate our components and products into their finished goods. Our goal is to educate customers on the benefits of our technology and help them gain adequate knowledge to apply the technology to their upcoming product application designs. To that end, we have business development personnel who, in conjunction with engineers and scientists, will actively identify potential customers that may be able to benefit from the introduction of Liquidmetal alloys to their products. We currently have three full-time employees engaged in sales and marketing activities. Additionally, we have expanded our outside sales forces to complement our internal team, as evidenced through the continued partnering with territorial market sales representatives.

## Employees

As of December 31, 2018, we had 25 full-time employees and no part time employees. As of that date, none of our employees were represented by a labor union. We have not experienced any work stoppages and we consider our employee relations to be favorable.

## Governmental Regulation

Government regulation of our products will depend on the nature and type of product and the jurisdictions in which the products are sold. For example, medical instruments incorporating our Liquidmetal alloys will be subject to regulation in the United States by the FDA and corresponding state and foreign regulatory agencies. Medical device

manufacturers to whom we intend to sell our products may need to obtain FDA approval before marketing their medical devices that incorporate our products and may need to obtain similar approvals before marketing these medical device products in foreign countries.

### **Environmental Law Compliance**

Our operations are subject to national, state, and local environmental laws in the United States. We believe that we are in material compliance with all applicable environmental regulations. While we continue to incur costs to comply with environmental regulations, we do not believe that such costs will have a material effect on our capital expenditures, earnings, or competitive position.

### **Golf Subsidiary**

From 1997 until September 2001, we were engaged in the retail marketing and sale of golf clubs through a majority-owned subsidiary, Liquidmetal Golf. The retail business of Liquidmetal Golf was discontinued in September 2001. However, in December 2012, we recommenced activities and discussions with potential partners regarding the development of golf club components for golf original equipment manufacturers that will integrate these components into their own clubs and then sell them under their respective brand names. Such activities continued, on a limited basis, through 2018. Liquidmetal Technologies owns 79% of the outstanding common stock in Liquidmetal Golf.

Our Liquidmetal Golf subsidiary has the exclusive right and license to utilize our Liquidmetal alloy technology for purposes of golf equipment applications. This right and license is set forth in an intercompany license agreement between Liquidmetal Technologies and Liquidmetal Golf. This license agreement provides that Liquidmetal Golf has a perpetual and exclusive license to use Liquidmetal alloy technology for the purpose of manufacturing, marketing, and selling golf club components and other products used in the sport of golf. In consideration of this license, Liquidmetal Golf has issued 4,500,000 shares of Liquidmetal Golf common stock to Liquidmetal Technologies, which comprises Liquidmetal Technologies' 79% ownership interest in Liquidmetal Golf.

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**Item 1A. Risk Factors**

*Investing in our securities involves a high degree of risk. The risks described below are not the only ones facing us. Additional risks not currently known to us or that we currently believe are immaterial also may impair our business, operations, liquidity and stock price materially and adversely. You should carefully consider the risks and uncertainties described below in addition to the other information included or incorporated by reference in this Annual Report on Form 10-K. If any of the following risks actually occur, our business, financial condition or results of operations would likely suffer. In that case, the trading price of our common stock could fall and you could lose all or part of your investment.*

**We have incurred significant operating losses in the past and may not be able to achieve or sustain profitability in the future.**

We have experienced significant cumulative operating losses since our inception. Our operating loss for the fiscal years ended December 31, 2018, 2017, and 2016 were \$9.0 million, \$8.6 million, and \$9.9 million, respectively. We had an accumulated deficit of approximately \$252.8 million at December 31, 2018, and approximately \$245.4 million at December 31, 2017. We anticipate that we may continue to incur operating losses for the foreseeable future. Consequently, it is possible that we may never achieve positive earnings and, if we do achieve positive earnings, we may not be able to achieve them on a sustainable basis.

**We have a limited history of developing and selling products made from our bulk amorphous alloys.**

We have a relatively limited history of producing bulk amorphous alloy components and products on a mass-production scale. Furthermore, our suppliers' ability to produce our products in desired quantities and at commercially reasonable prices is uncertain and is dependent on a variety of factors that are outside of its control, including the nature and design of the component, the customer's specifications, and required delivery timelines.

**We rely on assumptions about the markets for our products and components that, if incorrect, may adversely affect our profitability.**

We have made assumptions regarding the market size for, and the manufacturing requirements of, our products and components based in part on information we received from third parties and also from our limited history. If these assumptions prove to be incorrect, we may not achieve anticipated market penetration, revenue targets or profitability.

**Our historical results of operations may not be indicative of our future results.**

As a result of our limited history of developing and marketing bulk amorphous alloy components and products, as well as our new manufacturing strategy of partnering with contract manufacturers and alloy producers, our historical results of operations may not be indicative of our future results.

**We primarily rely on limited suppliers for mold making, manufacturing and alloying of our bulk amorphous alloys and parts, as well as the manufacturing of our bulk amorphous alloy production machines.**

We currently have three suppliers who fulfill the mold making and manufacturing of our bulk amorphous alloy parts. Our suppliers may allocate their limited capacity to fulfill the production requirements of their other customers. In the event of a disruption of the operations of our suppliers, we may not have other manufacturing sources immediately available. Such an event could cause significant delays in shipments and may adversely affect our revenue, cost of goods sold and results of operations.

We currently have two suppliers who fulfill our alloying/manufacturing of bulk amorphous alloys. In the event of a disruption of the operations of our alloy suppliers, we may not have other alloying sources immediately available. Such an event could cause significant delays in shipments and may adversely affect our revenue, cost of goods sold and results of operations.

Our bulk amorphous alloy production machines are manufactured by two suppliers. Orders for additional machines are estimated to be built with a 13 to 26-week lead time. If we require more production machines to manufacture customer parts due to an unexpected demand, we may experience delays in shipment, increased cost of goods sold or loss in revenues. Additionally, in the event of a disruption in the operations of our production machine suppliers, we may not have other machine manufacturers immediately available. Such an event could cause significant delays in fulfilling customers' orders and may adversely affect our revenue, cost of goods sold and results of operations.

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**If we cannot establish and maintain relationships with customers that incorporate our components and products into their finished goods, we will not be able to increase our revenue and commercialize our products.**

Our business is based upon the commercialization of a new and unique materials technology. Our ability to increase our revenues will depend on our ability to successfully maintain and establish relationships with customers who are willing to incorporate our proprietary alloys and technology into their finished products. However, we believe that the size of our company and the novel nature of our technology and manufacturing process may continue to make it challenging to maintain and establish such relationships. In addition, we rely and will continue to rely to a large extent on the manufacturing, research, and development capabilities, as well as the marketing and distribution capabilities, of our customers in order to commercialize our products. Our future growth and success will depend in large part on our ability to enter into these relationships and the subsequent success of these relationships. Even if our products are selected for use in a customer's products, we still may not realize significant revenue from that customer if that customer's products are not commercially successful.

**It may take significant time and cost for us to develop new customer relationships, which may delay our ability to generate additional revenue or achieve profitability.**

Our ability to generate revenue from new customers is generally affected by the amount of time it takes for us to, among other things:

identify a potential customer and introduce the customer to Liquidmetal alloys;

work with the customer to select and design the parts to be fabricated from Liquidmetal alloys;

make the molds and tooling to be used to produce the selected part;

make prototypes and samples for customer testing;

work with our customers to test and analyze prototypes and samples; and

with respect to some types of products, such as medical devices, obtain regulatory approvals.

We believe that our average sales cycle (the time we deliver a proposal to a customer until the time our customer fully integrates our Liquidmetal alloys into its product) could be a significant period of time. Our history to date has



demonstrated that the sales cycle could extend beyond one year. The time it takes to transition a customer from limited production to full-scale production runs will depend upon the nature of the processes and products into which our Liquidmetal alloys are integrated. Moreover, we have found that customers often proceed very cautiously and slowly before incorporating a fundamentally new and unique type of material into their products.

**After we develop a customer relationship, it may take a significant amount of time for that customer to develop, manufacture, and sell finished goods that incorporate our components and products.**

Our experience has shown that our customers will perform numerous tests and extensively evaluate our components and products before incorporating them into their finished products. The time required for testing, evaluating, and designing our components and products into a customer's products, and in some cases, obtaining regulatory approval, can be significant, with an additional period of time before a customer commences volume production of products incorporating our components and products, if ever. Moreover, because of this lengthy development cycle, we may experience a delay between the time we accrue expenses for research and development and sales and marketing efforts and the time when we generate revenue, if any. We may incur substantial costs in an attempt to transition a customer from initial testing to prototype and from prototype to final product. If we are unable to minimize these transition costs, or to recover the costs of these transitions from our customers, our operating results will be adversely affected.

**A limited number of our customers generate a significant portion of our revenue.**

For the near future, we expect that a significant portion of our revenue may be concentrated in a limited number of customers. A reduction, delay, or cancellation of orders from one or more of these customers or the loss of one or more customer relationships could significantly reduce our revenue and harm our business. Unless we establish long-term sales arrangements with these customers, they will have the ability to reduce or discontinue their purchases of our products on short notice.

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**We expect to rely on our customers and licensees to market and sell finished goods that incorporate our products and components, a process over which we will have little control.**

Our future revenue growth and ultimate profitability will depend in part on the ability of our customers and licensees to successfully market and sell their finished goods that incorporate our products. We may have little control over our customers' and licensees' marketing and sales efforts. These marketing and sales efforts may be unsuccessful for various reasons, any of which could hinder our ability to increase revenue or achieve profitability. For example, our customers may not have or devote sufficient resources to develop, market, and sell their finished goods that incorporate our products. Because we typically will not have exclusive sales arrangements with our customers, they will not be precluded from exploring and adopting competing technologies. Also, products incorporating competing technologies may be more successful for reasons unrelated to the performance of Liquidmetal products or the marketing efforts of our customers and licensees.

**Our growth depends on our ability to identify, develop, and commercialize new applications for our technology.**

Our future growth and success will depend in part on our ability to identify, develop, and commercialize, either alone or in conjunction with our customers and partners, new applications and uses for Liquidmetal alloys. If we are unable to identify and develop new applications, we may be unable to develop new products or generate additional revenue. Successful development of new applications for our products may require additional investment, including costs associated with research and development and the identification of new customers. In addition, difficulties in developing and achieving market acceptance of new products would harm our business.

**We may not be able to effectively compete with current suppliers of incumbent materials or producers of competing products.**

The future growth and success of our Liquidmetal alloy business will depend in part on our ability to establish and retain a technological advantage over other materials for our targeted applications. For many of our targeted applications, we will compete with manufacturers of similar products that use different materials many of which have substantially greater financial and other resources than we do. These different materials may include plastics, zinc, titanium alloys, metal injection molding, or stainless steel, among others, and we will compete directly with suppliers of the incumbent material. In addition, in each of our targeted markets, our success will depend in part on the ability of our customers to compete successfully in their respective markets. Thus, even if we are successful in replacing an incumbent material in a finished product, we will remain subject to the risk that our customer will not compete successfully in its own market.

**Our bulk amorphous alloy technology is still at an early stage of commercialization relative to many other materials.**

Our bulk amorphous alloy technology is a relatively new technology as compared to many other material technologies, such as plastics and widely-used high-performance crystalline alloys. Historically, the successful commercialization of a new material technology has required the persistent improvement and refining of the technology over a sometimes lengthy period of time. Accordingly, we believe that our company's future success will be dependent on our ability to continue expanding and improving our technology platform by, among other things, constantly refining and improving our processes, optimizing our existing amorphous alloy compositions for various applications, and developing and improving new bulk amorphous alloy compositions. Our failure to further expand our technology base could limit our growth opportunities and hamper our commercialization efforts.

**Future advances in materials science could render Liquidmetal alloys obsolete.**

Academic institutions and business enterprises frequently engage in the research and testing of new materials, including alloys and plastics. Advances in materials science could lead to new materials that have a more favorable combination of performance, processing, and cost characteristics than our alloys. The future development of any such new materials could render our alloys obsolete and unmarketable or may impair our ability to compete effectively.

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**Our growth depends upon our ability to retain and attract a sufficient number of qualified employees.**

Our business is based upon the commercialization of a new and unique materials technology. Our future growth and success will depend in part on our ability to retain key members of our management and scientific staff, who are familiar with this technology and the potential applications and markets for it. We do not have “key man” or similar insurance on any of the key members of our management and scientific staff. If we lose their services or the services of other key personnel, our financial results or business prospects may be harmed. Additionally, our future growth and success will depend in part on our ability to attract, train, and retain scientific engineering, manufacturing, sales, marketing, and management personnel. We cannot be certain that we will be able to attract and retain the personnel necessary to manage our operations effectively. Competition for experienced executives and scientists from numerous companies and academic and other research institutions may limit our ability to hire or retain personnel on acceptable terms. In addition, many of the companies with which we compete for experienced personnel have greater financial and other resources than we do. Moreover, the employment of otherwise highly qualified non-U.S. citizens may be restricted by applicable immigration laws.

**We may not be able to successfully identify, consummate, integrate, or derive benefit from strategic partnerships.**

As part of our business strategy, we intend to pursue strategic partnering transactions that provide access to new technologies, products, markets, and manufacturing capabilities. These transactions could include licensing agreements, joint ventures, or business combinations. We believe that these transactions will be particularly important to our future growth and success due to the size and resources of our company and the novel nature of our technology. For example, we may determine that we may need to license our technology to a larger manufacturer in order to penetrate a particular market. In addition, we may pursue transactions that will give us access to new technologies that are useful in connection with the composition, processing, or application of Liquidmetal alloys. We may not be able to successfully identify any potential strategic partnerships. Even if we do identify one or more potentially beneficial strategic partners, we may not be able to consummate transactions with these strategic partners on favorable terms or obtain the benefits we anticipate from such a transaction.

**We may derive some portion of our revenue from sales outside the United States, which may expose the Company to foreign commerce risks.**

We may sell a portion of our products to customers outside of the United States, and our operations and revenue may be subject to risks associated with foreign commerce, including transportation delays and foreign tax and legal compliance. Moreover, customers may sell finished goods that incorporate our components and products outside of the United States, which indirectly expose us to additional foreign commerce risks.

**A substantial increase in the price or interruption in the supply of raw materials for our alloys could have an adverse effect on our profitability.**

Our proprietary alloy compositions are comprised of many elements, all of which are generally available commodity products. Although we believe that each of these raw materials is currently readily available in sufficient quantities from multiple sources on commercially acceptable terms, if the prices of these materials substantially increase or there is an interruption in the supply of these materials, such increase or interruption could adversely affect our profitability. For example, if the price of one of the elements included in our alloys substantially increases, we may not be able to pass the price increase on to our customers.

**Our business could be subject to the potentially adverse consequences of exchange rate fluctuations.**

We expect to conduct business in various foreign currencies and will be exposed to market risk from changes in foreign currency exchange rates and interest rates. Fluctuations in exchange rates between the U.S. dollar and such foreign currencies may have a material adverse effect on our business, results of operations, and financial condition and could specifically result in foreign exchange gains and losses. The impact of future exchange rate fluctuations on our operations cannot be accurately predicted. To the extent that the percentage of our non-U.S. dollar revenue derived from international sales increases in the future, our exposure to risks associated with fluctuations in foreign exchange rates will increase further.

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**Our inability to protect our licenses, patents, trademarks, and proprietary rights in the United States and foreign countries could harm our business.**

We own several patents relating to amorphous alloy technology, and we have other rights to amorphous alloy patents through an exclusive license from the California Institute of Technology. Our success depends in part on our ability to obtain and maintain patent and other proprietary right protection for our technologies and products in the United States and other countries. If we are unable to obtain or maintain these protections, we may not be able to prevent third parties from using our proprietary rights. Specifically, we must:

- protect and enforce our owned and licensed patents and intellectual property;
- exploit our owned and licensed patented technology; and
- operate our business without infringing on the intellectual property rights of third parties.

Our licensed technology is comprised of several issued United States patents covering the composition, method of manufacturing, and application and use of the family of Liquidmetal alloys. We also hold several United States and corresponding foreign patents covering the manufacturing processes of Liquidmetal alloys and their use. Those patents have expiration dates between 2019 and 2036. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and we may encounter significant problems and costs in protecting our proprietary rights in these foreign countries.

In August 2010, we entered into a license transaction with Apple Inc. (“Apple”) pursuant to which (i) we contributed substantially all of our intellectual property assets to a newly organized special-purpose, wholly-owned subsidiary, called Crucible Intellectual Property, LLC (“CIP”), (ii) CIP granted to Apple a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in the field of consumer electronic products, as defined in the license agreement, and (iii) CIP granted back to us a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in all other fields of use.

Patent law is still evolving relative to the scope and enforceability of claims in the fields in which we operate. Our patent protection involves complex legal and technical questions. Our patents and those patents for which we have license rights may be challenged, narrowed, invalidated, or circumvented. We may be able to protect our proprietary rights from infringement by third parties only to the extent that our proprietary technologies are covered by valid and enforceable patents or are effectively maintained as trade secrets. Furthermore, others may independently develop similar or alternative technologies or design around our patented technologies. Litigation or other proceedings to defend or enforce our intellectual property rights could require us to spend significant time and money and could otherwise adversely affect our business.

**Other companies or individuals may claim that we infringe their intellectual property rights, which could cause us to incur significant expenses or prevent us from selling our products.**

Our success depends, in part, on our ability to operate without infringing on valid, enforceable patents or proprietary rights of third parties and without breaching any licenses that may relate to our technologies and products. Future patents issued to third parties may contain claims that conflict with our patents and that compete with our products and technologies, and third parties could assert infringement claims against us. Any litigation or interference proceedings, regardless of their outcome, may be costly and may require significant time and attention from our management and technical personnel. Litigation or interference proceedings could also force us to:

stop or delay using our technology;

stop or delay our customers from selling, manufacturing or using products that incorporate the challenged intellectual property;

pay damages; or

enter into licensing or royalty agreements that may be unavailable on acceptable terms.

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**Evolving regulation of corporate governance and public disclosure may result in additional expenses and continuing uncertainty.**

Changing laws, regulations and standards relating to corporate governance and public disclosure, including the SEC XBRL mandate, new SEC regulations and International Financial Reporting Standards (“IFRS”), are creating uncertainty for public companies. As a result of these new rules and the size and limited resources of our company, we will incur additional costs associated with our public company reporting requirements, and we may not be able to comply with some of these new rules. In addition, these new rules could make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and this could make it difficult for us to attract and retain qualified persons to serve on our board of directors.

We are presently evaluating and monitoring developments with respect to new and proposed rules and cannot predict or estimate the amount of the additional costs we may incur or the timing of such costs. These new or changed laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity, and as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

We are committed to maintaining high standards of corporate governance and public disclosure. As a result, we intend to invest resources to comply with evolving laws, regulations, and standards, and this investment may result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new or changed laws, regulations, and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

**The time and cost associated with complying with government regulations to which we could become subject could have a material adverse effect on our business.**

Some of the applications for our Liquidmetal alloys that we have identified or may identify in the future may be subject to government regulations. For example, any medical devices made from our alloys likely will be subject to extensive government regulation in the United States by the Food and Drug Administration (“FDA”). Any medical device manufacturers to whom we sell Liquidmetal alloy products may need to comply with FDA requirements, including premarket approval or clearance under Section 510(k) of the Food Drug and Cosmetic Act before marketing Liquidmetal alloy medical device products in the United States. These medical device manufacturers may be required to obtain similar approvals before marketing these medical devices in foreign countries. Any medical device manufacturers with which we jointly develop and sell medical device products may not provide significant assistance to us in obtaining required regulatory approvals. The process of obtaining and maintaining required FDA and foreign regulatory approvals could be lengthy, expensive, and uncertain. Additionally, regulatory agencies can delay or



prevent product introductions. The failure to comply with applicable regulatory requirements can result in substantial fines, civil and criminal penalties, stop sale orders, loss or denial of approvals, recalls of products, and product seizures.

To the extent that our products have the potential for dual use, such as military and non-military applications, they may be subject to import and export restrictions of the U.S. government, as well as other countries. The process of obtaining any required U.S. or foreign licenses or approvals could be time-consuming, costly, and uncertain. Failure to comply with import and export regulatory requirements can lead to substantial fines, civil and criminal penalties, and the loss of government contracting and export privileges.

**The existence of minority shareholders in our Liquidmetal Golf subsidiary creates potential for conflicts of interest.**

We directly own 79% of the outstanding capital stock of Liquidmetal Golf, our subsidiary that has the exclusive right to commercialize our technology in the golf market. The remaining 21% of the Liquidmetal Golf stock is owned by approximately 95 shareholders of record. As a result, conflicts of interest may develop between us and the minority shareholders of Liquidmetal Golf. To the extent that our officers and directors are also officers or directors of Liquidmetal Golf, matters may arise that place the fiduciary duties of these individuals in conflicting positions.

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**Our executive officers, directors and insiders and entities affiliated with them hold a significant percentage of our common stock, and these shareholders may take actions that may be adverse to your interests.**

As of December 31, 2018, our executive officers, directors and insiders and entities affiliated with them, in the aggregate, beneficially owned approximately 47.4% of our common stock. As a result, these shareholders, acting together, will be able to significantly influence all matters requiring shareholder approval, including the election and removal of directors and approval of significant corporate transactions such as mergers, consolidations and sales of assets. They also could dictate the management of our business and affairs. This concentration of ownership could have the effect of delaying, deferring or preventing a change in control or impeding a merger or consolidation, takeover or other business combination, which could cause the market price of our common stock to fall or prevent you from receiving a premium in such a transaction.

**Our stock price has experienced volatility and may continue to experience volatility.**

During 2018, the highest bid price for our common stock was \$0.29 per share, while the lowest bid price during that period was \$0.10 per share. The trading price of our common stock could continue to fluctuate widely due to:

limited current liquidity and the possible need to raise additional capital;

quarter-to-quarter variations in results of operations;

announcements of technological innovations by us or our potential competitors;

changes in or our failure to meet the expectations of securities analysts;

new products offered by us or our competitors;

announcements of strategic relationships or strategic partnerships;

future sales of common stock, or securities convertible into or exercisable for common stock;

adverse judgments or settlements obligating us to pay damages;

future issuances of common stock in connection with acquisitions or other transactions;

acts of war, terrorism, or natural disasters;

industry, domestic and international market and economic conditions, including the global macroeconomic downturn over the last three years and related sovereign debt issues in certain parts of the world;

low trading volume in our stock;

developments relating to patents or property rights;

government regulatory changes; or

other events or factors that may be beyond our control.

In addition, the securities markets in general have experienced extreme price and trading volume volatility in the past. The trading prices of securities of many companies at our stage of growth have fluctuated broadly, often for reasons unrelated to the operating performance of the specific companies. These general market and industry factors may adversely affect the trading price of our common stock, regardless of our actual operating performance. If our stock price is volatile, we could face securities class action litigation, which could result in substantial costs and a diversion of management's attention and resources and could cause our stock price to fall.

**Future sales of our common stock could depress our stock price.**

Sales of a large number of shares of our common stock, or the availability of a large number of shares for sale, could adversely affect the market price of our common stock and could impair our ability to raise funds in additional stock offerings. In the event that we propose to register additional shares of common stock under the Securities Act of 1933 for our own account, certain shareholders are entitled to receive notice of that registration and to include their shares in the registration, subject to limitations described in the agreements granting these rights.

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**A limited public trading market exists for our common stock, which makes it more difficult for our shareholders to sell their common stock in the public markets.**

Our common stock is currently traded under the symbol “LQMT” and currently trades at a low volume, based on quotations on the “Over-the-Counter” exchanges, meaning that the number of persons interested in purchasing our common stock at or near bid prices at any given time may be relatively small or non-existent. This situation is attributable to a number of factors, including the fact that we are a small company which is still relatively unknown to stock analysts, stock brokers, institutional investors, and others in the investment community that generate or influence sales volume, and that even if we came to the attention of such persons, they tend to be risk-averse and might be reluctant to follow an unproven company such as ours or purchase or recommend the purchase of our stock until such time as we became more viable. Additionally, many brokerage firms may not be willing to effect transactions in our securities. As a consequence, there may be periods of several days or more when trading activity in our stock is minimal or non-existent, as compared to a seasoned issuer which has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot give you any assurance that a broader or more active public trading market for our common stock will develop or be sustained, or that trading levels will be sustained.

**We have never paid dividends on our common stock, and we do not anticipate paying any cash dividends in the foreseeable future.**

We have paid no cash dividends on our common stock to date. We currently intend to retain our future earnings, if any, to fund the development and growth of our businesses, and we do not anticipate paying any cash dividends on our capital stock for the foreseeable future. In addition, the terms of existing or any future debts may preclude us from paying dividends on our stock. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future for our common shareholders.

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

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

**Antitakeover provisions of our certificate of incorporation and bylaws and provisions of applicable corporate law could delay or prevent a change of control that you may favor.**

Provisions in our certificate of incorporation, our bylaws, and Delaware law could make it more difficult for a third party to acquire us, even if doing so would be beneficial to our shareholders. These provisions could discourage potential takeover attempts and could adversely affect the market price of our shares. Because of these provisions, you might not be able to receive a premium on your investment in such a transaction. These provisions:

authorize our board of directors, without shareholder approval, to issue up to 10,000,000 shares of “blank check” preferred stock that could be issued by our board of directors to increase the number of outstanding shares and prevent a takeover attempt;

limit shareholders’ ability to call a special meeting of our shareholders; and

establish advance notice requirements to nominate directors for election to our board of directors or to propose matters that can be acted on by shareholders at shareholder meetings.

The provisions described above, as well as other provisions in our certificate of incorporation, our bylaws, and Delaware law could delay or make more difficult transactions involving a change in control of us or our management.

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**We rely extensively on information technology in our operations, and any material failure, inadequacy, interruption, or security breach of that technology could have a material adverse impact on our business.**

We rely extensively on information technology systems across our operations, including reporting results of operations, collection and storage of personal data of customers, employees and other stakeholders, and various other processes and transactions. Some of these systems are managed by third-party service providers. We use third-party technology and systems for a variety of reasons, including, without limitation, encryption and authentication technology, employee email, content delivery to customers, back-office support, and other functions. Failure to follow applicable regulations related to those activities, or to prevent or mitigate data loss or other security breaches, including breaches of our business partners' technology and systems could expose us and/or our customers and vendors to a risk of loss or misuse of such information, which could adversely affect our operating results, result in regulatory enforcement, other litigation and potential liability, and otherwise harm our business. Our ability to effectively manage our business and coordinate the production, distribution, and sale of our products depends significantly on the reliability and capacity of these systems and third-party service providers. Although we have developed systems and processes that are designed to protect customer information and prevent data loss and other security breaches, including systems and processes designed to reduce the impact of a security breach at a third party provider, such measures cannot provide absolute security.

We have exposure to similar security risks faced by other companies that have data stored on their information technology systems. To our knowledge, we have not experienced any material breach of our cybersecurity systems. If we or our third-party service providers systems fail to operate effectively or are damaged, destroyed, or shut down, or there are problems with transitioning to upgraded or replacement systems, or there are security breaches in these systems, any of the aforementioned could occur as a result of natural disasters, software or equipment failures, telecommunications failures, loss or theft of equipment, acts of terrorism, circumvention of security systems, or other cyber-attacks, including denial-of-service attacks, we could experience delays or decreases in product sales, and reduced efficiency of our operations. Additionally, any of these events could lead to violations of privacy laws, loss of customers, or loss, misappropriation or corruption of confidential information, trade secrets or data, which could expose us to potential litigation, regulatory actions, sanctions or other statutory penalties, any or all of which could adversely affect its business, and cause it to incur significant losses and remediation costs.

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**Item 1B. Unresolved Staff Comments**

None.

**Item 2. Properties**

Our principal executive office and principal research and development offices are located in Lake Forest, California and consist of approximately 41,000 square feet. We purchased the facility in February of 2017.

We currently expect that the foregoing facility will meet our anticipated manufacturing, research, warehousing, and administrative needs for the foreseeable future.

**Item 3. Legal Proceedings**

None.

**Item 4. Mine Safety Disclosures**

Not Applicable.

Table of Contents**PART II****Item 5. Market for Registrant’s Common Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities**

Our common stock is currently quoted on the “OTCQB Venture Marketplace” under the symbol “LQMT.” On March 1, 2019, the last reported sales price of our common stock was \$0.17 per share. As of March 1, 2019, we had 209 active record holders of our common stock.

The following table sets forth, on a per share basis, the range of high and low bid information for the shares of our common stock for each full quarterly period within the two most recent fiscal years and any subsequent interim period for which financial statements are included, as reported by the “OTCQB Venture Marketplace.” These quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

<b>2018</b>	<b>High</b>	<b>Low</b>
Fourth Quarter	\$0.20	\$0.10
Third Quarter	\$0.26	\$0.16
Second Quarter	\$0.29	\$0.23
First Quarter	\$0.26	\$0.20
<b>2017</b>	<b>High</b>	<b>Low</b>
Fourth Quarter	\$0.42	\$0.19
Third Quarter	\$0.44	\$0.27
Second Quarter	\$0.32	\$0.19
First Quarter	\$0.25	\$0.18

We have never paid a cash dividend on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future, and we plan to retain our earnings to finance our operations and future growth.



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**Stock Price Performance**

The stock price performance graph below compares the cumulative total return of our common stock against the cumulative total return of the Standard & Poor's Small Cap 600 NASDAQ U.S. index and the Russell 2000 ® index for the past five fiscal years. The graph indicates a measurement point of December 31, 2013, and assumes a \$100 investment on such date in our common stock, the Standard & Poor's Small Cap 600 and the Russell 2000 ® indices. With respect to the payment of dividends, the Company has not paid any dividends on its common stock, but the Standard & Poor's Small Cap 600 and the Russell 2000 ® indices assume that all dividends were reinvested. The stock price performance graph set forth shall not be deemed "soliciting material" or to be "filed" with the SEC, and will not be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the Company specifically incorporates this graph by reference into such a filing.

Table of Contents**Item 6. Selected Financial Data**

The following selected financial data insofar as it relates to the years ended December 31, 2018, 2017, 2016, 2015, and 2014 has been derived from our audited financial statements. The information that follows should be read in conjunction with the audited consolidated financial statements and notes thereto for the period ended December 31, 2018 included in Part IV of this Form 10-K. See also Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations".

*(\$ in thousands, except for per share data)*

	<b>Year Ended December 31,</b>				
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Statement of Operations Data:					
Total revenue	\$532	\$321	\$480	\$125	\$603
Net loss and comprehensive loss	\$(7,434)	\$(8,690)	\$(18,752)	\$(7,317)	\$(6,558)
Net loss and comprehensive loss applicable to Liquidmetal Technologies shareholders	\$(7,433)	\$(8,687)	\$(18,744)	\$(7,309)	\$(6,546)
Per Share:					
Net loss- basic	\$(0.01)	\$(0.01)	\$(0.03)	\$(0.02)	\$(0.01)
Net loss- diluted	\$(0.01)	\$(0.01)	\$(0.03)	\$(0.02)	\$(0.01)
Weighted-average common shares outstanding (basic)	910,546,059	897,273,890	640,157,919	470,955,041	441,439,018
Weighted-average common shares outstanding (diluted)	910,546,059	897,273,890	640,157,919	470,955,041	441,439,018

	<b>Year Ended December 31,</b>				
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Balance Sheet Data:					
Current assets	\$35,748	\$42,188	\$59,698	\$5,302	\$10,466
Total assets	\$47,851	\$55,075	\$61,367	\$7,273	\$12,284
Current liabilities	\$554	\$464	\$3,638	\$1,974	\$860
Total liabilities	\$2,335	\$3,512	\$6,541	\$2,889	\$3,721
Common stock	\$914	\$909	\$886	\$477	\$464
Accumulated deficit	\$(252,809)	\$(245,376)	\$(236,689)	\$(217,945)	\$(210,636)
Shareholders' equity (deficit)	\$45,516	\$51,563	\$54,826	\$4,384	\$8,563

Common shares issued and outstanding have increased from 464,482,219 as of December 31, 2014 to 914,206,832 as of December 31, 2018. The increase is primarily due to the issuance of shares to investors in private placements, the issuance of shares to investors upon the settlement of convertible debt, and the issuance of shares to employees.

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

*This management’s discussion and analysis should be read in conjunction with the consolidated financial statements and notes included elsewhere in this report on Form 10-K.*

*This management’s discussion and analysis, as well as other sections of this report on Form 10-K, may contain “forward-looking statements” that involve risks and uncertainties, including statements regarding our plans, future events, objectives, expectations, estimates, forecasts, assumptions or projections. Any statement that is not a statement of historical fact is a forward-looking statement, and in some cases, words such as “believe,” “estimate,” “project,” “expect,” “intend,” “may,” “anticipate,” “plan,” “seek,” and similar expressions identify forward-looking statements. These statements involve risks and uncertainties that could cause actual outcomes and results to differ materially from the anticipated outcomes or results, and undue reliance should not be placed on these statements. These risks and uncertainties include, but are not limited to, the matters discussed under the caption “Risk Factors” in Item 1A of this report and other risks and uncertainties discussed in filings made with the Securities and Exchange Commission (including risks described in subsequent reports on Form 10-Q, Form 10-K, Form 8-K, and other filings). Liquidmetal Technologies, Inc. disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.*

**OVERVIEW**

We are a materials technology company that develops and commercializes products made from amorphous alloys. Our Liquidmetal® family of alloys consists of a variety of proprietary bulk alloys and composites that utilize the advantages offered by amorphous alloy technology. We design, develop and sell custom products and parts from bulk amorphous alloys to customers in various industries. We also partner with third-party manufacturers and licensees to develop and commercialize Liquidmetal alloy products.

Amorphous alloys are, in general, unique materials that are distinguished by their ability to retain a random atomic structure when they solidify, in contrast to the crystalline atomic structure that forms in other metals and alloys when they solidify. Liquidmetal alloys are proprietary amorphous alloys that possess a combination of performance, processing, and potential cost advantages that we believe will make them preferable to other materials in a variety of applications. The amorphous atomic structure of bulk alloys enables them to overcome certain performance limitations caused by inherent weaknesses in crystalline atomic structures, thus facilitating performance and processing characteristics superior in many ways to those of their crystalline counterparts. Our alloys and the molding technologies we employ result in components that exhibit exceptional dimensional control and repeatability that rivals precision machining, excellent corrosion resistance, brilliant surface finish, high strength, high hardness, high elastic limit, alloys that are non-magnetic, and the ability to form complex shapes common to the injection molding of plastics. All of these characteristics are achievable from the molding process, so design engineers do not have to select specific alloys to achieve one or more of the characteristics as is the case with crystalline materials. We believe these

advantages could result in Liquidmetal alloys supplanting high-performance alloys, such as titanium and stainless steel, and other incumbent materials in a wide variety of applications. Moreover, we believe these advantages could enable the introduction of entirely new products and applications that are not possible or commercially viable with other materials.

Our revenues are derived from i) selling our bulk amorphous alloy custom products and parts for applications which include, but are not limited to, non-consumer electronic devices, medical products, automotive components, and sports and leisure goods; ii) selling tooling and prototype parts such as demonstration parts and test samples for customers with products in development; and iii) product licensing and royalty revenue. We expect that these sources of revenue will continue to significantly change the character of our revenue mix as operations are scaled.

Our cost of sales consists primarily of the costs of manufacturing, which include raw alloy and internal labor required to operate our on-site production cells. Selling, general, and administrative expenses currently consist primarily of salaries and related benefits, travel, consulting and professional fees, depreciation and amortization, insurance, office and administrative expenses, and other expenses related to our operations.

Research and development expenses represent salaries, related benefits expenses, consulting and contract services, expenses incurred for the design and testing of new processing methods, expenses for the development of sample and prototype products, and other expenses related to the research and development of Liquidmetal bulk alloys. Costs associated with research and development activities are expensed as incurred. We plan to enhance our competitive position by improving our existing technologies and developing advances in amorphous alloy technologies. We believe that our research and development efforts will focus on the discovery of new alloy compositions, the development of improved processing technology, and the identification of new applications for our alloys.

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**SIGNIFICANT TRANSACTIONS**

Manufacturing Facility Purchase

On February 16, 2017, we purchased a 41,000 square foot manufacturing facility located in Lake Forest, CA, where operations commenced during July 2017. The purchase price for the property was \$7,818,000.

2016 Purchase Agreement

On March 10, 2016, we entered into a Securities Purchase Agreement (the “2016 Purchase Agreement”) with Liquidmetal Technology Limited, a Hong Kong company (the “Investor”), which is 100% owned by our Chairman and CEO, Professor Lugee Li (“Professor Li”). The 2016 Purchase Agreement provided for the purchase by the Investor of a total of 405,000,000 shares of our common stock for an aggregate purchase price of \$63,400,000. The transaction occurred in multiple closings, with the Investor having purchased 105,000,000 shares at a purchase price of \$8,400,000 (or \$0.08 per share) at the initial closing on March 10, 2016 and the remaining 200,000,000 shares at \$0.15 per share and 100,000,000 shares at \$0.25 per share for an aggregate purchase price of \$55,000,000 on October 26, 2016.

In addition to the shares issuable under the 2016 Purchase Agreement, we issued to the Investor a warrant to acquire 10,066,809 shares of common stock (of which 2,609,913 of the warrant shares vested on March 10, 2016 and the remaining 7,456,896 warrant shares vested on October 26, 2016 at an exercise price of \$0.07 per share). The warrant will expire on the tenth anniversary of its issuance date.

Further, the 2016 Purchase Agreement provided that the Investor would have the right to designate three members of our board of directors, with one such member serving as Chairman. The 2016 Purchase Agreement also provided that, with certain limited exceptions, if we were to issue any shares of common stock at any time through the fifth anniversary of the 2016 Purchase Agreement, the Investor will have a preemptive right to subscribe for and to purchase at the same price per share (or at market price, in the case of issuance of shares pursuant to stock options) the number of shares necessary to maintain its ownership percentage of our issued shares of common stock.

Eontec License Agreement

On March 10, 2016, in connection with the 2016 Purchase Agreement, we entered into a Parallel License Agreement (the “License Agreement”) with DongGuan Eontec Co., Ltd., a Hong Kong corporation (“Eontec”) pursuant to which we each entered into a cross-license of our respective technologies.

The License Agreement provides for the cross-license of certain patents, technical information, and trademarks between us and Eontec. In particular, we granted to Eontec a paid-up, royalty-free, perpetual license to our patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of North America and Europe, and Eontec granted to us a paid-up, royalty-free, perpetual license to Eontec’s patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of specified countries in Asia. The license granted by us to Eontec is exclusive (including to the exclusion of us) in the countries of Brunei, Cambodia, China (P.R.C and R.O.C.), East Timor, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, South Korea, Thailand and Vietnam. The license granted by Eontec to us is exclusive (including to the exclusion of Eontec) in North America and Europe. The cross-licenses are non-exclusive in geographic areas outside of the foregoing exclusive territories.

Beyond the License Agreement, we collaborate with Eontec to accelerate the commercialization of amorphous alloy technology. This includes but is not limited to developing technologies to reduce the cost of amorphous alloys, working on die cast machine technology platforms to pursue broader markets, sharing knowledge to broaden our intellectual property portfolio, and utilizing Eontec’s volume production capabilities as a third party contract manufacturer.

During March 2017, we signed contracts with Eontec to purchase two hot-crucible amorphous metal molding machines (“Machines”) at a total purchase price of \$780,000. The Machines were delivered to our new manufacturing facility located in Lake Forest, CA in April 2017 and were operational during the fourth quarter of 2017.

#### 2014 Purchase Agreement

On August 20, 2014, we entered into a common stock purchase agreement (“2014 Purchase Agreement”) with Aspire Capital Fund LLC (“Aspire Capital”), which provided that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital would be committed to purchase up to an aggregate of \$30,000,000 worth of our common stock, \$0.001 par value, over the 36-month term of the 2014 Purchase Agreement.

On March 9, 2016, we terminated the 2014 Purchase Agreement. As of the date of termination, we had received an aggregate of \$1,568,000 under the 2014 Purchase Agreement through the issuance of 12,500,000 shares of our common stock at a weighted average price of \$0.13 per share.





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### Line of Credit Facility

In February 2015, we entered into a \$2,000,000 line of credit facility, with a fixed interest rate of 2.1%, which originally matured on February 13, 2016. The facility was extended through August 25, 2016, with reductions in available borrowings and associated collateral requirements to \$1,000,000. On August 26, 2016, we fully repaid all outstanding principal and accrued interest balances due under the facility. As of such date, all collateral to the facility was released. Interest expense applicable to these borrowings was \$0 for the year ended December 31, 2018, \$0 for the year ended December 31, 2017, and \$9 for the year ended December 31, 2016.

### July 2012 Private Placement

On July 2, 2012, we entered into a private placement transaction (the “July 2012 Private Placement”) pursuant to which we issued \$12,000,000 in principal amount of senior convertible notes that were due on September 1, 2013. The notes were convertible into shares of our common stock at a conversion price of \$0.352 per share. The notes bore interest at 8% per annum and were payable in twelve equal monthly installments of principal and interest beginning on October 1, 2012. As of July 17, 2013, we had issued 163,641,547 shares of common stock in full satisfaction of the notes (see note 14 in the accompanying footnotes to the consolidated financial statements).

As a part of the July 2012 Private Placement, we issued warrants to purchase 18,750,000 shares of our common stock at an exercise price of \$0.384 per share (reduced to \$0.17 per share under the anti-dilution and price reset provisions of the warrants; see note 11 in the accompanying footnotes to the consolidated financial statements).

### Apple License Transaction

On August 5, 2010, we entered into a license transaction with Apple Inc. (“Apple”) pursuant to which (i) we contributed substantially all of our intellectual property assets to a newly organized special-purpose, wholly-owned subsidiary, called Crucible Intellectual Property, LLC (“CIP”), (ii) CIP granted to Apple a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in the field of consumer electronic products, as defined in the license agreement, in exchange for a license fee, and (iii) CIP granted back to us a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in all other fields of use.

Under the agreements relating to the license transaction with Apple, we were obligated to contribute, to CIP, all intellectual property that we developed through February 2012. Subsequently, this obligation was extended to apply to all intellectual property developed through February 2016. We are also obligated to maintain certain limited liability

company formalities with respect to CIP at all times after the closing of the license transaction.

#### Visser Precision Cast, LLC License Agreement

On June 1, 2012, we entered into a Master Transaction Agreement (the “Visser MTA”) with Visser Precision Cast, LLC (“Visser”) relating to a strategic transaction for manufacturing services and financing. On May 20, 2014, we and Visser entered into a settlement agreement significantly amending the Visser MTA, whereby we granted to Visser a fully paid-up, royalty-free, irrevocable, perpetual, worldwide, non-transferable, nonexclusive sublicense to all of our intellectual property developed on or prior to May 20, 2014 (the “Effective Date”). Visser does not have any rights, now or in the future, to our intellectual property developed after the Effective Date. The license to our intellectual property developed on or prior to the Effective Date does not include the right to use the “Liquidmetal” trademark or any of our other trademarks, except in certain defined situations, as set forth in the amended and restated agreement.

In addition, the settlement amended and restated the two warrants we issued to Visser in June 2012 to purchase 15,000,000 shares of our common stock at an exercise price of \$0.22 per share. The amended and restated warrant agreement includes the effect of anti-dilution adjustments and is exercisable for 21,317,094 shares at an exercise price \$0.16 per share under the anti-dilution provisions of the warrants (see Note 11 in the accompanying footnotes to the consolidated financial statements).

#### Other License Transactions

On January 31, 2012, we entered into a Supply and License Agreement for a five year term with Engel Austria GmbH (“Engel”) whereby Engel was granted a non-exclusive license to manufacture and sell injection molding machines to our licensees. Since that time, we and Engel have agreed on an injection molding machine configuration that can be commercially supplied and supported by Engel. On December 6, 2013, the companies entered into an Exclusivity Agreement for a ten year term whereby we agreed, with certain exceptions and limitations, that we and our licensees would purchase amorphous alloy injection molding machines exclusively from Engel in exchange for certain royalties to be paid by Engel to us based on a percentage of the net sales price of such injection molding machines.

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Our Liquidmetal Golf subsidiary has the exclusive right and license to utilize our Liquidmetal alloy technology for purposes of golf equipment applications. This right and license is set forth in an intercompany license agreement between Liquidmetal Technologies and Liquidmetal Golf. This license agreement provides that Liquidmetal Golf has a perpetual and exclusive license to use Liquidmetal alloy technology for the purpose of manufacturing, marketing, and selling golf club components and other products used in the sport of golf. We own 79% of the outstanding common stock of Liquidmetal Golf.

In June 2003, we entered into an exclusive license agreement with LLPG, Inc. (“LLPG”). Under the terms of the agreement, LLPG has the exclusive right to commercialize Liquidmetal alloys, particularly precious-metal based compositions, in jewelry and high-end luxury product markets. We, in turn, will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by LLPG. The exclusive license agreement with LLPG expires on December 31, 2021.

In March 2009, we entered into a license agreement with Swatch Group, Ltd. (“Swatch”) under which Swatch was granted a non-exclusive license to our technology to produce and market watches and certain other luxury products. In March 2011, this license agreement was amended to grant Swatch exclusive rights as to watches and all third parties (including us), but non-exclusive as to Apple, and our license agreement with LLPG was simultaneously amended to exclude watches from LLPG’s rights. We will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by Swatch. The license agreement with Swatch will expire on the expiration date of the last licensed patent.

**RESULTS OF OPERATIONS**

	For the years ended December 31,					
	2018		2017		2016	
	in 000's	% of Revenue	in 000's	% of Revenue	in 000's	% of Revenue
<b>Revenue:</b>						
Products	\$484		\$255		\$453	
Licensing and royalties	48		66		27	
<b>Total revenue</b>	<b>532</b>		<b>321</b>		<b>480</b>	
Cost of sales	1,164	219 %	696	217 %	553	115 %
<b>Gross loss</b>	<b>(632 )</b>	<b>-119 %</b>	<b>(375 )</b>	<b>-117 %</b>	<b>(73 )</b>	<b>-15 %</b>
Selling, marketing, general and administrative	5,899	1109 %	6,265	1952 %	7,472	1557 %
Research and development	2,429	457 %	1,962	611 %	2,342	488 %
Total operating expense	8,328		8,227		9,814	

<b>Operating loss</b>	<b>(8,960)</b>	<b>(8,602)</b>	<b>(9,887 )</b>
Change in value of warrants, gain (loss)	1,267	(143 )	(4,117 )
Change in value of option liabilities, loss	-	-	(2,613 )
Loss on contract modification	-	-	(2,126 )
Interest expense	-	-	(9 )
Interest income	259	55	-
<b>Net loss</b>	<b>\$(7,434)</b>	<b>\$(8,690)</b>	<b>\$(18,752)</b>

*(a) Year Ended December 31, 2018 Compared to Year Ended December 31, 2017*

### **Revenue and operating expenses**

The revenue and operating expenses category of statements of operations items represent those items that pertain to our core operations in the bulk alloy manufacturing and licensing business as follows:

*Revenue.* Total revenue increased by \$211 thousand to \$532 thousand for the year ended December 31, 2018 from \$321 thousand for the year ended December 31, 2017. The increase for the period was attributable to a continued focus on small scale pre-production orders, and qualifying multi-cavity production tools, in an effort to build a significant, recurring, funnel of production business.

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*Cost of sales.* Cost of sales was \$1,164 thousand, or 219% of total revenue, for the year ended December 31, 2018, an increase from \$696 thousand, or 217% of total revenue, for the year ended December 31, 2017. The increase in our cost of sales for the year ended December 31, 2018 was primarily attributable to additional markdowns on raw materials inventory, totaling \$642,000 for the year ended December 31, 2018, as compared to \$279,000 for the year ended December 31, 2017. The cost to manufacture products and components from our bulk amorphous alloys is variable and differs based on the unique design of each product. Given the continued development and refinement of our manufacturing efforts during the year ended December 31, 2018, our cost of sales as a percentage of products revenue is not necessarily representative of our future cost percentages and is expected to show continued improvement over time with increases in volume, lower costs for raw materials, and continuous refinements to our internal processes. When we begin increasing our products revenues with shipments of routine, commercial products and components through our manufacturing facility and/or third party contract manufacturers, we expect to lower raw material and consumable costs through volume purchases, reduced labor and fixed overhead burdens on end products, and have more stable and predictable cost of sales percentages on product sales.

*Gross loss.* Our gross profit (loss) increased by (\$257) thousand from \$(375) thousand as of December 31, 2017 to \$(632) thousand as of December 31, 2018. Our gross margin percentage decreased from (117)% as of December 31, 2017 to (119)% as of December 31, 2018. As discussed above under “Cost of sales”, inventory markdowns and early pre-production orders are resulting in a higher cost mix, relative to revenue, than would otherwise be incurred in an on-site production environment, with higher volumes and more established operating processes, or through contract manufacturers. As such, our gross profit percentages have fluctuated and may continue to fluctuate based on volume and quoted production prices per unit and may not be representative of our future business. If and when we begin increasing our products revenues with shipments of routine, commercial products and components through future orders to our manufacturing facility and/or third party contract manufacturers, we expect our gross profit percentages to stabilize, increase and be more predictable.

*Selling, marketing, general, and administrative expenses.* Selling, marketing, general, and administrative expenses decreased by \$0.4 million to \$5.9 million, or 1109% of revenue, for the year ended December 31, 2018 from \$6.3 million, or 1952% of revenue, for the year ended December 31, 2017. The decrease in expense from the prior year was due to lower costs associated with employee compensation, specific overall reductions in stock-based compensation due to prior period headcount reductions.

*Research and development expenses.* Research and development expenses increased by \$467 thousand to \$2.4 million, or 457% of revenue, for the year ended December 31, 2018, from \$2.0 million, or 611% of revenue, for the year ended December 31, 2017. The increase in expense was mainly due to additional costs in qualifying new alloy compositions and tooling designs, with the goal of reducing input costs in the future. We continue to (i) perform research and development of new Liquidmetal alloys and related processing capabilities, (ii) develop new manufacturing techniques, and (iii) contract with consultants to advance the development of Liquidmetal alloys and related production processes.

*Operating loss.* Operating loss increased by \$0.4 million from \$8.6 million for the year ended December 31, 2017 to \$9.0 million for the year ended December 31, 2018. Fluctuations in our operating loss are primarily attributable to variations in operating expenses, as discussed above.

We continue to invest in our technology infrastructure to expedite the adoption of our technology, but we have experienced long sales lead times for customer adoption of our technology. Until that time when we can either (i) increase our revenues with shipments of routine, commercial products and parts through a combination of our manufacturing center or third party contract manufacturers or (ii) obtain significant licensing revenues, we expect to continue to have operating losses for the foreseeable future.

### **Non-operational expenses**

Our statement of operations contains various, significant items that are non-operational in nature. These categories of expenses may have significant gains and losses based on the volatility of our stock price as follows:

*Change in value of warrants, gain (loss).* The change in value of warrants was a non-cash gain of \$1,267 thousand for the year ended December 31, 2018, which resulted from periodic valuation adjustments for warrants issued in connection with the 2016 Purchase Agreement. The gain noted during the year ended December 31, 2018 compared to a loss of \$143 thousand during the year ended December 31, 2017 was primarily due to a decrease in our stock price during 2018 from \$0.23 as of December 31, 2017 to \$0.11 as of December 31, 2018. This upward trend was offset by the effect of current year exercises and reductions in other assumptions impacting the valuation model. Changes in the value of our warrants are non-cash and do not affect the core operations of our business.

*Interest income.* Interest income was \$259 thousand and \$55 for the years ended December 31, 2018 and 2017, respectively, from interest earned on cash deposits.

*Net loss.* Our annual net losses of \$7.4 million as of December 31, 2018 and \$8.7 million as of December 31, 2017 are reflective of operating expenses associated with our on-going business as well as non-operational expenses, discussed above, primarily related to losses in our warrant and option valuations, which are not reflective of our on-going business.

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*(b) Year Ended December 31, 2017 Compared to Year Ended December 31, 2016*

**Revenue and operating expenses**

The revenue and operating expenses category of statements of operations items represent those items that pertain to our core operations in the bulk alloy manufacturing and licensing business as follows:

*Revenue.* Total revenue decreased by \$159 thousand to \$321 thousand for the year ended December 31, 2017 from \$480 thousand for the year ended December 31, 2016. The decrease for the period was attributable to a continued focus on small scale pre-production orders in an effort to build a significant, recurring, funnel of production business.

*Cost of sales.* Cost of sales was \$696 thousand, or 217% of total revenue, for the year ended December 31, 2017, an increase from \$553 thousand, or 115% of total revenue, for the year ended December 31, 2016. The increase in our cost of sales for the year ended December 31, 2017 was primarily attributable to \$ 279 thousand in markdowns on raw materials inventory and future amounts to be received under firm purchase commitments, higher costs of production during 2017 as a result of the initial on-set of manufacturing efforts at our new facility, the scaling of internal processes, and higher inherent costs associated with designing and validating initial orders. The cost to manufacture products and components from our bulk amorphous alloys is variable and differs based on the unique design of each product. Given the continued development and refinement of our manufacturing efforts during the year ended December 31, 2017, our cost of sales as a percentage of products revenue is not necessarily representative of our future cost percentages and is expected to show continued improvement over time with increases in volume, lower costs for raw materials, and continuous refinements to our internal processes. When we begin increasing our products revenues with shipments of routine, commercial products and components through our manufacturing facility and/or third party contract manufacturers, we expect to lower raw material and consumable costs through volume purchases, reduced labor and fixed overhead burdens on end products, and have more stable and predictable cost of sales percentages on product sales.

*Gross loss.* Our gross profit (loss) decreased by \$302 thousand from \$(73) thousand as of December 31, 2016 to \$(375) thousand as of December 31, 2017. Our gross margin percentage decreased from (15)% as of December 31, 2016 to (117)% as of December 31, 2017. As discussed above under “Cost of sales”, early pre-production orders are resulting in a higher cost mix, relative to revenue, than would otherwise be incurred in an on-site production environment, with higher volumes and more established operating processes, or through contract manufacturers. As such, our gross profit percentages have fluctuated and may continue to fluctuate based on volume and quoted production prices per unit and may not be representative of our future business. If and when we begin increasing our products revenues with shipments of routine, commercial products and components through future orders to our manufacturing facility and/or third party contract manufacturers, we expect our gross profit percentages to stabilize, increase and be more predictable.

*Selling, marketing, general, and administrative expenses.* Selling, marketing, general, and administrative expenses decreased by \$1.2 million to \$6.3 million, or 1952% of revenue, for the year ended December 31, 2017 from \$7.5 million, or 1557% of revenue, for the year ended December 31, 2016. The decrease in expense from the prior was due to lower costs associated with employee compensation, inclusive of a \$0.6 reduction in incentive bonus accruals, a \$0.4 million reduction in stock based compensation, and a \$0.2 million reduction in salaries expense due to headcount reductions.

*Research and development expenses.* Research and development expenses decreased by \$0.4 million to \$2.0 million, or 611% of revenue, for the year ended December 31, 2017, from \$2.3 million, or 488% of revenue, for the year ended December 31, 2016. The decrease in expense was mainly due to a \$0.3 million reduction in incentive bonus accruals. We continue to (i) perform research and development of new Liquidmetal alloys and related processing capabilities, (ii) develop new manufacturing techniques, and (iii) contract with consultants to advance the development of Liquidmetal alloys and related production processes.

*Operating loss.* Operating loss decreased by \$1.3 million from \$9.9 million for the year ended December 31, 2016 to \$8.6 million for the year ended December 31, 2017. Fluctuations in our operating loss are primarily attributable to variations in operating expenses, as discussed above.

We continue to invest in our technology infrastructure to expedite the adoption of our technology, but we have experienced long sales lead times for customer adoption of our technology. Until that time when we can either (i) increase our revenues with shipments of routine, commercial products and parts through a combination of our manufacturing center or third party contract manufacturers or (ii) obtain significant licensing revenues, we expect to continue to have operating losses for the foreseeable future.



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**Non-operational expenses**

Our statement of operations contains various, significant items that are non-operational in nature. These categories of expenses may have significant gains and losses based on the volatility of our stock price as follows:

*Change in value of warrants, gain (loss).* The change in value of warrants was a non-cash loss of \$143 thousand for the year ended December 31, 2017, which resulted from periodic valuation adjustments for warrants issued in connection with the Visser MTA, the July 2012 Private Placement, and the 2016 Purchase Agreement. The loss noted during the year ended December 31, 2017 compared to a loss of \$4.1 million during the year ended December 31, 2016 was primarily due to an increase in our stock price during 2017 from \$0.21 as of December 31, 2016 to \$0.23 as of December 31, 2017. This upward trend was offset by the effect of current year exercises and reductions in other assumptions impacting the valuation model. Changes in the value of our warrants are non-cash and do not affect the core operations of our business.

*Change in value of option liabilities, loss.* The change in value of option liabilities was a non-cash loss of \$2.6 million for the year ended December 31, 2016. This compares to \$0 for the year ended December 31, 2017. These adjustments result from periodic valuation adjustments related to fluctuations in our stock price, and other inputs, for written call options issued in connection with the 2016 Purchase Agreement. Due to the reclassification of these liabilities to permanent equity in May 2016 there will not be a prospective earnings impact in future periods. Changes in the value of option liabilities are non-cash and do not affect the core operations of our business or liquidity. Similar transactions are not expected in future periods.

*Loss on contract modification.* On August 11, 2016, we and the Investor amended the 2016 Purchase Agreement to extend the deadline for the Investor's purchase of 300,000,000 additional shares of our common stock from the original deadline of August 17, 2016 to a new deadline of December 31, 2016. As a result of such amendment, we incurred an additional \$2.1 million of expense relating to the extension of the exercise term for the written call options under the 2016 Purchase Agreement during the year ended December 31, 2016. Such expense was recorded directly to additional paid in capital. No such amounts were recorded during the year ended December 31, 2017.

*Interest expense.* Interest expense relates to interest incurred under our line of credit agreement. Interest expense was \$0 and \$9 thousand for the years ended December 31, 2017 and 2016, respectively.

*Interest income.* Interest income was \$55 thousand and \$0 for the years ended December 31, 2017 and 2016, respectively, from interest earned on cash deposits.

*Net loss.* Our annual net losses of \$8.7 million as of December 31, 2017 and \$18.8 million as of December 31, 2016 are reflective of operating expenses associated with our on-going business as well as non-operational expenses, discussed above, primarily related to losses in our warrant and option valuations, which are not reflective of our on-going business.

## **LIQUIDITY AND CAPITAL RESOURCES**

### **Cash used in operating activities**

Cash used in operating activities totaled \$6.3 million for the year ended December 31, 2018, \$7.7 million for the year ended December 31, 2017, and \$7.8 million for the year ended December 31, 2016. The cash was primarily used to fund operating expenses related to our business and product development efforts.

### **Cash used in investing activities**

Cash used in investing activities totaled \$(0.3) million for the year ended December 31, 2018, \$(11.9) million for the year ended December 31, 2017, and \$(0.2) million for the year ended December 31, 2016. Annual amounts primarily consist of capital expenditures to support our manufacturing efforts including the purchase of our new manufacturing facility and additional production equipment

### **Cash provided by financing activities**

Cash provided by financing activities totaled \$0.5 million for the year ended December 31, 2018, \$2.0 million for the year ended December 31, 2017, and \$62.2 million for the year ended December 31, 2016. Cash provided by financing activities for the year ended December 31, 2018 primarily consist of proceeds received from the exercise of stock options. Cash provided by financing activities for the year ended December 31, 2017 primarily consist of proceeds received from the exercise of warrants and stock options. The 2016 results include \$62.7 million of net proceeds from the issuance of common stock under the 2016 Purchase Agreement, offset by \$700 thousand in repayments of short-term debt under the line of credit facility.

### **Financing arrangements and outlook**

During 2016, we raised a total of \$62.7 million through the issuance of 405,000,000 shares of our common stock in multiple closings under the 2016 Purchase Agreement. The Company has a relatively limited history of producing bulk amorphous alloy products and components on a mass-production scale. Furthermore, the ability of future contract manufacturers to produce the Company's products in desired quantities and at commercially reasonable prices is uncertain and is dependent on a variety of factors that are outside of the Company's control, including the nature and design of the component, the customer's specifications, and required delivery timelines. These factors have required that the Company engage in equity sales under various stock purchase agreements to support its operations and strategic initiatives. Uncertainty as to the outcome of these factors has previously raised substantial doubt about the Company's ability to continue as a going concern. As a result of the funding under the 2016 Purchase Agreement, the Company anticipates that its current capital resources, when considering expected losses from operations, will be sufficient to fund the Company's operations for the foreseeable future.

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**OFF-BALANCE SHEET ARRANGEMENTS**

An off-balance sheet arrangement is any transaction, agreement or other contractual arrangement involving an unconsolidated entity under which a company has (1) made guarantees, (2) a retained or a contingent interest in transferred assets, (3) an obligation under derivative instruments classified as equity, or (4) any obligation arising out of a material variable interest in an unconsolidated entity that provides financing, liquidity, market risk or credit risk support to our company, or that engages in leasing, hedging, or research and development arrangements with our company. As of December 31, 2018, the Company did not have any off-balance sheet arrangements.

**CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect 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. These estimates and assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. Actual results could differ materially from these estimates under different assumptions or conditions.

We believe that the following accounting policies are the most critical to our consolidated financial statements since these policies require significant judgment or involve complex estimates that are important to the portrayal of our financial condition and operating results:

• We recognize revenue pursuant to applicable accounting standards including FASB ASC Topic 606 (“ASC 606”), Revenue from Contracts with Customers. ASC 606 summarizes certain points in applying generally accepted accounting principles to revenue recognition in financial statements and provides guidance on revenue recognition issues in the absence of authoritative literature addressing a specific arrangement or a specific industry.

Our revenue recognition policy complies with the requirements of ASC 606. As a majority of our sales revenue continues to be recognized when products are shipped from our manufacturing facility, and there was no change in the recognition model historically applied to active license and royalty contracts under the new revenue standard, there was no adjustment to the opening balance of retained earnings. The impact to our results of operations is not material, on an on-going basis, because the analysis of our contracts under the new revenue standard supports a recognition model consistent with our previous revenue recognition model. Revenue on the majority of our contracts will continue to be recognized over time because of the continuous transfer of control to the customer.

Products- Product revenues are primarily generated from the sale and prototyping of molds and bulk alloy products. Revenue is recognized when i) persuasive evidence of an arrangement exists, ii) delivery has occurred, iii) the sales price is fixed or determinable, iv) collection is probable and v) all obligations have been substantially performed pursuant to the terms of the arrangement. When we receive consideration, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, we record deferred revenue, which represents a contract liability. We will recognize deferred revenue as products revenue after it has transferred control of the goods or services to the customer and all revenue recognition criteria are met. Such amounts are not expected to be material on an ongoing basis.

Licensing and royalties- License revenue arrangements in general provide for the grant of an exclusive or non-exclusive right to manufacture and/or sell products covered by patented technologies owned or controlled by us. The intellectual property rights granted may be perpetual in nature, extending until the expiration of the related patents, or can be granted for a defined period of time. Licensing revenues that are one-time fees upon the granting of the license are recognized when i) the license term begins in a manner consistent with the nature of the transaction and the earnings process is complete, ii) when collectability is reasonably assured or upon receipt of an upfront fee, and iii) when all other revenue recognition criteria have been met. Pursuant to the terms of these agreements, we have no further obligation with respect to the grant of the license. Licensing revenues that are related to royalties are recognized as the royalties are earned over the related period.

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Practical Expedients and Exemptions- We generally expense sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within selling, marketing, general and administrative expenses. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount for which it has the right to invoice for services performed.

We value our long-lived assets at the lower of cost or fair market value. We review long-lived assets to be held and used in operations for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may be impaired. These evaluations may result from significant decreases in the market price of an asset, a significant adverse change in the extent or manner in which an asset is being used in its physical condition, a significant adverse change in legal factors or in the business climate that could affect the value of an asset, as well as economic or operational analyses. An impairment loss is recognized when the estimated fair value of the assets is less than the carrying value of the assets. Based on our review of both qualitative and quantitative factors, inclusive of forecasted cash flows from the use of long-lived assets and external valuation inputs, no impairment losses were recorded during the years ended December 31, 2018, 2017 and 2016, respectively.

We record valuation allowances to reduce our deferred tax assets to the amounts deemed more likely than not of being realized. While we consider taxable income in assessing the need for a valuation allowance, in the event we determine we would be able to realize our deferred tax assets in the future in excess of the net recorded amount, an adjustment would be made and income increased in the period of such determination. Likewise, in the event we determine we would not be able to realize all or part of our deferred tax assets in the future, an adjustment would be made and charged to income in the period of such determination.

We account for our outstanding warrants as a derivative in accordance with FASB ASC 815-10, *Derivatives and Hedging*, and FASB ASC 815-40, *Contracts in Entity's Own Equity*. The fair value of warrants is measured at each period end using the Black-Scholes pricing model and changes in fair value during the period are reported in our earnings. The Black-Scholes pricing model requires estimates of expected volatility, expected dividends, the risk-free rate, and the expected term of the warrant. If any of the assumptions used in the valuation model change significantly, changes in the fair value of warrants may differ materially in the future from that recorded in the current period.

We account for share-based compensation in accordance with the fair value recognition provisions of FASB ASC Topic 718, *Share-based Payment*, which requires all share-based payments to employees, including grants of employee stock options, to be recognized in the consolidated financial statements based on their fair values. The fair value of stock options is calculated by using the Black-Scholes option pricing formula that requires estimates for expected volatility, expected dividends, the risk-free interest rate and the term of the option. If any of the assumptions used in the Black-Scholes model change significantly, share-based compensation expense may differ materially in the future from that recorded in the current period.

Our inventory is stated at the lower of cost or estimated net realizable value. The cost of inventories is determined on the basis of weighted-average cost. We perform an analysis of our inventory balances at least quarterly to determine if the carrying amount of inventories exceeds their net realizable value. The analysis of estimated net realizable value is based on customer orders, market trends and historical pricing. If the carrying amount exceeds the estimated net realizable value, the carrying amount is reduced to the estimated net realizable value.

## RECENT ACCOUNTING PRONOUNCEMENTS

### *Leases*

In February 2016, the FASB issued an accounting standards update which modifies the accounting for leasing arrangements, particularly those arrangements classified as operating leases. This update will require entities to recognize the assets and liabilities arising from operating leases on the balance sheet. This guidance is effective for fiscal and interim periods beginning after December 15, 2018 and is required to be applied retrospectively to all leasing arrangements. The adoption of this guidance is not expected to have a significant impact on the Company's consolidated financial statements.

### *Liability Classified Warrants*

In July 2017, the FASB issued an accounting standards update which modifies the requirements for the classification of certain financial instruments with down round features as equity versus liabilities. The guidance will allow for financial instruments, previously required to be presented as liabilities due to the presence of down round features, to be presented as equity upon meeting other criteria. This guidance is effective for fiscal and interim periods beginning after December 15, 2018 and is required to be applied retrospectively to all financial instruments with down round features. The requirements applicable to the revised standard will be adopted using the full retrospective method during the first quarter of the year ending December 31, 2019. The Company expects the adoption of this guidance will have a significant impact on the consolidated balance sheet and statement of operations, particularly allocations between long term liabilities and the components of shareholders equity.

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Other recent accounting pronouncements issued by the FASB (including its Emerging Issues Task Force), the AICPA and the SEC did not or are not believed by management to have a material impact on the Company's present or future consolidated financial statements.

**CONTRACTUAL OBLIGATIONS**

	<b>Payments Due by Period</b>				
	<b>Total</b>	<b>Less than 1 year</b>	<b>1-3 years</b>	<b>4-5 years</b>	<b>After 5 years</b>
<i>(in \$ thousands)</i>					
Capital Improvements	\$253,000	\$253,000	\$ -	\$ -	\$ -
	\$253,000	\$253,000	\$ -	\$ -	\$ -



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**Item 7A. Quantitative and Qualitative Disclosures about Market Risk**

None.

**Item 8. Financial Statements and Supplementary Data**

The financial statements and supplementary data required by this item can be found beginning on page 62 of this Annual Report on Form 10-K.

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

None.

**Item 9A. Controls and Procedures**

Evaluation of Disclosure Controls and Procedures. Under the supervision and with the participation of our management, including our Chief Executive Officer (Principal Executive Officer) and Vice President of Finance (Principal Financial Officer), we conducted an evaluation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15(d)-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Based on this evaluation, our Chief Executive Officer (Principal Executive Officer) and Vice President of Finance (Principal Financial Officer) concluded that our disclosure controls and procedures were effective as of December 31, 2018 (the end of the period covered by this report).

Changes in Internal Controls. There were no changes in our internal control over financial reporting (as that term is defined in Rules 13a-15(f) or 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management’s Report on Internal Control over Financial Reporting. The Company’s management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting

and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Company's assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States, and that the Company's receipts and expenditures are being made only in accordance with authorizations of the Company's management and directors, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

As required by Section 404 of the Sarbanes-Oxley Act of 2002 and the related rule of the SEC, management assessed the effectiveness of the Company's internal control over financial reporting using the *Internal Control-Integrated Framework (2013)* developed by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this assessment, management concluded that the company's internal control over financial reporting was effective as of December 31, 2018. Management has not identified any material weaknesses in the Company's internal control over financial reporting as of December 31, 2018. The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by SingerLewak LLP, an independent registered public accounting firm, as stated in their report which is included herein.

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**Report of Independent Registered Public Accounting Firm**

To the Shareholders and the Board of Directors of Liquidmetal Technologies, Inc.

**Opinion on the Internal Control Over Financial Reporting**

We have audited Liquidmetal Technologies, Inc. and its subsidiaries' (collectively, the "Company") internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive loss, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018 and the related notes to the consolidated financial statements and the Financial Statement Schedule listed in Item 15(a) (collectively, the "financial statements") and our report dated March 5, 2019 expressed an unqualified opinion.

**Basis for Opinion**

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures

as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

### **Definition and Limitations of Internal Control Over Financial Reporting**

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ SingerLewak LLP

Los Angeles, California

March 5, 2019

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**Item 9B. Other Information**

None.

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Table of Contents**PART III****Item 10. Directors, Executive Officers and Corporate Governance**

Set forth below is a table identifying our directors and executive officers as of March 1, 2019:

<b>Name</b>	<b>Age</b>	<b>Position</b>
Lugee Li	58	Chairman of the Board, President and Chief Executive Officer
Bruce Bromage	65	Chief Operating Officer
Bryce Van	35	Vice President- Finance
Isaac Bresnick	34	Executive Administrator and Director
Abdi Mahamedi	55	Vice Chairman of the Board
Walter Weyler	78	Director
Vincent Carrubba	58	Director
Tony Chung	49	Director

*Professor Lugee Li (“Professor Li”)* was elected by our board of directors to serve as our Chief Executive Officer in December 2016. Pursuant to the terms of the 2016 Purchase Agreement, Professor Li was appointed as a member of our board of directors in March 2016 and became Chairman of our board of directors in October 2016. Professor Li is the founder, Chairman, and majority shareholder of DongGuan Eontec Co. Ltd., a Hong Kong company listed on the Shenzhen Stock Exchange engaged in the production of precision die-cast products and the research and development of new materials. Professor Li founded Eontec in 1993 and has served as Chairman since that date. At Eontec, Professor Li is responsible for strategic development and research and development. Professor Li is also the founder and sole shareholder of Leader Biomedical Limited, a Hong Kong company engaged in the supply of biomaterials and surgical implants. Professor Li serves as an analyst for the Institute of Metal Research at the Chinese Academy of Sciences and serves part-time as a professor at several universities in China. Professor Li owns Liquidmetal Technology Limited, a Hong Kong company and the investor in our 2016 Purchase Agreement. Our board of directors believes that Professor Li’s experience and knowledge in the areas of metal die casting and bulk metallic glasses makes him a valuable resource for our Company.

*Bruce Bromage* was elected by our board of directors to serve as Chief Operating Officer in October 2017 after serving as Executive Vice President of Business Development and Operations with our Company since November 2012. From April 2002 to August 2010, Dr. Bromage served as Executive Vice President and General Manager of Symmetricom, a publicly traded provider of products for communications infrastructure and systems and was an officer of the company. Responsibilities during his eight years with Symmetricom included Corporate Strategy, M&A Integration, Information Technology, and General Management of the Timing, Test and Measurement Division and the Technology Realization Center. Prior to Symmetricom, Dr. Bromage held senior executive positions with two high-technology startups and managed Strategic Business Development with Hewlett Packard. Dr. Bromage received his Ph.D. in Cognitive Psychology from the University of California, Santa Barbara in 1981 and has completed executive programs with the Stanford Graduate School of Business.

*Bryce Van* was appointed by our board of directors to serve as our Vice President of Finance and Principal Financial and Accounting Officer in August 2017. Previously, Mr. Van served as our Corporate Controller since joining the Company in August 2013. Mr. Van is a Certified Public Accountant and served seven years at PwC as an Audit Manager for a mix of large and small-cap SEC registrants. He received his B.A. degree in Business Economics from University of California Santa Barbara in 2006.

*Isaac Bresnick* began serving on our board of directors in October 2016 and was appointed to the role of Executive Administrator within the Company in November 2016. From October 2014 to November 2016, Mr. Bresnick served as Legal and Regulatory Affairs Director for the Leader Biomedical Group, a private company based in Hong Kong and operating from Amsterdam, the Netherlands. At Leader Biomedical, Mr. Bresnick was responsible for the direction and management of legal affairs, regulatory affairs, quality control and quality assurance, as well as for advising executive management of affiliated companies. From July 2013 to October 2017, Mr. Bresnick served as Director of aap Joints GmbH, a private company in Berlin, Germany. From January 2013 through June 2013, Mr. Bresnick provided full-time consulting services to AAP Orthopedics Ltd., a BVI company. Mr. Bresnick received his J.D. from the University of Connecticut School of Law in 2013, and his B.S. in Industrial Design from the University of Bridgeport in 2008. After completion of his undergraduate studies and continuing through his enrollment at the University of Connecticut, Mr. Bresnick worked as Senior Arrangements Designer for Electric Boat Corporation, a subsidiary of General Dynamics, from June 2008 to December 2012. Our board of directors believes that Mr. Bresnick's experience and background make him a qualified and valuable member of our board of directors.

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*Abdi Mahamedi* has served as a director since May 2009 and served as Chairman of the board of directors from March 2010 through October 2016. Since 1987, Mr. Mahamedi has served as the President and Chief Executive Officer of Carlyle Development Group of Companies (“CDG”), which develops and manages residential and commercial properties in the United States on behalf of investors worldwide. At CDG, Mr. Mahamedi evaluates and supervises all of the investment activities and management personnel. Prior to joining CDG, Mr. Mahamedi founded Emanuel Land Company, a subsidiary of Emanuel & Company, a Wall Street investment banking firm, and served as a managing director for Emanuel Land Company from 1986 to 1987. In 1983, Mr. Mahamedi received his B.S.E. degree in Civil and Structural Engineering from the University of Pennsylvania, and in 1984 he received his M.S.E. degree in Civil and Structural Engineering from the University of Pennsylvania. Our board of directors believes that Mr. Mahamedi’s experience and background make him a qualified and valuable member of our board of directors. In particular, his experience working with global investment companies and leading acquisition activities make him a valuable resource for our Company.

*Walter Weyler* began serving on our board of directors in September 2015, after serving as a member of our technology board, a technology-focused advisory board, since October 2014. Mr. Weyler previously served, from 1995 to 2005, as the owner and president of Kinetics, Incorporated, a contract manufacturer of complex solid steel parts and a leader in metal injection molding. Prior to that time, Mr. Weyler served, from 1985 to 1993, as the president and chief operating officer and a director of Graco Inc., a publicly traded company that designs, manufactures and markets systems and equipment to move, measure, dispense and spray fluid and coating materials. Mr. Weyler has served as a member of the Oregon Symphony Board of Trustees since 2006 and a member of the Eliot Condominium Board since 2013. Mr. Weyler also served as a member of the Board of Trustees of the Oregon Museum of Science and Industry from 2011 to 2015. In particular, Mr. Weyler’s experience with coatings and metal injection molding businesses make him a valuable resource for our board of directors.

*Vincent Carrubba* began serving on our board of directors in October 2016. From September 2014 through the present, Mr. Carrubba has served as the CEO of Admiral Composite Technologies Inc. (“Admiral”), where he has developed new technologies for environmentally responsible and innovative building materials which represent Admiral’s product lines. Mr. Carrubba has also served as Admiral’s Chairman since its inception in 2009. From September 2014 through the present, Mr. Carrubba has served as the CEO of Asia Sourcing & Communications USA Inc. and he has served as its Chairman since its inception in 2013. From 2002 through August 2014, Mr. Carrubba served as the Director of research and development for Interdynamics Inc. and IDQ Holdings, where he was responsible for all research and development and quality control matters, including the management of engineering, legal, patenting, regulatory, insurance and consumer relations matters. From 1989 through 1992, Mr. Carrubba designed and installed the New York Stock Exchange telecommunications and information technology systems. Mr. Carrubba has held engineering and executive positions with Xerox, General Electric, Bristol-Meyers Squibb and AT&T and he is the inventor of several patents related to telecommunications, professional tools and consumer products. Mr. Carrubba received a Bachelor of Arts degree in Engineering Science and a Bachelor of Science Degree in Mechanical Engineering from Columbia University SEAS in 1982. Our board of directors believes that Mr. Carrubba’s experience and background make him a qualified and valuable member of our board of directors.

*Tony Chung* was appointed to our board of directors in August 2017. Mr. Chung had previously served as the Company’s Chief Financial Officer from December 2008 to August 2017. Prior to joining the Company, he was the



Chief Financial Officer of Solarcity, currently a division of Tesla Inc., that provides advanced solar technology solutions. In 2018, Mr. Chung co-founded Hebe Inc., a blockchain based healthcare provider, where he serves as General Counsel. He is also the Managing Director of Baypoint Ventures, a technology investment fund. Mr. Chung is an Attorney at Law and received a B.S. degree in business from UC Berkeley and a J.D. Degree from PCU Law School. Our board of directors believes that Mr. Chung's experience and background make him a qualified and valuable member of our board of directors.

### **Audit Committee**

We have a separately-designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Mr. Weyler serves as the chairman, and Mr. Mahamedi and Mr. Carrubba serve as the other members of, the Audit Committee. Our board of directors has determined that Mr. Weyler, Mr. Mahamedi and Mr. Carrubba are all "independent directors" as defined by the rules of The NASDAQ Stock Market, Inc. applicable to members of an audit committee and Rule 10A-3(b)(i) under the Exchange Act. Our board of directors has not deemed any members of the current Audit Committee to be qualified as an "audit committee financial expert" as defined in Item 407(d)(5) of Regulation S-K or demonstrate "financial sophistication" as defined by the rules of The NASDAQ Stock Market, Inc. Following the departure of the previous Audit Committee Chairman on March 28, 2016, the Company is in the process of identifying a "new audit committee financial expert" and will make an appointment once a suitable individual is identified.

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The Audit Committee is appointed by our board of directors to assist our board of directors in monitoring the integrity of our financial statements, our compliance with legal and regulatory requirements, and the independence and performance of our internal and external auditors. The Audit Committee carries out these responsibilities through regular meetings with (1) our management team, (2) our internal auditors, with formal approval of fees and scope of services, and (3) our external auditors, with formal approval of the scope of services, fees, and quarterly independence assessments. The Audit Committee maintains open, direct, lines of communication with both the internal and external audit functions to further support them in their corporate governance efforts. The results of services performed by both our internal and external audit functions are reported directly to the Audit Committee.

### **Section 16(a) Beneficial Ownership Reporting Compliance**

Section 16(a) of Exchange Act requires the Company's directors and officers, and persons who own more than 10% of a registered class of the Company's equity securities, to file initial reports of ownership and reports of changes in ownership with the SEC. Such persons also are required to furnish the Company with copies of all Section 16(a) reports they file.

Based solely on its review of the copies of such reports received by it with respect to fiscal year 2018 or written representations from certain reporting persons, the Company believes that all filing requirements applicable to its directors and officers and persons who own more than 10% of a registered class of the Company's equity securities have been complied with, on a timely basis, for fiscal year 2018.

### **Code of Ethics**

Our board of directors has adopted a written Code of Ethics for Chief Executive Officer and Senior Financial and Accounting Officers that applies to our Principal Executive Officer, Principal Financial Officer, Principal Accounting Officer or Controller, or persons performing similar functions. A current copy of the code is filed as an exhibit to this report on Form 10-K and is also available on our website, [www.liquidmetal.com](http://www.liquidmetal.com), in the "Investors" section. In addition, we intend to post on our website, [www.liquidmetal.com](http://www.liquidmetal.com), all disclosures that are required by law concerning any amendments to, or waivers from, any provision of the Code of Ethics for Chief Executive Officer and Senior Financial and Accounting Officers.

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**Item 11. Executive Compensation**

**Compensation Discussion and Analysis**

*Overview*

The Company's compensation policies and practices are developed and implemented through the Compensation Committee of the board of directors. The Committee's responsibility is to review and consider annually the performance of the Company's named executive officers in achieving both corporate and individual goals and objectives, and to assure that the Company's compensation policies and practices are competitive and effective in incentivizing management.

The Compensation Discussion and Analysis section provides a description of the primary elements of the Company's fiscal year 2018 compensation program and policies for all executive officers, who are referred to as our named executive officers:

Lugee Li, President and Chief Executive Officer  
Bruce Bromage, Chief Operating Officer  
Bryce Van, Vice President of Finance  
Isaac Bresnick, Executive Administrator  
Paul Hauck, Former Executive Vice President of Sales and Marketing

In 2018, our named executive officers effectively completed multiple transactions important to the long-term success of the Company, including the continued expansion of the Company's sales and marketing network, the related expansion of our sales pipeline for future production orders and licensing transactions, and the relocation of our principal operating facility.

*Compensation Committee activities in 2018 included:*

Evaluating the performance of the Company's executive officers;  
Reviewing and approving the total compensation and benefits of the Company's executive officers, including cash compensation and long-term incentive compensation; and  
Reviewing and amending guidelines and standards regarding the Company's compensation practices and philosophy.

For the Company's named executive officers, the Compensation Committee established compensation levels based, in part, on a framework of compensation benchmarking of comparable companies provided by external compensation consultants. To obtain access to independent compensation data, analysis and advice, an independent compensation consulting firm, PayScale, was retained in 2018 by the Compensation Committee. The principal projects assigned to the consultant include evaluation of the composition of the peer group of companies, evaluation of levels of executive compensation as compared to general market compensation data and the peer companies' compensation data, and evaluation of proposed compensation programs or changes to existing programs. PayScale does not provide any other services to the Company and works with the Company's management only on matters for which the Compensation Committee is responsible. The Compensation Committee is required to consider all factors relevant to a compensation consultant's independence from management. The Compensation Committee has determined that the engagement of PayScale does not raise any independence, conflict of interest or similar concerns.

This section should be read in conjunction with the "Summary Compensation Table" and related tables pertaining to the compensation earned in 2018 by the named executive officers under the caption "Executive Compensation".

#### *Compensation Philosophy*

The Company's business plan and goals have historically been and continue to be linked to the development of the Company's proprietary technology and production processes, as well as the commercialization and adoption of the technology within a wide array of markets. The Company's annual cash resources are focused on funding the completion of this development process.

It is critical to the development and commercialization of the Company's technology that the Company attracts and retains well-qualified executives familiar with manufacturing and sale of amorphous metal and bulk metallic glass products. As a result, the Company's executive compensation programs seek to maintain a competitive annual salary structure while emphasizing long-term incentives that are connected to the ultimate commercialization and success of the technology. These programs strive to align the interests of the executive officers and management with those of the Company's shareholders through the use of equity-based programs.

#### *Elements of Compensation*

The Company's compensation program has four primary components: cash salary, performance-based cash awards, long-term incentives through equity stock awards, and benefits. Each element of the Company's compensation program has been specifically chosen to reward, motivate and incentivize the executives of the Company through the commercialization phase of the technology and beyond. The Compensation Committee determines the amount for both total compensation and each compensation element through discussions with the Company's management, consideration of benchmarking data, past performance and future corporate and individual objectives.

The four basic elements of compensation, described in further detail below, are:

**SALARY.** Base salaries for the Company's named executives are determined by the Compensation Committee depending on a variety of factors including the scope of their responsibilities, their leadership skills and values, their performance and length of service. Salaries for our named executive officers are intended to create a minimum level of compensation that is competitive with other companies, deemed comparable, depending on the prior experience and position of the executive. Decisions regarding salary increases are affected by the named executive's current salary and the amounts paid to their peers within and outside the Company.

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**LONG-TERM INCENTIVES.** The primary form of incentive compensation that is offered to the Company's executives consists of long-term incentives in the form of equity awards. The use of such long-term incentives is intended to focus and align goals of Company executives with those of shareholders and creates a direct interest in the results of operations, long-term performance and achievement of the Company's long-term goals.

**PERFORMANCE BASED CASH AWARDS.** The Compensation Committee believes that it is important to offer cash incentives to executives for the achievement of specified objectives that yield increased value for shareholders and will utilize performance based cash awards, on a discretionary basis, to provide additional incentives.

**BENEFITS.** The Compensation Committee also incorporates retirement, insurance, termination and severance benefits in the compensation program for executive officers. These benefits are offered to retain top executives, maintain their health and wellness and remain competitive in the industry. The retirement and insurance benefits are consistent with those benefits offered more broadly to the Company's employees.

The Company's overall compensation packages for our named executive officers currently emphasize a mix of the four basic elements of compensation outlined above. With this balancing of both short and long-term incentives, the Company's overall compensation is established at a level comparable to our peer group of companies, which share a similar focus on both short-term strategies and long-term tactical plans for the development of their respective technologies.

*Use of Peer Group*

Our main asset consists of our patented technology in the field of amorphous metal manufacturing and our business is primarily focused on development, commercialization, and manufacturing of this technology within a wide array of industries.

We have identified a peer group of companies with a similar location and an emphasis of high tech manufacturing.

*Benchmarking*

The Compensation Committee believes it is important to understand and analyze the current compensation programs of other companies when making compensation decisions. We traditionally consider the compensation programs of our peers when determining compensation for the named executive officers. This year the Committee reviewed externally prepared surveys and publicly available information for our peer group companies to compare the components of our compensation program for the executive officers with those of the peer group.

Due to the Company's unique business plan and current focus on development of the technology, the Compensation Committee exercises its discretion in determining compensation packages that may differ from the peer group. Nevertheless, the peer group is instructive in assessing elements of compensation and structure for similarly situated companies.

While the Company's current compensation program for our executive officers differs in certain aspects from our peers, the Compensation Committee generally targets total compensation packages of our named executive officers to be within the 50th percentile of the peer group.

#### *Performance Objectives*

For 2018, the Compensation Committee considered performance objectives in the development timelines of our technology, while also taking into account that long-term incentives, including stock options, have already been put in place during the prior four years through issuances from the 2012 Equity Incentive Plan and 2015 Equity Incentive Plans. Objectives in 2018 included:

Continued refinement of the Company's manufacturing capabilities, inclusive of scaling the operations of the new manufacturing facility and qualifying lower cost tooling and alloy supplies;  
Successful delivery of production parts from the Company's manufacturing center; and  
Continued expansion of the sales pipeline and identification of suitable applications for the technology.

#### *Elements of 2018 Compensation*

1. **SALARY.** In evaluating base salaries for 2018, the Compensation Committee believed it was important to maintain competitive base salary compensation. In 2018, Mr. Bromage's annual base salary was set at \$291,000, which was consistent with the previous year. Mr. Van's annual salary increased from \$213,000 to \$245,000 to align with market comparisons. Mr. Bresnick's annual salary was \$154,000 which was consistent with the previous year. Professor Li is not receiving an annual salary for his service as President and Chief Executive Officer.

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2. LONG-TERM INCENTIVES. The Compensation Committee has chosen to rely upon equity instruments, namely options, in designing compensation packages for executives. The Compensation Committee views the grant of equity based awards as an incentive for future performance since the value of these equity based awards will increase as the Company's stock price increases, thereby satisfying the Compensation Committee's goal of linking executive compensation to share price appreciation over the longer term and promoting the retention of the key executives throughout the development process of our technology. In 2018, options for the purchase of common stock of 4,050,000, 1,130,000, and \$0 were granted to Mr. Bromage, Mr. Van, and Mr. Bresnick, respectively. Professor Li did not receive any options in 2018 related to his service as President and Chief Executive Officer.

3. CASH AWARDS. The Compensation Committee elected to award short-term incentive cash bonuses to executives during 2018 for the achievement of specified objectives and yield increased value for shareholders. The Compensation Committee continues to value short-term incentive awards as part of the overall compensation mix and will consider granting such awards in future periods.

4. BENEFITS. As noted above, retirement and insurance benefits for named executive officers are consistent with those benefits offered more broadly to the Company's employees. Termination and severance terms, specifically in instances of change in control, are defined under existing employment agreements, as described below (see "Employment Arrangements and Change of Control Agreements").

## COMPENSATION COMMITTEE REPORT

The Compensation Committee has reviewed and discussed the foregoing Compensation Discussion and Analysis with management of the Company. Based on this review and discussion, we recommend to the Board of Directors that the Compensation Discussion and Analysis be included in this document.

### THE COMPENSATION COMMITTEE

Vincent Carrubba, Chairman  
Walter Weyler  
Abdi Mahamedi

The foregoing report shall not be deemed incorporated by reference by any general statement incorporating by reference this statement into any filing under the Securities Act of 1933 or under the Securities Exchange Act of 1934,



except to the extent that the Company specifically incorporates this information by reference, and shall not otherwise be deemed filed under such Acts.

## **Executive Compensation**

### **Executive Benefits and Perquisites**

Set forth below is information regarding compensation earned by or paid or awarded to the following executive officers of the Company during the year ended December 31, 2018: (i) Professor Li, our Chairman, President and Chief Executive Officer; (ii) Bruce Bromage, our Chief Operating Officer; (iii) Bryce Van, our Vice President of Finance, (iv) Isaac Bresnick, our Executive Administrator; and (v) Paul Hauck, our former Executive Vice President of Sales and Marketing. Mr. Hauck separated from the Company as of July 6, 2018. These persons are hereafter referred to as our “named executive officers.” The identification of such named executive officers is determined based on the individual’s total compensation for the year ended December 31, 2018, as reported below in the Summary Compensation Table.

Table of Contents**Summary Compensation Table**

The following table sets forth for each of the named executive officers: (i) the dollar value of base salary and bonus earned during the years ended December 31, 2018, 2017 and 2016 (ii) the aggregate grant date fair value of stock and option awards granted during 2018, 2017 and 2016, computed in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 718 (R); (iii) the dollar value of earnings for services pursuant to awards granted during 2018, 2017, and 2016 under non-equity incentive plans; (iv) non-qualified deferred compensation earnings during 2018, 2017, and 2016; (v) all other compensation for 2018, 2017, and 2016; and, finally, (vi) the dollar value of total compensation for 2018, 2017, and 2016.

Name and Principal Position	Year	Salary	Bonus	Stock Option Awards		Total
				Awards	(1)	
Lugee Li, <i>Chairman, President and Chief Executive Officer (7)</i>	2018	\$-	\$-	\$ -	\$-	\$-
	2017	\$-	\$-	\$ -	\$-	\$-
	2016	\$-	\$-	\$ -	\$-	(2) \$-
Bruce Bromage, <i>Chief Operating Officer</i>	2018	\$291,000	\$97,758	\$ -	\$444,820	(3) \$833,577
	2017	\$251,770	-	\$ -	\$45,119	(3) \$296,889
	2016	\$240,000	\$105,300	\$ -	\$89,991	(3) \$435,291
Bryce Van, <i>Vice President- Finance (8)</i>	2018	\$216,693	\$23,956	\$ -	\$212,454	(4) \$453,103
	2017	\$170,184	\$-	\$ -	\$22,559	(4) \$192,743
	2016	\$139,100	\$36,617	\$ -	\$18,898	(4) \$194,615
Isaac Bresnick, <i>Executive Administrator (9)</i>	2018	\$154,000	\$64,410	\$ -	\$-	(5) \$218,410
	2017	\$95,539	\$-	\$ -	\$45,119	(5) \$140,658
	2016	\$9,001	\$-	\$ -	\$-	(5)
Paul Hauck, <i>Former Executive Vice President- Sales and Marketing (10)</i>	2018	\$142,699	\$10,699	\$ -	\$-	(6) \$153,398
	2017	\$265,000	\$-	\$ -	\$45,119	(6) \$310,119
	2016	\$265,000	\$141,270	\$ -	\$119,988	(6) \$526,258

- (1) Please refer to Note 15 in the accompanying footnotes to the financial statements for discussion of the assumptions used in the valuation of option awards.
- Options to purchase 700,000 shares of our common stock were awarded to Professor Li on May 4, 2016. Such awards were granted while Professor Li was a director of the Company and before his assuming the role of President and Chief Executive Officer.
- (2) Options to purchase 4,050,000, 240,000, and 1,500,000 shares of our common stock were awarded to Mr. Bromage on November 15, 2018, February 7, 2017, and February 17, 2016, respectively.
- (3) Options to purchase 1,130,000, 120,000, and 300,000 shares of our common stock were awarded to Mr. Van on May 10, 2018, February 7, 2017, and February 16, 2016, respectively.
- (4) Options to purchase 240,000 and 700,000 shares of our common stock were awarded to Mr. Bresnick on February 7, 2017 and December 13, 2016, respectively. The 2016 award was granted while Mr. Bresnick was a Director and before taking a role with the Company.
- (5) Options to purchase 240,000 and 2,000,000 shares of our common stock were awarded to Mr. Hauck on February 7, 2017 and February 17, 2016, respectively.
- (6)

- Professor Li assumed the role of Chairman of the Company's board of directors on October 26, 2016 and was
- (7) approved by the board of directors as the Company's President and Chief Executive Officer on December 13, 2016.
  - (8) Mr. Van was appointed as the Vice President of Finance on August 16, 2017. Mr. Van had previously served as the Company's Corporate Controller. Compensation amounts reflect amounts earned in both roles.
  - (9) Mr. Bresnick became an employee of the Company effective November 1, 2016.
  - (10) Mr. Hauck ceased to be an employee of the Company on July 6, 2018.

## CEO Pay Ratio

As required by Item 402(u) of Regulation S-K, we are providing the following information about the median annual total compensation of our employees and the annual total compensation of Professor Li, our Chief Executive Officer. For the year ended December 31, 2018:

the annual total compensation of our median employee was reasonably estimated to be \$110,000; and  
the annual total compensation of Professor Li was \$0.

Because Professor Li did not receive any compensation or employer-paid welfare benefits from the Company in 2018, we cannot provide a ratio of the annual total compensation of our Chief Executive Officer to the annual total compensation of our median employee.

We identified our median employee using a multi-step process. First, we examined the base salaries and wages of all individuals employed by us on December 31, 2018 (other than Professor Li), to identify the median base salary of all our employees. We annualized wages and salaries for all employees who were hired after January 1, 2018, as permitted by SEC rules. We then calculated the total compensation of each of the employees to whom we paid the median base salary according to the same rules we use to calculate the total compensation of our named executive officers reported in the Summary Compensation Table, including the value stock option grants. We selected the individual within such group whose total compensation was at the median to serve as our median employee whose compensation is disclosed above.

Table of Contents**2018 Grants of Plan-Based Awards**

The following table sets forth information with respect to grants of plan-based awards during 2018 to the named executive officers:

<b>Name</b>	<b>Grant Date</b>	<b>All Other Option Awards: Number of Securities Underlying Options (#)</b>	<b>Exercise or Base Price of Option Awards (\$/ share)</b>	<b>Grant Date Fair Value of Stock and Option awards (\$)</b>
Lugee Li	-	-	\$ -	\$ -
Issac Brenick	-	-	\$ -	\$ -
Bruce Bromage	11/15/2018	4,050,000	\$ 0.14	\$ 444,820
Bryce Van	5/10/2018	1,130,000	\$ 0.24	\$ 212,454

**Outstanding Equity Awards at 2018 Fiscal Year-End**

The following table sets forth information on outstanding option and stock awards held by the named executive officers at December 31, 2018, including the number of shares underlying both exercisable and un-exercisable portions of each stock option as well as the exercise price and expiration date of each outstanding option.

**Option Awards**

<b>Name</b>	<b>Number of Securities</b>	<b>Number of Securities Underlying</b>	<b>Equity Incentive Plan Awards:</b>	<b>Option Exercise</b>	<b>Option Expiration</b>
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	<b>Underlying Unexercised Options Exercisable</b>	<b>Unexercised Options Unexercisable</b>	<b>Number of Securities Underlying Unexercised Unearned Options</b>	<b>Price</b>	<b>Date</b>	
Lugee Li	361,667	338,333	(1)	-	\$ 0.13	5/4/2026
Bruce Bromage	1,335,192	-	(2)	-	\$ 0.08	2/5/2023
	1,647,683	56,817	(3)	-	\$ 0.29	2/5/2024
	1,175,000	325,000	(4)	-	\$ 0.14	1/28/2025
	850,000	650,000	(5)	-	\$ 0.07	2/17/2026
	146,667	93,333	(6)	-	\$ 0.23	2/7/2027
	-	4,050,000	(10)	-	\$ 0.14	11/15/2028
Bryce Van	90,000	-	(7)	-	\$ 0.15	10/23/2023
	290,000	10,000	(3)	-	\$ 0.29	2/5/2024
	100,000	65,000	(4)	-	\$ 0.14	1/28/2025
	105,000	136,500	(5)	-	\$ 0.07	2/17/2026
	73,333	46,667	(6)	-	\$ 0.23	2/7/2027
	-	1,130,000	(9)	-	\$ 0.24	5/10/2028
Isaac Bresnick	280,000	420,000	(8)	-	\$ 0.25	12/13/2026
	146,667	93,333	(6)	-	\$ 0.23	2/7/2027

(1) The shares underlying these grants vest 20% following the first anniversary of the grant date of May 4, 2016, and on a monthly basis following such date for the remaining four years thereof.

(2) The shares underlying these grants vest 20% following the first anniversary of the grant date of February 6, 2013, and on a monthly basis following such date for the remaining four years thereof.

(3) The shares underlying these grants vest 20% following the first anniversary of the grant date of February 5, 2014, and on a monthly basis following such date for the remaining four years thereof.

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- (4) The shares underlying these grants vest 20% following the first anniversary of the grant date of January 27, 2015, and on a monthly basis following such date for the remaining four years thereof.
- (5) The shares underlying these grants vest 20% following the first anniversary of the grant date of February 17, 2016, and on a monthly basis following such date for the remaining four years thereof.
- (6) The shares underlying these grants vest 33.33% following the first anniversary of the grant date of February 7, 2017, and on a monthly basis following such date for the remaining two years thereof.
- (7) The shares underlying these grants vest 20% following the first anniversary of the grant date of October 23, 2013, and on a monthly basis following such date for the remaining four years thereof.
- (8) The shares underlying these grants vest 20% following the first anniversary of the grant date of December 13, 2016, and on a monthly basis following such date for the remaining four years thereof.
- (9) The shares underlying these grants vest 33.33% following the first anniversary of the grant date of May 10, 2018, and on a monthly basis following such date for the remaining two years thereof.
- (10) The shares underlying these grants vest 20% following the first anniversary of the grant date of November 15, 2018, 20% on the second anniversary of the grant date, and 60% on the third anniversary of the grant date.

**Employment Agreements and Change of Control Agreement**

On August 16, 2017, the Company and Tony Chung, the Company's former Chief Financial Officer, entered into a Separation Agreement and General Release pursuant to which Mr. Chung resigned as an officer and employee of the Company (the "Tony Chung Separation Agreement"). The Tony Chung Separation Agreement provided for the payment of severance compensation to Mr. Chung in the form of a continuation of his base annual salary of \$240,000 (subject to tax withholdings) for a period of 12 months and reimbursement for COBRA healthcare coverage for a period of 12 months. In addition, it provided for the accelerated vesting of 247,650 of the unvested stock options held by Mr. Chung as of the separation date and the extension of the exercise period of his options until the first anniversary of the date of the Tony Chung Separation Agreement. This resulted in a total of 2,889,749 stock options being exercisable by Mr. Chung as of the separation date and resulted in an additional \$89,000 of stock-based compensation expense during the year ended December 31, 2017. In connection with the Tony Chung Separation Agreement, Mr. Chung and the Company granted each other mutual general releases subject to customary exceptions. As of December 31, 2018 and December 31, 2017, the Company had accrued liabilities totaling \$0 and \$164,000, respectively, relating to the Tony Chung Separation Agreement.

On March 10, 2016, the Company amended its Change of Control Agreements with named executive officers. As so amended, the Change of Control Agreements provide that if the executive officer's employment with the Company is terminated without cause during the one-year period after a change of control of the Company, then the terminated officer will receive a lump sum severance compensation in an amount equal to twelve months of his then-current base salary. The executive officers will each also be entitled to the above-described severance compensation in the event he terminates his own employment within one year after a change of control because of a salary decrease, assignment to a lower-level position or a required move of more than 25 miles. In addition to the above-described severance compensation, upon any termination described in this paragraph, all unvested stock options related to these officers will automatically and immediately vest and shall thereafter be exercisable in accordance with the terms and provisions of the applicable award agreements. "Change of control" is defined in the Change of Control Agreements, with certain exceptions, as a merger of the Company with a third-party, the sale of all or substantially all of the Company's assets, the acquisition by a single person or group of more than 50% of the combined voting power of the Company's outstanding securities. "Cause" is defined in the Change of Control Agreements to include fraud, embezzlement, dishonesty, material harm to the Company, or an uncured failure to adequately perform job duties, among other things.

On November 15, 2018, the Company entered into an Employment Agreement with Bruce Bromage, the Company's Chief Operating Officer (the "Bromage Employment Agreement"). The Bromage Employment Agreement has a term of three years and will continue thereafter on an "at-will" basis until terminated by either the Company or Mr. Bromage upon 30 days' prior written notice. The Bromage Employment Agreement provides for an annual base salary of \$291,000 plus bonuses at the discretion of the Company's Board of Directors. The agreement provides that the Company can terminate Mr. Bromage's employment at any time and for any reason, provided that if his employment is terminated without "Cause" (as specifically defined in the agreement), then he will continue to be entitled to his base salary and health and welfare benefits for a period of twelve months after termination, and his unvested equity awards (to the extent they would have vested during the twelve-month period after termination) will immediately vest and become exercisable until the earlier of two years after vesting or the scheduled expiration date of the award. In the event that Mr. Bromage terminates his own employment within two years after a change in control of the Company for various "Good Reason Events" that are defined in the agreement (including a material change in compensation or duties), the Company will also be obligated to pay him the same severance compensation that would be applicable to a termination without "Cause". The Bromage Employment Agreement provides that Mr. Bromage will not be entitled to any severance compensation if he voluntarily leaves the employment of the Company or is terminated for "Cause", and severance payments will cease if he violates certain restrictive covenants in the agreement.

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On November 15, 2018, the Company entered into an Employment Agreement with Bryce Van, the Company's Vice President of Finance (the "Van Employment Agreement"). The Van Employment Agreement has a term of three years, subject to automatic extension on a month-to-month after the expiration of the initial three-year term. The Van Employment Agreement provides for an annual base salary of \$245,000 plus bonuses at the discretion of the Company's Board of Directors. The agreement provides that the Company can terminate Mr. Van's employment at any time and for any reason, provided that if his employment is terminated without "Cause" (as specifically defined in the agreement), then he will continue to be entitled to his base salary and health and welfare benefits for a period of twelve months after termination, and his unvested equity awards (to the extent they would have vested during the twelve-month period after termination) will immediately vest and become exercisable until the earlier of two years after vesting or the scheduled expiration date of the award. In the event that Mr. Van terminates his own employment within two years after a change in control of the Company for various "Good Reason Events" that are defined in the agreement (including a material change in compensation or duties), the Company will also be obligated to pay him the same severance compensation that would be applicable to a termination without "Cause". The Van Employment Agreement provides that Mr. Van will not be entitled to any severance compensation if he voluntarily leaves the employment of the Company or is terminated for "Cause", and severance payments will cease if he violates certain restrictive covenants in the agreement.

Professor Li does not have an employment agreement or change of control agreement with the Company.

**Potential Payments Upon Termination or Change in Control**

The following table and summary set forth estimated potential payments the Company would be required to make to our named executive officers upon termination of employment or change in control of the Company, pursuant to each executive's employment agreement or change of control agreement in effect at year end. Except as otherwise indicated, the table assumes that the triggering event occurred on December 31, 2018.

Name	Benefit	Termination	Death	Termination
		without Cause (\$)	(\$)	Following Change of Control (\$)
Lugee Li (1)	Salary	-	-	-
	Bonus	-	-	-
	Equity Acceleration	-	-	-
	Benefits Continuation	-	-	-
	<b>Total Value</b>	-	-	-
Bruce Bromage	Salary	291,000	-	291,000
	Bonus	97,758	-	97,758



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	Equity Acceleration	339,625	-	339,625
	Benefits Continuation	14,793	-	14,793
	<b>Total Value</b>	743,176	-	743,176
Bryce Van	Salary	245,000	-	245,000
	Bonus	46,708	-	46,708
	Equity Acceleration	145,998	-	145,998
	Benefits Continuation	7,147	-	7,147
	<b>Total Value</b>	444,853	-	444,853
Isaac Bresnick (2)	Salary	-	-	154,000
	Bonus	-	-	-
	Equity Acceleration	-	-	92,186
	Benefits Continuation	-	-	21,464
	<b>Total Value</b>	-	-	267,649

(1) Professor Li does not have an employment agreement, nor is he currently receiving any form of compensation from the Company.

Severance amounts also apply if Mr. Bresnick terminate their own employment within one year after a change of (2) control because of a salary decrease, assignment to a lower-level position or a required move of more than 25 miles.

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**401(k) Savings Plan**

We have adopted a tax-qualified employee savings and retirement plan, or 401(k) plan that covers all of our employees. Pursuant to our 401(k) plan, participants may elect to reduce their current compensation, on a pre-tax basis, by an amount up to the statutorily prescribed annual limit and have the amount of the reduction contributed to the 401(k) plan. The 401(k) plan permits us, in our sole discretion, to make additional employer contributions to the 401(k) plan. However, we do not currently make employer contributions to the 401(k) plan and may not do so in the future. As such, contributions by employees or by us to the 401(k) plan, and the income earned on plan contributions, are not taxable to employees until withdrawn from the 401(k) plan, and we can deduct our contributions, if any, at the time they are made.

**Pension Benefits**

We do not sponsor any qualified or non-qualified defined benefit plans.

**Nonqualified Deferred Compensation**

We do not maintain any non-qualified defined contribution or deferred compensation plans. The Compensation Committee, which is comprised solely of “outside directors” as defined for purposes of Section 162(m) of the Internal Revenue Code, may elect to provide our officers and other employees with non-qualified defined contribution or deferred compensation benefits if the Compensation Committee determines that doing so is in our best interests.

**Compensation Risk Considerations**

When establishing and reviewing our compensation programs, the Compensation Committee considers whether such compensation programs for all employees, including our named executive officers, encourage unnecessary or excessive risk taking. We believe that our compensation programs are balanced and do not encourage unnecessary or excessive risk. We believe we have achieved this by striking an appropriate balance between short-term and long-term incentives and by using a variety of key business measurement metrics that promote disciplined progress towards longer-term company goals to assess performance under our compensation program.

**Director Compensation**

The following table sets forth information regarding the compensation received by each of our non-employee directors serving during the year ended December 31, 2018:

Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)	Option Awards (\$)		Non-Equity Incentive Plan Compensation (\$)	Nonqualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total Compensation (\$)
Abdi Mahamedi	\$ 15,000	-	\$ 25,932	(1)	-	-	-	\$ 40,932
Walter Weyler	\$ 20,000	-	\$ 25,932	(1)	-	-	-	\$ 45,932
Vincent Carrubba	\$ 20,000	-	\$ 25,932	(1)	-	-	-	\$ 45,932
Tony Chung	\$ 15,000	-	\$ 25,932	(1)	-	-	-	\$ 40,932

Options to purchase 240,000 shares of our common stock were awarded to Mr. Mahamedi, Walter Weyler, Vincent Carrubba, and Tony Chung on November 15, 2018, respectively. Please refer to Note 15 in the accompanying footnotes to the financial statements for discussion of the assumptions used in the valuation of option awards.

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Our non-employee directors receive certain compensation for their services and are reimbursed for expenses incurred in attending board and committee meetings, as determined by the board of directors. Each non-employee director received an annual base fee of \$15,000. In addition, each non-employee director receives annual fees to act as chairmen of the various sub-committees of the board of directors. Such fees are \$5,000 per chairmen. All fees are paid quarterly in arrears.

We have a 2012 Equity Incentive Plan and a 2015 Equity Incentive Plan pursuant to which our non-employee directors are entitled to receive stock options. Each non-employee director in office on November 15, 2018 received an annual grant of options to purchase 240,000 shares of our common stock. In addition, non-employee directors may be entitled to receive options on a case by case basis, in an amount determined by our board of directors or its compensation committee in its respective discretion, to purchase shares of common stock upon initial election to the board of directors. In determining the number of options granted to a director upon initial election, the compensation committee uses its judgment and, consistent with our compensation objectives, maintains the flexibility necessary to recruit qualified and experienced directors. All options granted under the plans have an exercise price equal to the fair market value of our common stock on the date of the grant. These stock options have a 10-year term and are exercisable pursuant to an equal 3-year vesting schedule, and remain exercisable for certain periods of time after a person is no longer a director.

No director who is an employee will receive separate compensation for services rendered as a director. However, our employee directors are eligible to participate in our 2012 and 2015 Equity Incentive Plans.

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

The following table sets forth certain information regarding the beneficial ownership of our common stock as of March 1, 2019 by:

- each person known by us to be a beneficial owner of more than 5.0% of our outstanding common stock;
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

The number and percentage of shares beneficially owned is determined under the rules of the SEC and is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership for each individual includes any shares as to which the individual has sole or shared voting power or investment power and also any shares which the individual has the right to acquire beneficial ownership of within 60 days of March 1, 2019 through the exercise of any stock option or other right. Unless otherwise indicated in the footnotes, each person has sole voting and investment power with respect to the shares shown as beneficially owned.

A total 914,316,624 shares of our common stock were issued and outstanding as of March 1, 2019. Unless otherwise indicated, the address of all directors and named executive officers is 20321 Valencia Circle, Lake Forest, California 92630.

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Name of Beneficial Owner	Common Stock		Percent of Class(1)
	Number of Shares(1)		
<b><u>Directors and Named Executive Officers</u></b>			
Lugee Li	416,835,292	(2)	45.1 %
Abdi Mahamedi	15,786,113	(3)	1.7 %
Walter Weyler	1,043,333	(4)	*
Vincent Carruba	513,704	(5)	*
Tony Chung	3,012,499	(6)	*
Bruce Bromage	5,452,055	(7)	*
Bryce Van	722,667	(8)	*
Isaac Bresnick	500,000	(9)	*
Paul Hauck	-	(10)	*
All directors and executive officers as a group (11 persons)	443,865,663		47.4 %

**5% Shareholders**

Liquidmetal Technology Limited Room 906, Tai Tung Building, 8 Fleming Rd Wanchai, Hong Kong	415,066,809	(11)	44.9 %
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\*Less than one percent

Shares of common stock beneficially owned and the respective percentages of beneficial ownership of common stock assumes the exercise or conversion of all options, warrants and other securities convertible into common stock, beneficially owned by such person or entity currently exercisable or exercisable within 60 days of March 1, 2019. Shares issuable pursuant to the exercise of stock options and warrants exercisable within 60 days of March 1, 2019, or securities convertible into common stock within 60 days of March 1, 2019, are deemed outstanding and held by the holder of such shares of common stock, options, warrants, or other convertible securities, for purposes of computing the percentage of outstanding common stock beneficially owned by such person, but are not deemed outstanding for computing the percentage of outstanding common stock beneficially owned by any other person. The percentage of common stock beneficially owned is based on 914,316,624 shares of common stock outstanding as of March 1, 2019.

(2) Includes:

405,000,000 shares of common stock held of record by Liquidmetal Technology Limited. Professor Li is the (a) majority owner, officer, and director of Liquidmetal Technology Limited and has sole power to direct the voting and disposition of such shares;

10,066,809 shares issuable pursuant to a Warrant held by Liquidmetal Technology Limited which is exercisable (b) currently or within 60 days of March 1, 2019. Professor Li is the sole owner, officer, and director of Liquidmetal Technology Limited and has sole power to direct the voting and disposition of such shares;

(c) 1,360,150 shares of common stock held of record by Professor Li;  
and

408,333 shares issuable pursuant to outstanding stock options which are exercisable currently or within 60 days of (d) March 1, 2019. Does not include 291,667 shares that are issuable pursuant to outstanding stock options, held by Professor Li, that are not exercisable currently or within 60 days of March 1, 2019.

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(3) Includes:

13,858,908 shares of common stock held of record by Carlyle Holdings, LLC. Mr. Mahamedi has the power to (a) direct the voting and disposition of such shares as the president and sole shareholder of Carlyle Development Group, Inc., which is a managing member of Carlyle Holdings, LLC;

(b) 759,428 shares of common stock held of record by Mr. Mahamedi; and

1,167,777 shares issuable pursuant to outstanding stock options which are exercisable currently or within 60 days (c) of March 1, 2019. Does not include 502,223 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

Includes 1,043,333 shares issuable pursuant to outstanding stock options, held of record by Mr. Weyler, which are (4) exercisable currently or within 60 days of March 1, 2019. Does not include 696,667 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

(5) Includes 513,704 shares issuable pursuant to outstanding stock options, held of record by Mr. Carrubba, which are exercisable currently or within 60 days of March 1, 2019. Does not include 692,963 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

(6) Includes:

(a) 85,250 shares of common stock held of record by Mr. Chung; and

2,927,249 shares issuable pursuant to outstanding stock options which are exercisable currently or within 60 days (b) of March 1, 2019. Does not include 277,500 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

(7) Includes:

(a) 14,030 shares of common stock held of record by Mr. Bromage; and

5,438,025 shares issuable pursuant to outstanding stock options which are exercisable currently or within 60 days (b) of March 1, 2019. Does not include 4,891,667 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.



Includes 722,667 shares issuable pursuant to outstanding stock options, held of record by Mr. Van, which are (8) exercisable currently or within 60 days of March 1, 2019. Does not include 1,323,833 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

Includes 500,000 shares issuable pursuant to outstanding stock options, held of record by Mr. Bresnick, which are (9) exercisable currently or within 60 days of March 1, 2019. Does not include 440,000 shares that are issuable pursuant to outstanding stock options that are not exercisable currently or within 60 days of March 1, 2019.

(10) Mr. Hauck ceased being an employee of the Company on July 6, 2018.

(11) Includes:

(a) 405,000,000 shares of common stock held of record by Liquidmetal Technology Limited; and

(b) 10,066,809 shares issuable pursuant to a Warrant held by Liquidmetal Technology Limited which is exercisable currently or within 60 days of March 1, 2019.

Table of Contents**Equity Compensation Plan Information**

Our executive officers, directors, and all of our employees are allowed to participate in our equity incentive plans. We believe that providing them with the ability to participate in such plans provides them with a further incentive towards ensuring our success and accomplishing our corporate goals.

The following table provides information regarding the securities authorized for issuance under our equity compensation plans as of December 31, 2018:

<b>Plan Category</b>	<b>Number of securities to be issued upon exercise of outstanding options, warrants, and rights [a]</b>	<b>Weighted-average exercise price of outstanding options, warrants, and rights [b]</b>	<b>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column [a]) [c]</b>
Equity compensation plans approved by stockholders	16,906,667	\$ 0.15	8,595,369
Equity compensation plans not approved by stockholders	11,924,503	0.20	12,771,202
Total	28,831,170	\$ 0.17	21,366,571

The number of securities, and types of plans available for future issuances of stock options, as of December 31, 2018 was as follows:

<b>Plan Name</b>	<b>Options and Warrants for Common Shares</b>
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	<b>Authorized</b>	<b>Exercised</b>	<b>Outstanding</b>	<b>Available</b>
2002 Equity Incentive Plan (1)	10,000,000	2,112,000	169,000	-
2012 Equity Incentive Plan	30,000,000	9,649,128	11,755,503	8,595,369
2015 Equity Incentive Plan	40,000,000	10,322,131	16,906,667	12,771,202
Total Stock Options	80,000,000	22,083,259	28,831,170	21,366,571

(1) The 2002 Equity Incentive Plan expired by its terms in April 2012, resulting in no additional incentive stock option grants being available under this plan.

### **2002 Equity Incentive Plan**

Our 2002 Equity Incentive Plan (the “2002 Plan”), which was adopted by our Board of Directors and approved by our shareholders in April 2002, provides for the grant of stock options to officers, employees, consultants, and directors of our company and its subsidiaries. The 2002 Plan provides for the granting to employees of incentive stock options within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, and for the granting to employees and consultants of non-statutory stock options. In addition, the 2002 Plan permits the granting of stock appreciation rights, or SARs, with or independently of options, as well as stock bonuses and rights to purchase restricted stock. A total of 10 million shares of our common stock may be granted under the 2002 Plan.

There were 169,000 outstanding options or stock awards at a weighted average price of \$0.12 under the 2002 Plan as of December 31, 2018. There were 169,000 options exercisable and 2,112,000 shares had been issued upon exercise of options under the 2002 Plan as of December 31, 2018.

The 2002 Plan expired by its terms in April 2012. The 2002 Plan will remain in effect only with respect to the equity awards that have been granted under the 2002 Plan prior to its expiration.

### **2012 Equity Incentive Plan**

On June 28, 2012, the Company adopted the 2012 Equity Incentive Plan (“2012 Plan”), with the approval of the shareholders, which provided for the grant of stock options to officers, employees, consultants and directors of the Company and its subsidiaries. The purpose of the 2012 Plan is to advance the interests of our shareholders by enhancing our ability to attract, retain, and motivate persons who make or are expected to make important contributions to our company and its subsidiaries by providing such persons with equity ownership opportunities and performance-based incentives, thereby better aligning their interests with those of our shareholders.



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The 2012 Plan provides for the granting to employees of incentive stock options within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, and for the granting to employees and consultants of non-statutory stock options. In addition, it permits the granting of stock appreciation rights, or SARs, with or independently of options, as well as stock bonuses and rights to purchase restricted stock. A total of 30 million shares of our common stock may be granted under the 2012 Plan, and all options granted under this plan had exercise prices that were equal to the fair market value on the date of grant.

There were 11,755,503 outstanding options or stock awards at a weighted average price of \$0.20 under the 2012 Plan as of December 31, 2018. There were 8,992,714 options exercisable and 9,649,128 shares had been issued upon exercise of options under the 2012 Plan as of December 31, 2018.

**2015 Equity Incentive Plan**

On January 27, 2015, the Company adopted the 2015 Equity Incentive Plan (“2015 Plan”), which provided for the grant of stock options to officers, employees, consultants and directors of the Company and its subsidiaries. The purpose of the 2015 Plan is to advance the interests of our shareholders by enhancing our ability to attract, retain, and motivate persons who make or are expected to make important contributions to our company and its subsidiaries by providing such persons with equity ownership opportunities and performance-based incentives, thereby better aligning their interests with those of our shareholders.

The 2015 Plan provides for the granting to employees and consultants of non-statutory stock options. In addition, it permits the granting of stock appreciation rights, or SARs, with or independently of options, as well as stock bonuses and rights to purchase restricted stock. A total of 40 million shares of our common stock may be granted under the 2015 Plan, and all options granted under this plan had exercise prices that were equal to the fair market value on the date of grant.

There were 16,906,667 outstanding options or stock awards at a weighted average price of \$0.15 under the 2015 Plan as of December 31, 2018. There were 6,050,463 options exercisable and 10,322,131 shares had been issued upon exercise of options under the 2015 Plan as of December 31, 2018.

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

## **Transactions with Related Persons**

On March 10, 2016, the Company entered into the 2016 Purchase Agreement with Liquidmetal Technology Limited, providing for the purchase of 405,000,000 shares of the Company's common stock for an aggregate purchase price of \$63,400,000. Liquidmetal Technology Limited is a company owned by Professor Li that was formed in 2016 in contemplation of the 2016 Purchase Agreement. In connection with the 2016 Purchase Agreement and also on March 10, 2016, the Company and Eontec, entered into a license agreement pursuant to which the Company and Eontec entered into a cross-license of their respective technologies. Eontec is a publicly held Hong Kong corporation of which Professor Li is the Chairman and major shareholder. As of December 31, 2018, Professor Li is a greater-than 5% beneficial owner of the Company's common stock and served (and currently serves) as the Company's Chairman, President, and Chief Executive Officer. Equipment and services procured from Eontec were \$213 thousand, \$877 thousand, and \$68 thousand during the years ended December 31, 2018, 2017, and 2016, respectively.

## **Review, Approval or Ratification of Transactions with Related Persons**

Our policy is to require that any transaction with a related party required to be reported under applicable SEC rules, other than compensation-related matters, be reviewed and approved or ratified by the Audit Committee of our board of directors. The Audit Committee of our board of directors has not adopted specific procedures for review of, or standards for approval of, these transactions, but instead reviews such transactions on a case by case basis. Our policy is to require that all compensation-related matters be recommended for board of directors approval by the Compensation Committee. During the last fiscal year no transactions with a related party occurred that required a waiver of this policy and no transactions with a related party occurred in which we did not follow this policy.

## **Director Independence**

Our board of directors currently has six members – Lugee Li, Isaac Bresnick, Abdi Mahamedi, Walter Weyler, Vincent Carrubba, and Tony Chung. Our board of directors has determined that Mr. Mahamedi, Mr. Weyler, and Mr. Carrubba are “independent directors” as such term is defined by the rules of the NASDAQ Stock Market, Inc. In addition, all of the members of our Compensation Committee, Corporate Governance and Nominating Committee, and Audit Committee are “independent directors” under the rules of the NASDAQ Stock Market, Inc. and the SEC applicable to members of such committees.

Table of Contents**Compensation Committee Interlocks and Insider Participation**

No member of the Compensation Committee has served as one of our officers or employees at any time. None of our executive officers serves as a member of the compensation committee of any other company that has an executive officer serving as a member of our board of directors. None of our executive officers serves as a member of the board of directors of any other company that has an executive officer serving as a member of the Compensation Committee.

**Item 14. Principal Accountant Fees and Services****Audit Fees for 2018 and 2017**

The following table summarizes the aggregate fees billed to us by SingerLewak LLP, our principal accountants, for professional services during the years ended December 31, 2018 and December 31, 2017:

<b>Fees</b>	<b>2018</b>	<b>2017</b>
Audit Fees (1)	\$ 160,913	\$ 178,024
All Other Fees	-	-
Total Fees	\$ 160,913	\$ 178,024

(1) *Audit Fees.*

Fees for audit services billed in 2018 consisted of:

- Progress billings for the audits of the Company's financial statements for 2017 and 2018; and
- Review of the Company's quarterly financial statements for 2018.

Fees for audit services billed in 2017 consisted of:

- Progress billings for the audits of the Company's financial statements for 2016 and 2017; and
- Review of the Company's quarterly financial statements for 2017.

**Audit Committee Pre-Approval Policies**

Our Audit Committee pre-approves all audit and permissible non-audit services provided by our independent public accountants on a case-by-case basis. Our Audit Committee approved 100% of the services performed by SingerLewak LLP in 2018 and 2017.



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**PART IV**

**Item 15. Exhibits, Financial Statement Schedules**

(a) The following documents are filed as a part of this report:

1. *Financial Statements*. See the Index to Consolidated Financial Statements on page 59.

2. *Exhibits*. See Item 15(b) below.

(b) *Exhibits*. The exhibits listed on the Exhibit Index, which appears at the end of this Item 15, are filed as part of, or are incorporated by reference into, this report.

(c) *Financial Statement Schedule*. See Item 15(a)(1) above.

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**EXHIBIT INDEX**

**Exhibit**

**Document Description**

**Number**

- 3.1 Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Form 8-K filed on May 20, 2016).
- 3.2 Amended and Restated ByLaws of Liquidmetal Technologies, Inc. (incorporated by reference to Exhibit 3.1 to the Form 8-K filed on October 5, 2015).
- 4.1 Reference is made to Exhibits 3.1 and 3.2.
- 4.2 Form of Common Stock Certificate (incorporated by reference to Exhibit 4.2 to the Form 10-Q filed on August 14, 2003).
- 10.1 Amended and Restated License Agreement, dated September 1, 2001, between Liquidmetal Technologies, Inc. and California Institute of Technology (incorporated by reference to Exhibit 10.1 to the Registration Statement on Form S-1 filed on November 20, 2001 (Registration No. 333-73716)).
- 10.2\* 2002 Equity Incentive Plan (incorporated by reference to Exhibit 10.23 to the Registration Statement on Form S-1 (Amendment No. 2) filed on April 5, 2002 (Registration No. 333-73716)).
- 10.3\* 2002 Non-Employee Director Stock Option Plan (incorporated by reference to Exhibit 10.24 to the Registration Statement on Form S-1 (Amendment No. 2) filed on April 5, 2002 (Registration No. 333-73716)).
- 10.4 Form of Indemnity Agreement between Liquidmetal Technologies, Inc. and directors and executive officers (incorporated by reference from Exhibit 10.59 to the Form 10-K filed on March 16, 2006).
- 10.5 Form of Common Stock Purchase Warrant issued in connection with the 8% Senior Secured Convertible Subordinated Notes (incorporated by reference from Exhibit 10.3 to the Form 8-K filed on May 7, 2009).
- 10.6\* Employment Agreement, dated August 3, 2010, between Thomas Steipp and Liquidmetal Technologies, Inc. (incorporated by reference from Exhibit 10.1 to the Form 10-Q filed on November 4, 2010).
- 10.7\*\* Master Transaction Agreement, dated August 5, 2010, among Apple Inc., Liquidmetal Technologies, Inc., Liquidmetal Coatings, LLC and Crucible Intellectual Property, LLC (incorporated by reference from Exhibit 10.3 to the Form 10-Q filed on November 4, 2010).
- 10.8\* Liquidmetal Technologies, Inc. 2012 Equity Incentive Plan (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on July 2, 2012).
- 10.9 Form of Warrant to Purchase Common Stock (incorporated by reference from Exhibit 10.4 to the Form 8-K filed on July 2, 2012).

- 10.1 Common Stock Purchase Warrant, dated June 1, 2012, issued to Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.39 to the Registration Statement on Form S-1 filed July 18, 2012)
- 10.11 Common Stock Purchase Warrant, dated June 28, 2012, issued to Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.40 to the Registration Statement on Form S-1 filed July 18, 2012)

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- 10.12 Amendment Number One to Master Transaction Agreement and Other Transaction Documents, dated June 15, 2012, among Apple Inc., Liquidmetal Technologies, Inc., Liquidmetal Coatings, LLC and Crucible Intellectual Property, LLC. (incorporated by reference from Exhibit 10.41 to the Registration Statement on Form S-1 (Amendment No. 1) filed on August 3, 2012).
- 10.13 Amendment Number Two to Master Transaction Agreement and Other Transaction Documents, dated May 19, 2014, among Apple Inc., Liquidmetal Technologies, Inc., Liquidmetal Coatings, LLC and Crucible Intellectual Property, LLC. (incorporated by reference from Exhibit 10.1 on the Form 10-Q filed on August 12, 2014).
- 10.14 Settlement Agreement and Mutual General Release, dated May 20, 2014, between Liquidmetal Technologies, Inc. and Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on May 20, 2014).
- 10.15 Amended and Restated VPC Sublicense Agreement, dated May 20, 2014, between Liquidmetal Technologies, Inc. and Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.2 to the Form 8-K filed on May 20, 2014).
- 10.16 Amended and Restated Registration Rights Agreement, dated May 20, 2014, between Liquidmetal Technologies, Inc. and Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.3 to the Form 8-K filed on May 20, 2014).
- 10.17 Amended and Restated Mutual Nondisclosure Agreement, dated May 20, 2014, between Liquidmetal Technologies, Inc. and Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.4 to the Form 8-K filed on May 20, 2014).
- 10.18 Amended and Restated Common Stock Purchase Warrant, dated May 20, 2014, issued to Visser Precision Cast, LLC. (incorporated by reference from Exhibit 10.5 to the Form 8-K filed on May 20, 2014).
- 10.19 Liquidmetal Technologies, Inc. 2015 Equity Incentive Plan (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on February 9, 2015).
- 10.20 Revolving Note, dated February 24, 2015, by Liquidmetal Technologies, Inc. in favor of City National Bank (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on February 26, 2015).
- 10.21 Security Agreement, dated February 24, 2015, by Liquidmetal Technologies, Inc. in favor of City National Bank (incorporated by reference from Exhibit 10.2 to the Form 8-K filed on February 26, 2015).
- 10.22 Amendment Number Three to Master Transaction Agreement and Other Transaction Documents, dated June 17, 2015, among Apple Inc., Liquidmetal Technologies, Inc., Liquidmetal Coatings, LLC and Crucible Intellectual Property, LLC (incorporated by reference from Exhibit 10.1 on the Form 10-Q filed on August 6, 2015).
- 10.23 Form of Director and Officer Indemnification Agreement (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on October 5, 2015).
- 10.24 Form of Amended and Restated Director and Officer Indemnification Agreement (incorporated by reference from Exhibit 10.2 to the Form 8-K filed on October 5, 2015).
- 10.25

Form of Amendment to Change of Control Agreement (incorporated by reference from Exhibit 10.3 to the Form 8-K filed on February 9, 2016).

10.26 Stock Purchase Warrant, dated March 10, 2016, issued to Liquidmetal Technology Limited by Liquidmetal Technologies, Inc. (incorporated by reference from Exhibit 4.1 to the Form 8-K filed on March 14, 2016).

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- 10.27 Securities Purchase Agreement, dated March 10, 2016, between Liquidmetal Technologies, Inc. and Liquidmetal Technology Limited (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on March 14, 2016).
- 10.28 Parallel License Agreement, dated March 10, 2016, between Liquidmetal Technologies, Inc. and DongGuan Eontec Co., Ltd. (incorporated by reference from Exhibit 10.2 to the Form 8-K filed on March 14, 2016).
- 10.29\* Amended and Restated Employment Agreement, dated March 10, 2016, between Thomas Steipp and Liquidmetal Technologies, Inc. (incorporated by reference from Exhibit 10.3 to the Form 8-K filed on March 14, 2016).
- 10.30 Form of Amendment of Change of Control Agreement (incorporated by reference from Exhibit 10.4 to the Form 8-K filed on March 14, 2016).
- 10.31 Amendment to Securities Purchase Agreement, dated August 17, 2016, between Liquidmetal Technologies, Inc. and Liquidmetal Technology Limited (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on August 17, 2016).
- 10.32 Separation and Mutual Release Agreement, dated November 17, 2016, between Liquidmetal Technologies, Inc. and Thomas Steipp (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on November 21, 2016).
- 10.33 Separation Agreement and General Release, dated August 16, 2017, between Liquidmetal Technologies, Inc. and Tony Chung (incorporated by reference to Exhibit 10.1 to the Form 8-K filed on August 22, 2017).
- 10.34\* Employment agreement, dated November 15, 2018, between Liquidmetal Technologies, Inc. and Bruce Bromage (incorporated by reference from Exhibit 10.1 to the Form 8-K filed on November 21, 2018).
- 10.35\* Employment agreement, dated November 15, 2018, between Liquidmetal Technologies, Inc. and Bryce Van (incorporated by reference from Exhibit 10.2 to the Form 8-K filed on November 21, 2018).
- 14 Code of Ethics for Chief Executive Officer and Senior Financial and Accounting Officers (incorporated by reference to Exhibit 14 to the Form 10-K filed on November 10, 2004).
- 21.1 Subsidiaries of the Registrant.
- 24.1 Power of Attorney relating to subsequent amendments (included on the signature page(s) of this report).
- 31.1 Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as amended.
- 31.2 Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as amended.
- 32.1 Certification pursuant to 18 U.S.C. Section 1350.
- 101 The following financial statements from Liquidmetal Technologies, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018, formatted in XBRL (eXtensible Business Reporting Language): (i)

Consolidated Balance Sheets, (ii) Consolidated Statements of Operations and Comprehensive Loss, (iii) Consolidated Statements of Shareholder's Equity, (iv) Consolidated Statements of Cash Flows, and (v) Notes to Consolidated Financial Statements.

\* Denotes a management contract or compensatory plan or arrangement.

\*\* Portions of this exhibit have been omitted pursuant to a confidential treatment request. Omitted information has been filed separately with the Securities and Exchange Commission.

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**Item 16. Form 10-K Summary**

None.

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**SIGNATURES**

Pursuant to the requirements of 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.

**Liquidmetal Technologies, Inc.**

By: /s/ Lugee Li  
Lugee Li

President and Chief Executive Officer

(Principal Executive Officer)

Date: March 5, 2019

KNOW ALL THESE PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Lugee Li and Bryce Van and each of them, jointly and severally, his attorneys-in-fact, each with full power of substitution, for him in any and all capacities, to sign any and all amendments to this Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each said attorneys-in-fact or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated:

<b>Signature</b>	<b>Title</b>	<b>Date</b>
/s/ Lugee Li	President, Chief Executive Officer and Director	
Lugee Li	(Principal Executive Officer)	March 5, 2019
/s/ Bryce Van	Vice President of Finance	
Bryce Van		March 5, 2019

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(Principal Financial Officer and Principal Accounting Officer)

/s/ Abdi Mahamed Abdi Mahamed	Director	March 5, 2019
/s/ Isaac Bresnick Isaac Bresnick	Director	March 5, 2019
/s/ Vincent Carrubba Vincent Carrubba	Director	March 5, 2019
/s/ Walter Weyler Walter Weyler	Director	March 5, 2019
/s/ Tony Chung Tony Chung	Director	March 5, 2019

Certifications provided as Exhibits.

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**Report of Independent Registered Public Accounting Firm**

To the Shareholders and the Board of Directors of Liquidmetal Technologies, Inc.

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Liquidmetal Technologies, Inc. and its subsidiaries (collectively, the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes to the consolidated financial statements and the Financial Statement Schedule listed in Item 15(a) (collectively, 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, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013, and our report dated March 5, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates

made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ SingerLewak LLP

We have served as the Company's auditor since 2011.

Los Angeles, California

March 5, 2019

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Table of Contents**LIQUIDMETAL TECHNOLOGIES, INC. AND SUBSIDIARIES****CONSOLIDATED BALANCE SHEETS****(in thousands, except share and per share data)**

	<b>December 31, 2018</b>	<b>December 31, 2017</b>
<b><u>ASSETS</u></b>		
Current assets:		
Cash and cash equivalents	\$35,229	\$41,309
Restricted cash	5	5
Trade accounts receivable, net of allowance for doubtful accounts	120	157
Inventory	31	391
Prepaid expenses and other current assets	363	326
<b>Total current assets</b>	<b>\$35,748</b>	<b>\$42,188</b>
Property and equipment, net	11,767	12,465
Patents and trademarks, net	322	408
Other assets	14	14
<b>Total assets</b>	<b>\$47,851</b>	<b>\$55,075</b>
<b><u>LIABILITIES AND SHAREHOLDERS' EQUITY</u></b>		
Current liabilities:		
Short-term debt	-	-
Accounts payable	253	92
Accrued liabilities	270	365
Deferred revenue	31	7
Warrant liabilities, current	-	-
Option liabilities	-	-
<b>Total current liabilities</b>	<b>\$554</b>	<b>\$464</b>
Long-term liabilities		
Warrant liabilities, long-term	925	2,192
Other long-term liabilities	856	856
<b>Total liabilities</b>	<b>\$2,335</b>	<b>\$3,512</b>
Shareholders' equity:		
Preferred Stock, \$0.001 par value; 10,000,000 shares authorized; 0 shares issued and outstanding at December 31, 2018 and December 31, 2017, respective	-	-
Common stock, \$0.001 par value; 1,100,000,000 shares authorized; 914,206,832 and 908,768,116 shares issued and outstanding at December 31, 2018 and December 31, 2017,	914	909

respectively

Warrants	18,179	18,179
Additional paid-in capital	279,306	277,924
Accumulated deficit	(252,809)	(245,376)
Non-controlling interest in subsidiary	(74 )	(73 )
<b>Total shareholders' equity</b>	<b>\$45,516</b>	<b>\$51,563</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$47,851</b>	<b>\$55,075</b>

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

Table of Contents**LIQUIDMETAL TECHNOLOGIES, INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS**

(in thousands, except share and per share data)

	<b>Years Ended December 31,</b>		
	<b>2018</b>	<b>2017</b>	<b>2016</b>
Revenue			
Products	\$484	\$255	\$453
Licensing and royalties	48	66	27
<b>Total revenue</b>	<b>532</b>	<b>321</b>	<b>480</b>
Cost of sales	1,164	696	553
<b>Gross loss</b>	<b>(632)</b>	<b>) (375)</b>	<b>) (73)</b>
Operating expenses			
Selling, marketing, general and administrative	5,899	6,265	7,472
Research and development	2,429	1,962	2,342
<b>Total operating expenses</b>	<b>8,328</b>	<b>8,227</b>	<b>9,814</b>
<b>Operating loss</b>	<b>(8,960)</b>	<b>) (8,602)</b>	<b>) (9,887)</b>
Change in value of warrants, gain (loss)	1,267	(143)	) (4,117)
Change in value of option liabilities, loss	-	-	) (2,613)
Loss on contract modification	-	-	) (2,126)
Interest expense	-	-	) (9)
Interest income	259	55	-
<b>Loss before income taxes</b>	<b>(7,434)</b>	<b>) (8,690)</b>	<b>) (18,752)</b>
Income taxes	-	-	-
<b>Net loss and comprehensive loss</b>	<b>(7,434)</b>	<b>) (8,690)</b>	<b>) (18,752)</b>
Net loss attributable to non-controlling interest	1	3	8
<b>Net loss and comprehensive loss attributable to Liquidmetal Technologies shareholders</b>	<b>(7,433)</b>	<b>) (8,687)</b>	<b>) (18,744)</b>
Per common share basic and diluted:			
Net loss per common share attributable to Liquidmetal Technologies shareholders, basic	\$(0.01)	) \$(0.01)	) \$(0.03)
	\$(0.01)	) \$(0.01)	) \$(0.03)



Net loss per common share attributable to Liquidmetal Technologies  
shareholders, diluted

Number of weighted average shares - basic	910,546,059	897,273,890	640,157,919
Number of weighted average shares - diluted	910,546,059	897,273,890	640,157,919

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

Table of Contents**LIQUIDMETAL TECHNOLOGIES, INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**

(in thousands, except share and per share data)

	Preferred Shares	Common Shares	Common Stock	Warrants part of Additional Paid-in Capital	Additional Paid-in Capital	Accumulated Deficit	Non- controlling Interest	Total
<b>Balance, December 31, 2015</b>	-	477,149,485	\$ 477	\$ 18,179	\$ 203,735	\$ (217,945 )	\$ (62 )	\$ 4,384
Common stock issuance, net of issuance costs	-	405,000,000	405	-	60,974	-	-	61,379
Stock option exercises	-	2,197,199	2	-	204	-	-	206
Stock-based compensation	-	-	-	-	1,694	-	-	1,694
Written call options	-	-	-	-	3,124	-	-	3,124
Loss on contract modification	-	-	-	-	2,126	-	-	2,126
Cashless warrant exercises	-	1,743,480	2	-	663	-	-	665
Net loss	-	-	-	-	-	(18,744 )	(8 )	(18,752)
<b>Balance, December 31, 2016</b>	-	886,090,164	\$ 886	\$ 18,179	\$ 272,520	\$ (236,689 )	\$ (70 )	\$ 54,826
Stock option exercises	-	10,978,664	11	-	1,227	-	-	1,238
Stock-based compensation	-	-	-	-	1,255	-	-	1,255
Warrant exercises	-	11,699,288	12	-	2,922	-	-	2,934
Net loss	-	-	-	-	-	(8,687 )	(3 )	(8,690 )
<b>Balance, December 31, 2017</b>	-	908,768,116	\$ 909	\$ 18,179	\$ 277,924	\$ (245,376 )	\$ (73 )	\$ 51,563
Stock option exercises	-	5,438,716	5	-	458	-	-	463
Stock-based compensation	-	-	-	-	924	-	-	924
Net loss	-	-	-	-	-	(7,433 )	(1 )	(7,434 )
<b>Balance, December 31, 2018</b>	-	914,206,832	914	18,179	279,306	(252,809 )	(74 )	45,516

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

Table of Contents**LIQUIDMETAL TECHNOLOGIES, INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF CASH FLOWS**

(in thousands, except share and per share data)

	<b>Years Ended December 31,</b>		
	<b>2018</b>	<b>2017</b>	<b>2016</b>
<b>Operating activities:</b>			
Net loss	\$(7,434 )	\$(8,690 )	\$(18,752)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	1,078	634	527
Stock-based compensation	924	1,255	1,694
Loss on contract modification	-	-	2,126
Loss (gain) from change in value of warrants	(1,267 )	143	4,117
Loss from change in value of option liabilities	-	-	2,613
Changes in operating assets and liabilities:			
Trade accounts receivable	37	(62 )	(65 )
Inventory	360	(1 )	(307 )
Prepaid expenses and other current assets	(37 )	(14 )	96
Other assets	-	22	(5 )
Accounts payable and accrued liabilities	64	(944 )	204
Deferred revenue	24	(6 )	(64 )
<b>Net cash used in operating activities</b>	<b>(6,251 )</b>	<b>(7,663 )</b>	<b>(7,816 )</b>
<b>Investing Activities:</b>			
Purchases of property and equipment	(292 )	(11,874)	(198 )
Investment in patents and trademarks	-	-	(22 )
<b>Net cash used in investing activities</b>	<b>(292 )</b>	<b>(11,874)</b>	<b>(220 )</b>
<b>Financing Activities:</b>			
Repayment of short-term debt	-	-	(700 )
Proceeds from exercise of stock options	463	1,238	206
Proceeds from exercise of warrants	-	712	-
Proceeds from stock issuance, net of issuance costs	-	-	62,650
<b>Net cash provided by financing activities</b>	<b>463</b>	<b>1,950</b>	<b>62,156</b>
<b>Net increase (decrease) in cash, cash equivalents, and restricted cash</b>	<b>(6,080 )</b>	<b>(17,587)</b>	<b>54,120</b>
<b>Cash, cash equivalents, and restricted cash at beginning of period</b>	<b>41,314</b>	<b>58,901</b>	<b>4,781</b>
<b>Cash, cash equivalents, and restricted cash at end of period</b>	<b>\$35,234</b>	<b>\$41,314</b>	<b>\$58,901</b>

**Supplemental Schedule of Non-Cash Financing Activities:**

Cashless exercise of warrants	-	2,222	665
Accrued capital expenditures	2	-	-

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

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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**(in thousands, except share and per share data)**

**1. Description of Business**

Liquidmetal Technologies, Inc. (the “Company”) is a materials technology and manufacturing company that develops and commercializes products made from amorphous alloys. The Company’s family of alloys consists of a variety of bulk alloys and composites that utilizes the advantages offered by amorphous alloys technology. The Company designs, develops, manufactures and sells products and custom parts from bulk amorphous alloys to customers in a wide range of industries. The Company also partners with third-party manufacturers and licensees to develop and commercialize Liquidmetal alloy products.

Amorphous alloys are, in general, unique materials that are distinguished by their ability to retain a random atomic structure when they solidify, in contrast to the crystalline atomic structure that forms in other metals and alloys when they solidify. Liquidmetal alloys are proprietary amorphous alloys that possess a combination of performance, processing, and potential cost advantages that the Company believes will make them preferable to other materials in a variety of applications. The amorphous atomic structure of bulk alloys enables them to overcome certain performance limitations caused by inherent weaknesses in crystalline atomic structures, thus facilitating performance and processing characteristics superior in many ways to those of their crystalline counterparts. The Company’s alloys and the molding technologies it employs results in components that exhibit: exceptional dimensional control and repeatability that rivals precision machining, excellent corrosion resistance, brilliant surface finish, high strength, high hardness, high elastic limit, alloys that are non-magnetic, and the ability to form complex shapes common to the injection molding of plastics. Interestingly, all of these characteristics are achievable from the molding process, so design engineers do not have to select specific alloys to achieve one or more of the characteristics as is the case with crystalline materials. The Company believes these advantages could result in Liquidmetal alloys supplanting high-performance alloys, such as titanium and stainless steel, and other incumbent materials in a wide variety of applications. Moreover, the Company believes these advantages could enable the introduction of entirely new products and applications that are not possible or commercially viable with other materials.

The Company’s revenues are derived from i) selling bulk Liquidmetal alloy products to customers who produce medical devices, automotive assemblies, sports and leisure goods, and non-consumer electronic devices, ii) selling tooling and prototype parts such as demonstration parts and test samples for customers with products in development, iii) product licensing and royalty revenue, and iv) research and development revenue. The Company expects that these sources of revenue will continue to significantly change the character of the Company’s revenue mix.

## 2. Summary of Significant Accounting Policies

*Principles of Consolidation.* The consolidated financial statements include the accounts of Liquidmetal Technologies, Inc., its special-purpose wholly-owned subsidiary, Crucible Intellectual Property LLC, 20321 Valencia LLC, and Liquidmetal Golf. All intercompany balances and transactions have been eliminated.

*Non-Controlling Interest.* The results of operations attributable to the non-controlling interest of Liquidmetal Golf are presented within equity and are shown separately from the Company's equity.

*Revenue Recognition.* Revenue is recognized pursuant to applicable accounting standards including FASB ASC Topic 606 ("ASC 605"), Revenue from Contracts with Customers. ASC 606 summarizes certain points in applying generally accepted accounting principles to revenue recognition in financial statements and provides guidance on revenue recognition issues in the absence of authoritative literature addressing a specific arrangement or a specific industry.

The Company's revenue recognition policy complies with the requirements of ASC 606. As a majority of the Company's sales revenue continues to be recognized when products are shipped from its manufacturing facility, and there was no change in the recognition model historically applied to active license and royalty contracts under the new revenue standard, there was no adjustment to the opening balance of retained earnings. The impact to the Company's results of operations is not material, on an on-going basis, because the analysis of the Company's contracts under the new revenue standard supports a recognition model consistent with the Company's previous revenue recognition model. Revenue on the majority of the Company's contracts will continue to be recognized over time because of the continuous transfer of control to the customer.

*Products.* Product revenues are primarily generated from the sale and prototyping of molds and bulk alloy products. Revenue is recognized when i) persuasive evidence of an arrangement exists, ii) delivery has occurred, iii) the sales price is fixed or determinable, iv) collection is probable and v) all obligations have been substantially performed pursuant to the terms of the arrangement. When the Company receives consideration, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, it records deferred revenue, which represents a contract liability. The Company will recognize deferred revenue as products revenue after it has transferred control of the goods or services to the customer and all revenue recognition criteria are met. Such amounts are not expected to be material on an ongoing basis.

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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**(in thousands, except share and per share data)**

*Licensing and royalties.* License revenue arrangements in general provide for the grant of an exclusive or non-exclusive right to manufacture and/or sell products covered by patented technologies owned or controlled by the Company. The intellectual property rights granted may be perpetual in nature, extending until the expiration of the related patents, or can be granted for a defined period of time. Licensing revenues that are one-time fees upon the granting of the license are recognized when i) the license term begins in a manner consistent with the nature of the transaction and the earnings process is complete, ii) when collectability is reasonably assured or upon receipt of an upfront fee, and iii) when all other revenue recognition criteria have been met. Pursuant to the terms of these agreements, the Company has no further obligation with respect to the grant of the license. Licensing revenues that are related to royalties are recognized as the royalties are earned over the related period.

*Practical Expedients and Exemptions.* The Company generally expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within selling, marketing, general and administrative expenses. The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which the Company recognizes revenue at the amount for which it has the right to invoice for services performed.

*Cash and cash equivalents.* The Company considers all highly liquid investments with maturity dates of three months or less when purchased to be cash equivalents. The Company limits the amount of credit exposure to each individual financial institution and places its temporary cash into investments of high credit quality with a financial institution that exceeds federally insured limits. The Company has not experienced any losses related to these balances and believes its credit risk to be minimal. As of December 31, 2018 and 2017, the Company held deposits of \$15,187 and 0, respectively, in such highly liquid investments.

*Trade Accounts Receivable.* The Company grants credit to its customers generally in the form of short-term trade accounts receivable. The creditworthiness of customers is evaluated prior to signing a contract with the customer. As of December 31, 2018, three customers represented 90%, or \$108, of the total outstanding trade accounts receivable. As of December 31, 2017, three customers represented 84%, or \$131, of the total outstanding trade accounts receivable. During 2018, there were three major customers, who together accounted for 66% of total revenue. During 2017, there were five major customers, who together accounted for 63% of total revenue. During 2016, there were three major customers, who together accounted for 73% of total revenue. In the future, the Company expects that a significant portion of the revenue may continue to be concentrated in a limited number of customers, even if the bulk alloys business grows.



The allowance for doubtful accounts reflects management's best estimate of probable losses inherent in the trade accounts receivable. Management primarily determines the allowance based on the aging of accounts receivable balances, historical write-off experience, customer concentrations, customer creditworthiness and current industry and economic trends. The Company's provisions for uncollectible receivables are included in selling, marketing, general and administrative expense in the consolidated statements of operations and comprehensive loss. At December 31, 2018 and 2017, the Company had not recorded an allowance for doubtful accounts.

*Inventory.* Inventory is stated at the lower of weighted-average cost or net realizable value. Inventory is recorded at actual cost when purchased and then expensed at weighted-average cost as used in production and/or shipped to satisfy customer orders. We perform an analysis of our inventory balances at least quarterly to determine if the carrying amount of inventories exceeds their net realizable value. The analysis of estimated net realizable value is based on customer orders, market trends and historical pricing. If the carrying amount exceeds the estimated net realizable value, the carrying amount is reduced to the estimated net realizable value.

*Property and Equipment.* Property and equipment are stated at cost less accumulated depreciation and amortization. Additions and major renewals are capitalized. Repairs and maintenance are charged to expense as incurred. Upon disposal, the related cost and accumulated depreciation are removed from the accounts, with the resulting gain or loss included in operating income. Depreciation is provided principally on the straight-line method over the estimated useful lives of the assets, which range from one to five years.

*Intangible Assets.* Intangible assets consist of the costs incurred to purchase patent rights and costs incurred to register and maintain patents and trademarks. Intangible assets are reported at cost, net of accumulated amortization. Patents and trademarks are amortized using the straight-line method over a period based on their contractual lives ranging from ten to seventeen years.

*Impairment of Long-lived Assets.* The Company reviews long-lived assets to be held and used in operations for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may be impaired. These evaluations may result from significant decreases in the overall market outlook for the Company's technology or the market price of an asset, a significant adverse change in the extent or manner in which an asset is being used in its physical condition, a significant adverse change in legal factors or in the business climate that could affect the value of an asset, as well as economic or operational analyses. An impairment loss is recognized when the estimated fair value of the assets is less than the carrying value of the assets. Based on the Company's review of both qualitative and quantitative factors no impairment charges have been recognized during the years ended December 31, 2018, 2017, and 2016, respectively.

*Fair Value Measurements.* The estimated fair values of financial instruments reported in the consolidated financial statements have been determined using available market information and valuation methodologies, as applicable. The fair value of cash and restricted cash approximate their carrying value due to their short maturities and are classified as Level 1 instruments within the fair value hierarchy.



Table of Contents**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS****(in thousands, except share and per share data)**

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Entities are required to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value based upon the following fair value hierarchy:

Level 1 — Quoted prices in active markets for identical assets or liabilities;

Level 2 — Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company has several financial instruments, namely warrant liabilities that are recorded at fair value on a periodic basis using Level 2 measurement inputs. These instruments are evaluated under the hierarchy of FASB ASC Subtopic 480-10, FASB ASC Paragraph 815-25-1 and FASB ASC Subparagraph 815-10-15-74 addressing the accounting for certain financial instruments with characteristics of both liabilities and equity and derivative accounting. The fair value of such instruments is estimated using the Black-Scholes option pricing model. Due to the presence of certain anti-dilution and exercise price reset provisions, such instruments are required to be classified as liabilities (see notes 11 and 12).

As of December 31, 2018, the following table represents the Company's fair value hierarchy for items that are required to be measured at fair value on a recurring basis:

	<b>Fair Value</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
Warrant liabilities (current)	-	-	-	-
Warrant liabilities (long-term)	925	-	925	-

As of December 31, 2017, the following table represents the Company's fair value hierarchy for items that are required to be measured at fair value on a recurring basis:

	<b>Fair Value</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
Warrant liabilities (current)	-	-	-	-
Warrant liabilities (long-term)	2,192	-	2,192	-

*Research and Development Expenses.* Research and development expenses represent salaries, related benefits expense, expenses incurred for the design and testing of new processing methods and other expenses related to the research and development of Liquidmetal alloys. Development costs incurred in research and development activities are expensed as incurred.

*Advertising and Promotion Expenses.* Advertising and promotion expenses are expensed when incurred. Advertising and promotion expenses were \$125, \$154 and \$83, for the years ended December 31, 2018, 2017 and 2016, respectively.

*Legal Costs.* Legal costs are expensed as incurred.

*Stock-Based Compensation.* The Company accounts for share-based compensation in accordance with the fair value recognition provisions of FASB ASC Topic 718, *Share-based Payment*, which requires all share-based payments to employees, including grants of employee stock options, to be recognized in the consolidated financial statements based on their fair values. The fair value of stock options is calculated by using the Black-Scholes option pricing formula that requires estimates for expected volatility, expected dividends, the risk-free interest rate and the term of the option. If any of the assumptions used in the Black-Scholes model change significantly, share-based compensation expense may differ materially in the future from that recorded in the current period.

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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**(in thousands, except share and per share data)**

*Income Taxes.* Income taxes are provided under the asset and liability method as required by FASB ASC Topic 740, *Accounting for Income Taxes*. Under this method, deferred income taxes are recognized for the tax consequences of “temporary differences” by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities. The effect of a tax rate change on deferred taxes is recognized in operations in the period that the change in the rate is enacted. Valuation allowances are established when necessary to reduce net deferred tax assets to the amount expected to be realized. Under the provisions of FASB ASC Topic 740, the Company had no material unrecognized tax positions and no adjustments to liabilities or operations were required. The Company, when applicable, will recognize interest and penalties related to uncertain tax positions in income tax expense. There was no expense related to interest and penalties for the years ended December 31, 2018, 2017 and 2016, respectively.

*Earnings Per Share.* Basic earnings per share (“EPS”) is computed by dividing earnings (losses) attributable to common shareholders by the weighted average number of common shares outstanding for the periods. Diluted EPS reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock.

*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 disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reported periods. Actual results could differ from those estimates. These management estimates are primarily related to impairment of long-lived assets, allowance for bad debt, warrant valuations, and inventory valuation.

*Subsequent Events.* The Company evaluated subsequent events through the filing of its Annual Report on Form 10-K with the SEC.

*Supplemental Cash Flow Information.* Cash payments for interest were \$0, \$0, and \$9 in the years ended December 31, 2018, 2017, and 2016, respectively.

***Recent Accounting Pronouncements.***

*Leases*

In February 2016, the FASB issued an accounting standards update which modifies the accounting for leasing arrangements, particularly those arrangements classified as operating leases. This update will require entities to recognize the assets and liabilities arising from operating leases on the balance sheet. This guidance is effective for fiscal and interim periods beginning after December 15, 2018 and is required to be applied retrospectively to all leasing arrangements. The adoption of this guidance is not expected to have a significant impact on the Company's consolidated financial statements.

*Liability Classified Warrants*

In July 2017, the FASB issued an accounting standards update which modifies the requirements for the classification of certain financial instruments with down round features as equity versus liabilities. The guidance will allow for financial instruments, previously required to be presented as liabilities due to the presence of down round features, to be presented as equity upon meeting other criteria. This guidance is effective for fiscal and interim periods beginning after December 15, 2018 and is required to be applied retrospectively to all financial instruments with down round features. The requirements applicable to the revised standard will be adopted using the full retrospective method during the first quarter of the year ending December 31, 2019. The Company expects the adoption of this guidance will have a significant impact on the consolidated balance sheet and statement of operations, particularly allocations between long term liabilities and the components of shareholders equity.

Other recent accounting pronouncements issued by the FASB (including its Emerging Issues Task Force), the AICPA and the SEC did not or are not believed by management to have a material impact on the Company's present or future consolidated financial statements.

**3. Significant Transactions**

***Manufacturing Facility Purchase***

On February 16, 2017, the Company purchased a 41,000 square foot manufacturing facility located in Lake Forest, CA, where operations commenced during July 2017. The purchase price for the property was \$7,818.



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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**(in thousands, except share and per share data)**

***2016 Purchase Agreement***

On March 10, 2016, the Company entered into a Securities Purchase Agreement (the “2016 Purchase Agreement”) with Liquidmetal Technology Limited, a Hong Kong company (the “Investor”), which is 100% owned by the Company’s Chairman and CEO, Professor Lugee Li (“Professor Li”). The 2016 Purchase Agreement provided for the purchase by the Investor of a total of 405,000,000 shares of the Company’s common stock for an aggregate purchase price of \$63,400. The transaction occurred in multiple closings, with the Investor having purchased 105,000,000 shares at a purchase price of \$8,400 (or \$0.08 per share) at the initial closing on March 10, 2016 and the remaining 200,000,000 shares at \$0.15 per share and 100,000,000 shares at \$0.25 per share for an aggregate purchase price of \$55,000 on October 26, 2016.

In addition to the shares issuable under the 2016 Purchase Agreement, the Company issued to the Investor a warrant to acquire 10,066,809 shares of common stock (of which 2,609,913 of the warrant shares vested on March 10, 2016 and the remaining 7,456,896 warrant shares vested on October 26, 2016 at an exercise price of \$0.07 per share). The warrant will expire on the tenth anniversary of its issuance date.

Further, the 2016 Purchase Agreement provided that the Investor would have the right to designate three members of the Company’s board of directors, with one such member serving as Chairman. The 2016 Purchase Agreement also provided that, with certain limited exceptions, if the Company issues any shares of common stock at any time through the fifth anniversary of the 2016 Purchase Agreement, the Investor will have a preemptive right to subscribe for and to purchase at the same price per share (or at market price, in the case of issuance of shares pursuant to stock options) the number of shares necessary to maintain its ownership percentage of Company-issued shares of common stock.

***Eontec License Agreement***

On March 10, 2016, in connection with the 2016 Purchase Agreement, the Company and DongGuan Eontec Co., Ltd., a Hong Kong corporation (“Eontec”), entered into a Parallel License Agreement (the “License Agreement”) pursuant to which the Company and Eontec agreed to cross-license their respective technologies. The Company’s Chairman and CEO, Professor Li, is also a major shareholder and Chairman of Eontec.



The License Agreement provides for the cross-license of certain patents, technical information, and trademarks between the Company and Eontec. In particular, the Company granted to Eontec a paid-up, royalty-free, perpetual license to the Company's patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of North America and Europe. In turn, Eontec granted to the Company a paid-up, royalty-free, perpetual license to Eontec's patents and related technical information to make, have made, use, offer to sell, sell, export and import products in certain geographic areas outside of specified countries in Asia. The license granted by the Company to Eontec is exclusive (including to the exclusion of the Company) in the countries of Brunei, Cambodia, China (P.R.C and R.O.C.), East Timor, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, South Korea, Thailand and Vietnam. The license granted by Eontec to the Company is exclusive (including to the exclusion of Eontec) in North America and Europe. The cross-licenses are non-exclusive in geographic areas outside of the foregoing exclusive territories.

Beyond the License Agreement, the Company collaborates with Eontec to accelerate the commercialization of amorphous alloy technology. This includes but is not limited to developing technologies to reduce the cost of amorphous alloys, working on die cast machine technology platforms to pursue broader markets, sharing knowledge to broaden our intellectual property portfolio, and utilizing Eontec's volume production capabilities as a third party contract manufacturer.

During March 2017, the Company signed contracts with Eontec to purchase two hot-crucible amorphous metal molding machines ("Machines") at a total purchase price of \$780. The Machines were delivered to the Company's new manufacturing facility located in Lake Forest, CA in April 2017 and were operational during the fourth quarter of 2017.

#### ***2014 Purchase Agreement***

On August 20, 2014, the Company entered into a common stock purchase agreement ("2014 Purchase Agreement") with Aspire Capital Fund LLC ("Aspire Capital"), which provided that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital would be committed to purchase up to an aggregate of \$30,000 worth of the Company's common stock, \$0.001 par value, over the 36-month term of the 2014 Purchase Agreement.

On March 9, 2016, the Company terminated the 2014 Purchase Agreement. As of the date of termination, the Company had received an aggregate of \$1,568 under the 2014 Purchase Agreement through the issuance of 12,500,000 shares of its common stock at a weighted average price of \$0.13 per share.

#### ***Line of Credit Facility***

In February 2015, the Company entered into a \$2,000 line of credit facility, with a fixed interest rate of 2.1%, which originally matured on February 13, 2016. The facility was extended through August 25, 2016, with reductions in available borrowings and associated collateral requirements to \$1,000. On August 26, 2016, the Company fully repaid all outstanding principal and accrued interest balances due under the facility. As of such date, all collateral to the facility was released. Interest expense applicable to these borrowings was \$0 for the year ended December 31, 2018, \$0 for the year ended December 31, 2017, and \$9 for the year ended December 31, 2016.

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***2013 Stock Purchase Agreement***

On November 8, 2013, the Company entered into a Common Stock Purchase Agreement (the “2013 Purchase Agreement”) with certain investors that provided that the investors would purchase up to \$20,000 worth of the Company’s common stock over a 36-month term. In consideration for the execution and delivery of the 2013 Purchase Agreement, on November 8, 2013, the Company issued 2,666,667 shares of common stock to the investors.

On August 22, 2014, the Company voluntarily terminated the 2013 Purchase Agreement, effective August 25, 2014. As of the date of termination, the Company had received an aggregate of \$16,000 under the 2013 Purchase Agreement through the issuance of 85,355,615 shares of its common stock at a weighted average price of \$0.19 per share.

***July 2012 Private Placement***

On July 2, 2012, the Company entered into a private placement transaction (the “July 2012 Private Placement”) pursuant to which the Company issued \$12,000 in principal amount of senior convertible notes that were due on September 1, 2013. The notes were convertible into shares of the Company’s common stock at a conversion price of \$0.352 per share. The notes bore interest at 8% per annum and were payable in twelve equal monthly installments of principal and interest beginning on October 1, 2012. As of July 17, 2013, the Company had issued 163,641,547 shares of common stock in full satisfaction of the notes (see note 14).

As a part of the July 2012 Private Placement, the Company issued warrants to purchase 18,750,000 shares of the Company’s common stock at an exercise price of \$0.384 per share (reduced to \$0.17 per share under the anti-dilution and price reset provisions of the warrants). (see note 11).

***Apple License Transaction***

On August 5, 2010, the Company entered into a license transaction with Apple Inc. (“Apple”) pursuant to which (i) the Company contributed substantially all of its intellectual property assets to a newly organized special-purpose, wholly-owned subsidiary, called Crucible Intellectual Property, LLC (“CIP”), (ii) CIP granted to Apple a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in the field of consumer electronic products, as defined in the license agreement, in exchange for a license fee, and (iii) CIP granted back to the Company a perpetual, worldwide, fully-paid, exclusive license to commercialize such intellectual property in all other fields of use.

Under the agreements relating to the license transaction with Apple, the Company was obligated to contribute, to CIP, all intellectual property developed through February 2016. The Company is also obligated to maintain certain limited liability company formalities with respect to CIP at all times after the closing of the license transaction.

#### *Visser Precision Cast, LLC License Agreement*

On June 1, 2012, the Company entered into a Master Transaction Agreement (the “Visser MTA”) with Visser Precision Cast, LLC (“Visser”) relating to a strategic transaction for manufacturing services and financing. On May 20, 2014, the Company and Visser entered into a settlement agreement significantly amending the Visser MTA, whereby the Company granted to Visser a fully paid-up, royalty-free, irrevocable, perpetual, worldwide, non-transferable, nonexclusive sublicense to all of the Company’s intellectual property developed on or prior to May 20, 2014 (the “Effective Date”). Visser does not have any rights, now or in the future, to intellectual property of the Company developed after the Effective Date. The license to the Company’s intellectual property developed on or prior to the Effective Date does not include the right to use the “Liquidmetal” trademark or any of the Company’s other trademarks, except in certain defined situations, as set forth in the amended and restated agreement.

In addition, the settlement amended and restated the two warrants the Company issued to Visser in June 2012 to purchase 15,000,000 shares of the Company’s common stock at an exercise price of \$0.22 per share. The amended and restated warrant agreement includes the effect of anti-dilution adjustments and is exercisable for 21,317,094 shares at an exercise price of \$0.16 per share under the anti-dilution provisions of the warrants (see Note 11).

#### *Other License Transactions*

On January 31, 2012, the Company entered into a Supply and License Agreement for a five year term with Engel Austria GmbH (“Engel”) whereby Engel was granted a non-exclusive license to manufacture and sell injection molding machines to the Company’s licensees. Since that time, the Company and Engel have agreed on an injection molding machine configuration that can be commercially supplied and supported by Engel. On December 6, 2013, the companies entered into an Exclusivity Agreement for a 10 year term whereby the Company agreed, with certain exceptions and limitations, that the Company and its licensees would purchase amorphous alloy injection molding machines exclusively from Engel in exchange for certain royalties to be paid by Engel to the Company based on a percentage of the net sales price of such injection molding machines.



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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

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**(in thousands, except share and per share data)**

The Company's Liquidmetal Golf subsidiary has the exclusive right and license to utilize the Company's Liquidmetal alloy technology for purposes of golf equipment applications. This right and license is set forth in an intercompany license agreement between Liquidmetal Technologies and Liquidmetal Golf. This license agreement provides that Liquidmetal Golf has a perpetual and exclusive license to use Liquidmetal alloy technology for the purpose of manufacturing, marketing, and selling golf club parts and other products used in the sport of golf. The Company owns 79% of the outstanding common stock of Liquidmetal Golf.

In June 2003, the Company entered into an exclusive license agreement with LLPG, Inc. ("LLPG"). Under the terms of the agreement, LLPG has the exclusive right to commercialize Liquidmetal alloys, particularly precious-metal based compositions, in jewelry and high-end luxury product markets. The Company, in turn, will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by LLPG. The exclusive license agreement with LLPG expires on December 31, 2021.

In March 2009, the Company entered into a license agreement with Swatch Group, Ltd. ("Swatch") under which Swatch was granted a non-exclusive license to the Company's technology to produce and market watches and certain other luxury products. In March 2011, this license agreement was amended to grant Swatch exclusive rights as to watches, but non-exclusive as to Apple, and the Company's license agreement with LLPG was simultaneously amended to exclude watches from LLPG's rights. The Company will receive royalty payments over the life of the contract on all Liquidmetal products produced and sold by Swatch. The license agreement with Swatch will expire on the expiration date of the last licensed patent.

**4. Trade accounts receivable**

Trade accounts receivable were comprised of the following:

**December  
31,**

	<b>2018</b>	<b>2017</b>
Trade accounts receivable	\$120	\$157
Less: Allowance for doubtful accounts	-	-
Trade accounts receivable	\$120	\$157

## 5. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets totaled \$363 and \$326 as of December 31, 2018 and December 31, 2017, respectively. Included within these totals are the following:

	<b>December 31, 2018 2017</b>	
Prepaid service invoices	\$79	\$116
Prepaid manufacturing and mold costs	91	-
Prepaid insurance premiums	193	210
Total	363	326

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Inventory totaled \$31 and \$391 as of December 31, 2018 and December 31, 2017, respectively. Included within these totals are the following:

	<b>December 31, 2018 2017</b>	
Raw materials	\$-	\$367
Work in progress	31	24
Total	31	391

During the third quarter of 2018 and fourth quarter of 2017, the Company recorded write-downs to raw materials inventory of \$642 and \$279, respectively, with a corresponding increase to cost of sales. The write-downs were recorded in response to market conditions regarding part pricing for the Company's technology and the overall view of the platform and materials that will be used to fulfill future prototyping and production contracts. Given market entry challenges for a new technology, and continued pressure to be price competitive with existing solutions, the Company cannot objectively predict the timing of volume production, the materials that will support such production, nor if such production can be fulfilled at a profit. While the Company continues to expect that volume production is achievable, and with viable economics, the lack of a current sales backlog and the Company's lack of sales history does not support any future value with respect to on-hand raw materials as of December 31, 2018.

**7. Property and Equipment**



Property and equipment consist of the following:

	<b>December 31,</b>	
	<b>2018</b>	<b>2017</b>
Land, building, and improvements	\$9,039	\$8,947
Machinery and equipment	5,745	\$5,577
Computer equipment	282	253
Office equipment, furnishings, and improvements	181	181
Total	15,247	14,958
Accumulated depreciation	(3,480 )	(2,493 )
Total property and equipment, net	\$11,767	\$12,465

Depreciation expense for the years ended December 31, 2018, 2017 and 2016 was \$992, \$548, and \$429, respectively. For the year ended December 31, 2018, \$76 of depreciation expense was included in cost of sales and \$916 was included in selling, marketing, general and administrative expenses. For the year ended December 31, 2017, \$42 of depreciation expense was included in cost of sales and \$506 was included in selling, marketing, general and administrative expenses. For the year ended December 31, 2016, \$20 of depreciation expense was included in cost of sales and \$409 was included in selling, marketing, general and administrative expenses.

On February 16, 2017, the Company purchased a 41,000 square foot building located at 20321 Valencia Circle, Lake Forest, California 92630. In July 2017, the Company commenced use of the facility, primarily for manufacturing and office space. The total purchase price for the property was \$7,818, exclusive of closing costs. The Company has funded the purchase through available cash on hand.

During March 2017, the Company signed contracts with Eontec to purchase two hot-crucible amorphous metal molding machines at a total purchase price of \$780. The machines were delivered to the Company's new manufacturing facility in April 2017 and were operational during the fourth quarter of 2017.

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Patents and trademarks consist of the following:

	<b>December 31,</b>	
	<b>2018</b>	<b>2017</b>
Purchased and licensed patent rights	\$566	\$566
Internally developed patents	1,686	1,686
Trademarks	148	148
Total	2,400	2,400
Accumulated amortization	\$(2,078)	\$(1,992)
Total intangible assets, net	\$322	\$408

Amortization expense was \$86, \$86, and \$98 for the years ended December 31, 2018, 2017, and 2016, respectively, and is included in research and development expense in the consolidated statements of operations and comprehensive loss. The estimated aggregate amortization expense for each of the five succeeding years is as follows:

	Aggregate December 31, Amortization Expense
2019	\$ 84
2020	81
2021	56
2022	29
2023	20
Thereafter	52
	\$ 322

Accumulated amortization for the years ended December 31, 2018 and 2017 is as follows:

	<b>December 31,</b>	
	<b>2018</b>	<b>2017</b>
Purchased and licensed patent rights	\$(548 )	\$(541 )
Internally developed patents	(1,400)	(1,326)
Trademarks	(130 )	(125 )
Total	\$(2,078)	\$(1,992)

The weighted average amortization periods for the years ended December 31, 2018 and 2017 are as follows:

	<b>December</b>	
	<b>31,</b>	
	<b>2018</b>	<b>2017</b>
Purchased and licensed patent rights	17	17
Internally developed patents	17	17
Trademarks	10	10

Purchased patent rights represent the exclusive right to commercialize the bulk amorphous alloy and other amorphous alloy technology acquired from California Institute of Technology (“Caltech”), through a license agreement with Caltech and other institutions. All fees and other amounts payable by the Company for these rights and licenses have been paid or accrued in full, and no further royalties, license fees or other amounts will be payable in the future under the license agreements.

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In addition to the purchased and licensed patents, the Company has capitalized legal and registration costs incurred to obtain and maintain the respective patents. The Company currently holds various patents and numerous pending patent applications in the United States, as well as numerous foreign counterparts to these patents outside of the United States.

**9. Short-Term Debt**

Short-term debt totaled \$0 and \$0 as of December 31, 2018 and December 31, 2017, respectively, and consisted of borrowings under a line of credit facility, with a fixed interest rate of 2.1%. All borrowings were fully repaid upon maturity of the facility on August 26, 2016. Interest expense related to outstanding borrowings was \$0, \$0, and \$9 for the years ended December 31, 2018, 2017, and 2016, respectively.

This credit facility required the Company to maintain collateral for the full amount of the facility. Upon maturity of the facility all collateral requirements were removed.

**10. Accrued Liabilities**

Accrued liabilities totaled \$270 and \$365 as of December 31, 2018 and December 31, 2017, respectively. Included within these totals are the following:

	<b>December 31, 2018 2017</b>	
Accrued payroll, vacation, and bonuses	\$ 178	\$ 149
Accrued severance	10	164

Accrued audit fees	82	52
Total	270	365

## 11. Warrant Liabilities

Pursuant to FASB ASC 815, the Company is required to report the value of certain warrants as a liability at fair value and record the changes in the fair value of the warrant liabilities as a gain or loss in its consolidated statement of operations and comprehensive loss due to the price-based anti-dilution rights of warrants.

During June 2012, the Company issued warrants to purchase a total of 15,000,000 shares of common stock to Visser Precision Cast, LLC under a Master Transaction Agreement (the “Visser MTA Agreement”). These warrants had an original exercise price of \$0.22 per share and an expiration date of June 1, 2017 and were originally valued at \$4,260. These warrants also had certain anti-dilution and exercise price reset provisions which qualify the warrants to be classified as a liability under FASB ASC 815. As a result of subsequent issuances of the Company’s common stock, which resulted in an anti-dilution impact, the exercise price of these warrants was reduced to \$0.16 as of March 22, 2017 and December 31, 2016. In addition, the number of shares to be issued under the warrants as a result of the anti-dilution provision increased to 21,317,094 as of March 22, 2017 and December 31, 2016. On March 22, 2017 Visser Precision Cast exercised, on a cashless basis, all 21,317,094 warrants, resulting in the issuance of 4,241,386 shares of the Company’s common stock. Upon exercise, the Company reclassified \$975 of the associated warrant liability to additional paid in capital, with \$4 being allocated to common stock and \$971 to additional paid in capital. The change in warrant value for these warrants for the years ended December 31, 2018, 2017 and 2016 was a gain (loss) of \$0, \$553, and (\$1,494), respectively.

On July 2, 2012, the Company issued warrants to purchase a total of 18,750,000 shares of common stock as part of the July 2012 Private Placement. These warrants have an exercise price of \$0.384 per share, expire on January 2, 2018, and were originally valued at \$5,053. These warrants have certain anti-dilution and exercise price reset provisions which qualify the warrants to be classified as a liability under FASB ASC 815. As a result of contractually defined price resets, and issuances under the 2013, 2014, and 2016 Purchase Agreements, which resulted in an anti-dilution impact, the exercise price of these warrants was reduced to \$0.17 and \$0.17 as of December 31, 2017 and December 31, 2016, respectively. During the year ended December 31, 2017 investors party to the July 2012 Private Placement exercised a total of 10,540,750 warrants at an exercise price of \$0.17 per share. As a result of these warrant exercises, the Company issued 7,457,902 shares of common stock, for total consideration of \$712, and associated warrant liabilities of \$1,247 were reclassified to additional paid in capital. The change in warrant value for these warrants for the years ended December 31, 2018, 2017 and 2016 was a (loss) gain of \$0, (\$551), and (\$1,336), respectively.

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On March 10, 2016, the Company issued warrants to purchase a total of 10,066,809 shares of common stock as part of the 2016 Purchase Agreement. These warrants have an exercise price of \$0.07 per share, expire on March 10, 2026, and were originally valued at \$760. These warrants have certain anti-dilution and exercise price reset provisions which qualify the warrants to be classified as a liability under FASB ASC 815. As of December 31, 2018, these warrants were valued at \$925 under the Black-Scholes valuation model utilizing the following assumptions: (i) expected life of 7.19 years, (ii) volatility of 89%, (iii) risk-free interest rate of 2.69%, and (iv) dividend rate of 0. The change in fair value for these warrants for the years ended December 31, 2018, 2017, and 2016 was a gain (loss) of \$1,267, (\$145), and (\$1,287), respectively.

The following table summarizes the change in the Company's warrant liabilities for the year ended December 31, 2018:

	<b>Visser MTA Agreement</b>	<b>July 2, 2012 Private Placement</b>	<b>2016 Purchase Agreement</b>	<b>Total</b>
December 31, 2016	\$ 1,528	\$ 696	\$ 2,047	\$4,271
Change in value of warrant liabilities, (gain)	(553 )	551	145	143
Exercises	(975 )	(1,247 )	-	(2,222)
December 31, 2017	\$ -	\$ -	\$ 2,192	\$2,192
Change in value of warrant liabilities, (gain)	-	-	(1,267 )	(1,267)
Exercises	-	-	-	-
December 31, 2018	\$ -	\$ -	\$ 925	\$925
Included in current liabilities	\$ -	\$ -	\$ -	\$-
Included in long-term liabilities	\$ -	\$ -	\$ 925	\$925

The Company had warrants to purchase 10,066,809 and 41,924,653 shares of common stock outstanding as of December 31, 2018 and December 31, 2017, respectively, which were valued and classified as liabilities under FASB ASC 815. The change in fair value of warrants resulted in a total non-cash (loss) gain of \$1,267, (\$143), and (\$4,117) for the years ended December 31, 2018, 2017, and 2016, respectively.

The fair value of warrants outstanding for the following periods was computed using the Black-Scholes model with the following range of assumptions:

	December 31,		
	2018	2017	2016
Expected life in years	7.19	8.19	0.42 - 9.19
Volatility	89%	111%	76% - 122%
Risk-free interest rate	2.7%	2.4%	0.6%- 2.5%
Dividend rate	0%	0%	0%

As of December 31, 2018, outstanding warrants to acquire shares of the Company's common stock are as follows:

Number of Shares	Exercise Price	Expiration Date
10,066,809	\$ 0.07	March 10, 2026
10,066,809		

## 12. Option Liabilities

As part of the 2016 Purchase Agreement, the Company granted the Investor the right to purchase shares of the Company's common stock in the future at predetermined prices, of which the Investor was contractually obligated to effect following the satisfaction of certain conditions by the Company. These options allowed the Investor to purchase 200,000,000 shares of the Company's common stock at a price of \$0.15 per share and 100,000,000 shares of the Company's common stock at a price of \$0.25 per share. Given that the number of shares to be issued upon exercise of these options was in excess of the number of shares authorized for issuance, these options were originally required to be classified as liabilities under FASB ASC 815. The 200,000,000 share option and the 100,000,000 share option were initially valued at \$489 and \$22, respectively. Following the filing of an amendment to the Company's Certificate of Incorporation, which allowed for adequate authorized shares, these options were revalued as of May 19, 2016 and reclassified to permanent shareholders' equity. On May 19, 2016, the 200,000,000 share option and the 100,000,000 share option were valued at \$2,931 and \$193, respectively, under the Black-Scholes valuation model utilizing the following assumptions: (i) expected life of 0.25 years, (ii) volatility of 85%, (iii) risk-free interest rate of 0.31%, and (iv) dividend rate of 0. The change in fair value for these options was a loss of \$2,613 for the year ended December 31, 2016.

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On August 11, 2016, the Company and the Investor entered into an amendment to the 2016 Purchase Agreement. Under the amendment, the Company agreed to extend the deadline for the Investor's purchase of 300,000,000 additional shares of Company common stock under the 2016 Purchase Agreement from the original deadline of August 17, 2016 to a new deadline of December 31, 2016. Other than the extension of the deadline, the amendment did not materially modify the terms of the 2016 Purchase Agreement. As a result of this amendment the Company recorded an additional \$2,126 of expense to additional paid in capital as a loss on contract modification during the year ended December 31, 2016. On October 26, 2016, the Investor fully exercised these options through the purchase of 300,000,000 shares of the Company's common stock.

**13. Other Long-Term Liabilities**

Other Long-term liabilities balance of \$856 and \$856 as of December 31, 2018 and 2017, respectively, consists of long term, aged payables to vendors, individuals, and other third parties that have been outstanding for more than 5 years. The Company is in the process of researching and resolving the balances for settlement and/or write-off in accordance with applicable accounting rules.

**14. Shareholders' Equity**

Common stock

In connection with the execution of the 2016 Purchase Agreement, on March 10, 2016, the Company issued 105,000,000 shares of the Company's common stock, at a price of \$0.08 per share, for gross proceeds of \$8,400.



On May 19, 2016, the Company's shareholders approved an amendment to the Company's Certificate of Incorporation increasing the number of authorized shares of common stock from 700 million shares to 1,100 million shares.

On October 26, 2016, the Company issued and sold to the Investor of the 2016 Purchase Agreement an aggregate of 300,000,000 shares of Company's common stock for an aggregate purchase price of \$55,000, comprised of 200,000,000 shares at a price of \$0.15 per share and 100,000,000 shares at a price of \$0.25 per share.

In 2012, the Company entered into a non-exclusive engagement agreement with an investment banking firm. The services provided by the firm did not result in the identification of any practicable investment transactions and the agreement was considered effectively terminated by the Company in 2013. During 2016, the Company was notified by a representative of the firm stipulating that it did not consider the engagement agreement to be terminated and that previous financings and other funding transactions completed by the Company may be subject to success fees. In November 2016, the Company reached a settlement with respect to any and all amounts allegedly due under the engagement agreement in the amount of \$750. Such amounts were reflected as a reduction of proceeds from stock issuances during the year ended December 31, 2016 and a corresponding reduction to additional paid in capital.

#### Warrants

In connection with the Series A Preferred Stock issuances in 2009, warrants to purchase 29,779,557 shares of the Company's common stock, valued at \$18,179, were outstanding through July 15, 2015. Due to extension of the expiration date of these warrants during 2010, they no longer contained anti-dilution provisions and were reflected as equity as they did not meet the criteria under FASB ASC 815 for liability treatment. Such warrants had exercise prices ranging between \$0.48 and \$0.49 and expired on July 15, 2015.

#### **15. Stock Compensation Plan**

On April 4, 2002, our shareholders and Board of Directors adopted the 2002 Equity Incentive Plan ("2002 Plan"). The 2002 Plan provides for the grant of stock options to officers, employees, consultants and directors of the Company and its subsidiaries. A total of 10,000,000 shares of our common stock may be granted under the 2002 Plan. The 2002 Plan expired by its terms in April 2012, but it will remain in effect only with respect to the equity awards that have been granted prior to its expiration. As of December 31, 2018, there were 169,000 options outstanding under the 2002 Plan.

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On June 28, 2012, the Company adopted the 2012 Equity Incentive Plan (“2012 Plan”), with the approval of the shareholders, which provided for the grant of stock options to officers, employees, consultants and directors of the Company and its subsidiaries. The 2012 Plan provides for the granting to employees of incentive stock options within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, and for the granting to employees and consultants of non-statutory stock options. In addition, the Plan permits the granting of stock appreciation rights, or SARs, with or independently of options, as well as stock bonuses and rights to purchase restricted stock. A total of 30,000,000 shares of the Company’s common stock may be granted under the 2012 Equity Incentive Plan, and all options granted under this plan had exercise prices that were equal to the fair market value on the date of grant. During 2018, the Company granted options to purchase 1,217,175 shares of common stock, with total options outstanding of 11,755,503 as of December 31, 2018.

On January 27, 2015, the Company adopted its 2015 Equity Incentive Plan (“2015 Plan”), which provided for the grant of stock options to officers, employees, consultants and directors of the Company and its subsidiaries. A total of 40,000,000 shares of the Company’s common stock are available for issuance under the 2015 Plan. All options granted under the 2015 Plan had exercise prices that were equal to the fair market value on the dates of grant. During 2018, the Company granted options to purchase 7,910,000 shares of common stock, with total options outstanding of 16,906,667 as of December 31, 2018.

FASB ASC 718, *Compensation – Stock Compensation*, requires all share-based payments to employees, including grants of employee stock options, to be recognized in the financial statements based on their fair values. Under ASC 718, Company is required to measure the cost of employee services received in exchange for stock options and similar awards based on the grant-date fair value of the award and recognize this cost in the income statement over the period during which an employee is required to provide service in exchange for the award. The Company recorded \$924, \$1,255, and \$1,694 for the years ended December 31, 2018, 2017, and 2016, respectively, of non-cash charges for stock compensation related to amortization of the fair value of restricted stock and unvested stock options. The total compensation costs related to non-vested awards not yet recognized were \$1,278, \$1,665, and \$2,639 for the years ended December 31, 2018, 2017, and 2016, respectively.

The fair value of each option grant is estimated on the date of the grant using the Black-Scholes option-pricing model with the assumptions noted in the following table.

**December 31,**

	<b>2018</b>		<b>2017</b>		<b>2016</b>	
Expected volatility	64.92% - 99.30%		45.20% - 107.54%		56.48% - 115.39%	
Expected dividends	-		-		-	
Expected term (in years)	0.50	-6.20	.123	-5.85	1.00	-6.32
Risk-free rate	2.07%	-2.97%	0.82%	-2.06%	0.76%	-2.13%

Expected volatilities are based on historical volatility expected over the expected life of the options. The Company uses historical data to estimate option exercise and employee termination within the valuation model. The expected term of options granted represents the period of time that options granted are expected to be outstanding. Forfeiture rates of 23.43%, 19.86% and 8.83% were used for options granted during the years ended December 31, 2018, 2017 and 2016, respectively. The risk free rate for period within the expected life of the options is based on U.S. Treasury rates in effect at the time of grant.

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The following table summarizes the Company's stock option transactions for the years ended December 31, 2018 and 2017:

	<b>Number of Shares</b>	<b>Weighted Average Exercise Price</b>	<b>Weighted Average Remaining Contractual Term</b>	<b>Aggregate Intrinsic Value (in thousands)</b>
Options outstanding at December 31, 2016	47,582,402	0.15		
Granted	4,899,393	0.20		
Exercised	(10,978,664)	0.11		
Forfeited	(7,052,137 )	0.15		
Expired	(16,000 )	0.77		
Options outstanding at December 31, 2017	34,434,994	0.17		
Granted	9,127,175	0.17		
Exercised	(5,438,716 )	0.09		
Forfeited	(8,479,583 )	0.21		
Expired	(812,700 )	0.29		
Options outstanding at December 31, 2018	28,831,170	\$ 0.17	7.2	\$ 241
Options exercisable at December 31, 2018	15,212,177	\$ 0.18	5.8	\$ 177
Options unvested at December 31, 2018	13,618,993	\$ 0.17	8.8	\$ 64
Options vested or expected to vest at December 31, 2018	25,279,870	\$ 0.17	6.9	\$ 235

The following table provides supplemental data on stock options for the years ended December 31, 2018, 2017 and 2016:

**December 31,**  
**2018 2017 2016**

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Weighted average grant date fair value per option granted	\$0.13	\$0.18	\$0.08
Fair value of options vested	911	1,192	2,022
Cash from participants to exercise stock options	463	1,238	206
Intrinsic value of options exercised	537	2,271	221

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(in thousands, except share and per share data)

The following table summarizes the Company's stock options outstanding and exercisable by ranges of option prices as of December 31, 2018:

<b>Options Outstanding</b>		<b>Weighted</b>		<b>Options Exercisable</b>		
		<b>Average Remaining Contractual Life (Years)</b>	<b>Weighted Average Exercise Price</b>	<b>Number of Options Exercisable</b>	<b>Average Remaining Contractual Life (Years)</b>	<b>Weighted Average Exercise Price</b>
<b>Range of Exercise Prices</b>	<b>Numbers of Options Outstanding</b>					
\$0.00- 0.10	6,897,943	5.91	\$ 0.08	5,165,194	5.53	\$ 0.08
0.11 - 0.38	21,933,227	7.64	0.20	10,046,983	5.87	0.23
Total	28,831,170			15,212,177		

The Company's non-vested options at the beginning and ending of fiscal year 2018 had weighted-average grant-date fair values of \$0.15 and \$0.14 per option, respectively.

In connection with the separation of former executives and directors, the Company has modified previously granted equity awards to allow for the acceleration of vesting of equity awards, and the extension of the timing to exercise vested awards, following the respective separation dates. The Company incurred incremental stock-based compensation expense of \$66, \$261, and \$367 during the years ended December 31, 2018, 2017, and 2016, respectively.

**16. Income Taxes**

Significant components of deferred tax assets are as follows:

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2018</b>	<b>2017</b>
Loss carry forwards	\$33,733	\$39,304
Derivative valuations	259	521
NQSO	1,964	1,794
Tax Credits	331	382
Other	107	(54 )
<b>Total deferred tax asset</b>	<b>36,394</b>	<b>41,947</b>
Valuation allowance	(36,394)	(41,947)
<b>Total deferred tax asset, net</b>	<b>-</b>	<b>-</b>

The valuation allowance decreased \$5,553 and \$18,383 in 2018 and 2017, respectively. On December 22, 2017, the Tax Cuts and Jobs Act (“Tax Reform”) was signed into law. This comprehensive reform of tax law reduces the federal corporate income tax rate from 34% to 21% and is generally effective beginning January 1, 2018. US GAAP requires deferred tax assets and liabilities to be measured at the enacted tax rate expected to apply when temporary differences are to be realized or settled. At the date of enactment, the Company’s deferred taxes were remeasured based upon the new tax rate and were reduced by \$20,531, with a corresponding decrease to the valuation allowance. Changes in the valuation allowance are also impacted by the expiration of net operating loss (“NOL”) carryforwards, current year net operating losses, and changes to future tax deductions resulting from derivative valuations, the terms of stock compensation plans, and accrued liabilities.

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The following table accounts for the differences between the expected federal tax benefit (based on the statutory 2018 U.S. federal income tax rate of 21%) and the actual tax provision:

	<b>Years Ended December</b>					
	<b>31,</b>		<b>2017</b>		<b>2016</b>	
	<b>2018</b>		<b>2017</b>		<b>2016</b>	
Expected federal tax benefit	-21.0%		-34.0%		-34.0%	
Permanent items	0.9 %		1.7 %		5.6 %	
Net operating loss utilized or expired	0.0 %		0.0 %		0.0 %	
Increase in valuation allowance and others	20.1 %		32.3 %		28.4 %	
<b>Effective tax rate</b>	<b>0 %</b>		<b>0 %</b>		<b>0 %</b>	

As of December 31, 2018, the Company had approximately \$130.7 million of NOL carryforwards for U.S. federal income tax purposes expiring in 2019 through 2038. As a result of Tax Reform, the Company's federal net operating losses continue to be-measured at 21%. The reduction in the federal corporate income tax rate does not change the gross dollar value of taxable income that may be offset by NOLs, however that taxable income will only be taxable at 21% in future periods, thus reducing the value of NOLs utilized after 2018. As of December 31, 2018, the Company had approximately \$90.0 million of NOL carryforwards for California income tax purposes expiring in 2019 through 2038, respectively. The Company and Liquidmetal Golf, Inc. file on a separate company basis for federal income tax purposes. Accordingly, the federal NOL carryforwards of one legal entity are not available to offset federal taxable income of the other. Liquidmetal Golf, Inc. had approximately \$36.2 million in federal NOL carryforwards, expiring in 2019 through 2038.

We recognize excess tax benefits associated with the exercise of stock options directly to shareholders' equity only when realized. Accordingly, deferred tax assets are not recognized for NOL carryforwards resulting from excess tax benefits. As of December 31, 2018, deferred tax assets do not include approximately \$325 of these tax effected excess tax benefits from employee stock option exercise that are a component of our NOL carryforwards. Accordingly, additional paid-in capital will increase up to an additional \$325 if and when such excess tax benefits are realized.



As of December 31, 2018, the Company had approximately \$138 of Research & Development (“R&D”) credit carryforwards for U.S. federal income tax purposes expiring in 2019 through 2030. In addition, the Company has California R&D credit carryforwards of approximately \$243, which do not expire under current California law. Tax Reform did not impact the valuation of tax credit carryforwards, which directly offset taxes due.

Section 382 of the Internal Revenue Code (“IRC”) imposes limitations on the use of NOL’s and credits following changes in ownership as defined in the IRC. The limitation could reduce the amount of benefits that would be available to offset future taxable income each year, starting with the year of an ownership change. As a result of the completion of the complex analysis required by the IRC to determine if an ownership change has occurred, the Company has determined that its annual NOL carryforward limitation under Section 382 of the IRC is \$764 per year.

The ability to realize the tax benefits associated with deferred tax assets, which includes benefits related to NOL’s, is principally dependent upon the Company’s ability to generate future taxable income from operations. The Company has provided a full valuation allowance for its net deferred tax assets due to the Company’s net operating losses.

The Company adopted the provisions of FASB ASC Topic 470 – Income Taxes. At the adoption date and as of December 31, 2018, the Company had no material unrecognized tax benefits and no adjustments to liabilities or operations were required. The Company recognizes interest and penalties related to uncertain tax positions in income tax expense which were \$0 for the years ended December 31, 2018, 2017 and 2016.

As of December 31, 2018, the tax years 2014 through 2018, and 2013 through 2018 are subject to examination by the federal and California taxing authorities, respectively.

## **17. Loss Per Common Share**

Basic earnings per share (“EPS”) is computed by dividing earnings (loss) attributable to common shareholders by the weighted average number of common shares outstanding for the periods. Diluted EPS reflects the potential dilution of securities that could share in the earnings.

Options to purchase 28,831,170 shares of common stock at prices ranging from \$0.07 to \$0.38 per share were outstanding at December 31, 2018, but were not included in the computation of diluted EPS for the same period as the inclusion would have been antidilutive, given the Company’s net loss. Options to purchase 34,434,994 shares of common stock at prices ranging from \$0.07 to \$0.47 per share were outstanding at December 31, 2017, but were not included in the computation of diluted EPS for the same period as the inclusion would have been antidilutive, given the Company’s net loss. Options to purchase 47,582,402 shares of common stock at prices ranging from \$0.07 to \$0.77 per share were outstanding at December 31, 2016, but were not included in the computation of diluted EPS for the

same period as the inclusion would have been antidilutive, given the Company's net loss.

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**LIQUIDMETAL TECHNOLOGIES, INC AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**(in thousands, except share and per share data)**

Warrants to purchase 10,066,809 shares of common stock, priced at \$0.07 per share, outstanding at December 31, 2018 and December 31, 2017 were not included in the computation of diluted EPS for the same period as the inclusion would have been antidilutive, given the Company's net loss. Warrants to purchase 41,924,653 shares of common stock, with prices ranging from \$0.07 to \$0.17 per share, outstanding at December 31, 2016 were not included in the computation of diluted EPS for the same period as the inclusion would have been antidilutive, given the Company's net loss.

**18. Segment Information**

The primary business of the Company is to develop and manufacture products and applications from amorphous alloys. As a result, the Company's financial results are reported in a single segment.

**19. Commitments and Contingencies**

*Capital Commitments*

As of December 31, 2018 the Company had executed contracts, with remaining minimum commitments of \$253, for capital expenditures related to upgrading the power supply for the Company's manufacturing facility. Such upgrades are expected to be completed during the first half of 2019.

*Legal Contingencies*

In addition to the matters disclosed in these footnotes, the Company is involved in other legal proceedings regarding matters arising in the normal course of business. The Company believes the outcome of these other proceedings will not, individually or in the aggregate, materially affect its consolidated financial position, results of operations and cash flows.

## **20. 401(k) Savings Plan**

The Company has a tax-qualified employee savings and retirement plan, or 401(k) plan. Under the 401 (k) plan, participants may elect to reduce their current compensation, on a pre-tax basis, by up to 15% of their taxable compensation or of the statutorily prescribed annual limit, whichever is lower, and have the amount of the reduction contributed to the 401(k) plan. The 401(k) plan permits the Company, in its sole discretion, to make additional employer contributions to the 401(k) plan. However, the Company did not make employer contributions to the 401(k) plan during any of the periods presented in the accompanying consolidated financial statements.

## **21. Related Party Transactions**

On November 17, 2016, the Company and Thomas Steipp, the former Company's President and Chief Executive Officer, entered into a Separation and Mutual Release Agreement pursuant to which Mr. Steipp resigned as an officer, director, and employee of the Company (the "Separation Agreement"). The Separation Agreement provided for the payment of severance compensation to Mr. Steipp in the form of a lump sum of \$300 (subject to tax withholdings) and reimbursement for COBRA healthcare coverage for a period of 12 months. In addition, it provided for the accelerated vesting of 3,990,400 of the 9,939,451 unvested stock options held by Mr. Steipp as of the separation date and the extension of the exercise period of his options until the second anniversary of the date of the Separation Agreement. This resulted in a total of 10,777,949 stock options being exercisable by Mr. Steipp as of the separation date and resulted in an additional \$297 of stock-based compensation expense during the year ended December 31, 2016. In connection with the Separation Agreement, Mr. Steipp and the Company granted each other mutual general releases subject to customary exceptions. As of December 31, 2018 and December 31, 2017, the Company had accrued liabilities totaling \$0 and \$0, respectively, relating to the Separation Agreement.

On August 16, 2017, the Company and Tony Chung, the Company's former Chief Financial Officer, entered into a Separation Agreement and General Release pursuant to which Mr. Chung resigned as an officer and employee of the Company (the "Chung Separation Agreement"). Concurrently, Mr. Chung was elected to serve as a director of the Company. The Chung Separation Agreement provided for the payment of severance compensation to Mr. Chung in the form of a continuation of his base annual salary of \$240 (subject to tax withholdings) for a period of 12 months and reimbursement for COBRA healthcare coverage for a period of 12 months. In addition, it provided for the accelerated vesting of 247,650 of the unvested stock options held by Mr. Chung as of the separation date and the extension of the exercise period of his options until the first anniversary of the date of the Chung Separation

Agreement. This resulted in a total of 2,889,749 stock options being exercisable by Mr. Chung as of the separation date and resulted in an additional \$89 of stock-based compensation expense during the year ended December 31, 2017. In connection with the Chung Separation Agreement, Mr. Chung and the Company granted each other mutual general releases subject to customary exceptions. Subsequently, the Company extended the exercise period of Mr. Chung's options to the second anniversary of the date of the Chung Separation Agreement. This resulted in an additional \$48 of stock-based compensation expense during the year ended December 31, 2018. As of December 31, 2018 and December 31, 2017, the Company had accrued liabilities totaling \$0 and \$164, respectively, relating to the Chung Separation Agreement.

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On March 10, 2016, the Company entered into the 2016 Purchase Agreement with Liquidmetal Technology Limited, providing for the purchase of 405,000,000 shares of the Company's common stock for an aggregate purchase price of \$63,400. Liquidmetal Technology Limited is a company owned by Professor Li that was formed in 2016 in contemplation of the 2016 Purchase Agreement. In connection with the 2016 Purchase Agreement and also on March 10, 2016, the Company and Eontec, entered into a license agreement pursuant to which the Company and Eontec entered into a cross-license of their respective technologies. Eontec is a publicly held Hong Kong corporation of which Professor Li is the Chairman and major shareholder. As of December 31, 2018, Professor Li is a greater-than 5% beneficial owner of the Company's common stock and served (and currently serves) as the Company's Chairman, President, and Chief Executive Officer. Equipment and services procured from Eontec were \$213, \$877, and \$68 during the years ended December 31, 2018, 2017, and 2017, respectively.

**22. Quarterly Financial Information (Unaudited)***(in thousands, except per share data)*

	<b>Quarter Ended</b>				
	<b>March 31, 2018</b>	<b>June 30, 2018</b>	<b>September 30, 2018</b>	<b>December 31, 2018</b>	<b>Total</b>
Revenue	\$80	\$55	\$ 253	\$ 144	\$532
Gross profit (loss)	(1 )	(6 )	(631 )	6	\$(632 )
Operating loss	(2,196)	(2,177)	(2,613 )	(1,974 )	\$(8,960)
Net loss and comprehensive loss	(2,438)	(1,859)	(1,939 )	(1,198 )	\$(7,434)
Basic and diluted net loss per common share	\$(0.00 )	\$(0.00 )	\$ (0.00 )	\$ 0.00	\$(0.01 )

	<b>Quarter Ended</b>				
	<b>March</b>	<b>June</b>	<b>September</b>	<b>December</b>	<b>Total</b>
	<b>31,</b>	<b>30,</b>	<b>30, 2017</b>	<b>31, 2017</b>	
	<b>2017</b>	<b>2017</b>			
Revenue	\$48	\$58	\$ 36	\$ 179	\$321
Gross profit (loss)	(14 )	(9 )	(51 )	(301 )	\$(375 )
Operating loss	(2,109)	(1,797)	(2,290 )	(2,406 )	\$(8,602)
Net loss and comprehensive loss	(945 )	(3,821)	(3,951 )	27	\$(8,690)
Basic and diluted net loss per common share	\$(0.00 )	\$(0.00 )	\$ (0.00 )	\$ 0.00	\$(0.01 )

Table of Contents**Schedule II****LIQUIDMETAL TECHNOLOGIES, INC. AND SUBSIDIARIES****Valuation and Qualifying Accounts***(in \$ thousands)*

<b>Year ended</b>	<b>Balance at Beginning of Period</b>	<b>Additions Charged to Costs and Expenses</b>	<b>Other Accounts</b>	<b>Deductions</b>	<b>Balance at End of Period</b>
<b>December 31, 2018</b>					
Uncollectible accounts	-	-	-	-	-
Deferred tax asset valuation allowance	41,947	1,980	-	(7,533 )	36,394
Total	\$ 41,947	\$ 1,980	\$ 0	\$ (7,533 )	\$ 36,394
<b>Year ended December 31, 2017</b>					
Uncollectible accounts	-	-	-	-	-
Deferred tax asset valuation allowance	60,330	2,834	-	(21,217 )	41,947
Total	\$ 60,330	\$ 2,834	\$ 0	\$ (21,217 )	\$ 41,947
<b>Year ended December 31, 2016</b>					
Uncollectible accounts	-	-	-	-	-
Deferred tax asset valuation allowance	55,079	6,675	-	(1,424 )	60,330
Total	\$ 55,079	\$ 6,675	\$ 0	\$ (1,424 )	\$ 60,330