

MICROFLUIDICS INTERNATIONAL CORP
Form 10-K
March 29, 2010

**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, 2009

or

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

Commission File Number: 0-11625

Microfluidics International Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

04-2793022

(I.R.S. Employer
Identification No.)

**30 Ossipee Road
Newton, Massachusetts**

(Address, including zip code, of principal executive offices)

Registrant's telephone number, including area code: (617) 969-5452

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

None

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

Common Stock, par value \$0.01 per share

None

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

Indicate by check mark whether 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark 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. Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

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(Do not check if a smaller
reporting company)

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 10,371,782 shares of voting stock held by non-affiliates of the Registrant as of June 30, 2009 was approximately \$4,874,738 based on the closing sales price of the Registrant's Common Stock, par value \$0.01 per share ("Common Stock") based on the last sale price as reported by the Over-the-Counter Bulletin Board.

At March 1, 2010, there were 10,394,782 shares of the Registrant's Common Stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of the Form 10-K incorporates by reference certain portions of the Registrant's definitive proxy statement for its 2010 Annual Meeting of Stockholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this report.

Table of Contents

MICROFLUIDICS INTERNATIONAL CORPORATION

TABLE OF CONTENTS

| | Page | |
|------------------------|---|-----------|
| <u>PART I</u> | | |
| <u>Item 1.</u> | <u>Business</u> | <u>3</u> |
| <u>Item 1A.</u> | <u>Risk Factors</u> | <u>15</u> |
| <u>Item 1B.</u> | <u>Unresolved Staff Comments</u> | <u>23</u> |
| <u>Item 2.</u> | <u>Properties</u> | <u>23</u> |
| <u>Item 3.</u> | <u>Legal Proceedings</u> | <u>24</u> |
| <u>Item 4.</u> | <u>Removed and Reserved</u> | <u>24</u> |
| <u>PART II</u> | | |
| <u>Item 5.</u> | <u>Market for Registrant's Common Equity and Related Stockholder Matters</u> | <u>24</u> |
| <u>Item 6.</u> | <u>Selected Financial Data</u> | <u>25</u> |
| <u>Item 7.</u> | <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u> | <u>26</u> |
| <u>Item 7A.</u> | <u>Quantitative and Qualitative Disclosures About Market Risk</u> | <u>37</u> |
| <u>Item 8.</u> | <u>Financial Statements and Supplementary Data</u> | <u>38</u> |
| <u>Item 9.</u> | <u>Changes In and Disagreements With Accountants on Accounting and Financial Disclosure</u> | <u>62</u> |
| <u>Item 9A(T).</u> | <u>Controls and Procedures</u> | <u>62</u> |
| <u>Item 9B.</u> | <u>Other Information</u> | <u>63</u> |
| <u>PART III</u> | | |
| <u>Item 10.</u> | <u>Directors, Executive Officers and Corporate Governance</u> | <u>63</u> |
| <u>Item 11.</u> | <u>Executive Compensation</u> | <u>63</u> |
| <u>Item 12.</u> | <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u> | <u>63</u> |
| <u>Item 13.</u> | <u>Certain Relationships and Related Transactions, and Director Independence</u> | <u>63</u> |
| <u>Item 14.</u> | <u>Principal Accountant Fees and Services</u> | <u>63</u> |
| <u>PART IV</u> | | |
| <u>Item 15.</u> | <u>Exhibits and Financial Statement Schedules</u> | <u>64</u> |
| <u>SIGNATURES</u> | | <u>65</u> |

Table of Contents

This Annual Report on Form 10-K contains statements that are not statements of historical fact and are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The forward-looking statements are principally, but not exclusively, contained in "Item 1: Business" and "Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations." These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "seek," "expects," "plans," "aim," "anticipates," "believes," "estimates," "projects," "predicts," "intends," "strategy," "potential," "new," "goal" and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in detail under the heading "Item 1A. Risk Factors" beginning on page 15 of this Annual Report on Form 10-K. You should carefully review all of these factors, as well as other risks described in our public filings, and you should be aware that there may be other factors, including factors of which we are not currently aware, that could cause these differences. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this report. We assume no responsibility to update any forward-looking statements as a result of new information, future events, or otherwise.

PART I

Item 1. Business

Company Overview

References herein to "we", "us", "our" or "the Company" are to Microfluidics International Corporation.

We have, for over 25 years, specialized in manufacturing and marketing a broad line of materials processing systems, more specifically known as high shear fluid processors, which are used in numerous applications in the pharmaceutical, biotechnology, chemical, nutraceutical/food, energy, academics and cosmetics industries.

Our line of lab and production equipment, marketed under our Microfluidizer® trademark and trade name, process premixed formulations to produce small, uniform structures, usually of the submicron and nanoscale size (commonly defined as particles having dimensions less than 100 nanometers) including nanoemulsions and nanosuspensions.

Additionally, our equipment is used for cell disruption to harvest the cultivated contents of cells such as e.-coli, bacterial yeast, mammalian and /or plant cells and for liposomal encapsulation of materials primarily for the pharmaceutical, biotechnology, nutraceutical/ and cosmetic industries.

The technology embodied within our Microfluidizer high shear fluid processors is used in formulating products that are normally very difficult to mix and stabilize. We believe that our Microfluidizer processors, through process intensification, allow manufacturers to produce higher quality products with better characteristics, on a more consistent basis, than with other blending, mixing or homogenizing techniques. Further, our processor equipment is able to scale up formulations and results from flow rates as low as 100 to 200 milliliters per minute on our laboratory and bench top models to more than 15 gallons per minute on our production models, which is a competitive advantage for our customers.

We have begun to sell beta versions and associated process technology consulting services to our commercial customers related to our proprietary equipment for the continuous production of precipitated submicron or nanoscale particles by interaction of discrete streams of reacting materials

Table of Contents

("Microfluidics Reaction Technology " or "MRT"). In 2009 we launched the MRT processor, the CR5. The combination of the process development and processor was used successfully to produce drug suspensions of the desired particle size via crystallization. Our management believes that once commercialized, the manufacturing capability of our processing equipment and our Microfluidics Reaction Technology may enable our pharmaceutical and other customers to implement further their nanotechnology based products.

In 2009, we presented the technology at several domestic and international conferences and also published articles about the technology. These events includeACHEMA 2009, which was held in Frankfurt, Germany, the New Pharmaceutical Technology and Engineering Conference hosted by our distributor POWREX in Tokyo, Japan, the Materials Research Society in Boston, Massachusetts, the Nano Science & Technology Institute Conference in Houston, Texas and at the International Conference on Materials for Advanced Technologies 2009 in Singapore.

We were incorporated in Delaware in 1983. The Company, formerly named Biotechnology Development Corporation, changed its name effective June 8, 1993 to Microfluidics International Corporation, and again changed its name effective July 12, 1999 to MFIC Corporation. On June 17, 2008, the Company changed its name back to Microfluidics International Corporation. Our principal executive offices are located at 30 Ossipee Road, in Newton, Massachusetts 02464 and our telephone number is (617) 969-5452.

Business Strategy

Our strategy is to focus on the pharmaceutical industry until the other adjacent markets such as cosmetics, inkjets and chemical return, expand our technology and service offerings to our pharmaceutical customers and continue our global expansion by improving and expanding our distribution partners. We intend to develop the new MRT technology to further expand into the pharmaceutical industry and other new markets.

While we faced challenging business conditions in 2009, we believe that the execution of our strategic plan focused around the pharmaceutical industry implemented in mid 2008 along with strong cost controls and infrastructure actions across the entire organization as well as other operational improvements will position the company well for 2010. While we expect these initiatives discussed above to have a positive impact on our business, the success of these initiatives is subject to a number of risks. We expect the main drivers of our growth in 2010 to be as follows:

the size and growth of the global nanotechnology pharmaceutical markets.

the launch of five new products for 2010 including a second generation of the M-110P, LV1, MRT-CR5, redesigned interaction chamber and additional services such as our Safe Guard Spares and Preventive Maintenance Programs.

new MRT business model combines Process Consulting along with the sale of machine. The technology has the potential to serve as the platform for continuous manufacturing in the pharmaceutical and energy markets.

focused effort on services which include disposable spares, preventive maintenance, process consulting and proof of concept testing.

developing Asia region that did not grow in 2009 back to historical levels especially in China, India and Japan.

Table of Contents

Technologies

Fluid Processing Equipment.

Microfluidizer high shear fluid processors differ from conventional mechanical mixing and processing technologies in that they utilize highly pressurized liquid product streams that travel at high velocities in precisely defined microchannels producing high shear forces. In some configurations the liquid streams collide at ultra-high velocities in a small, confined space producing high forces of impact. There are no moving parts in the mixing and collision zone ("fixed geometry") within the interaction chamber.

Combined forces of shear and/or impact in the fixed geometry design act upon products to cause deagglomeration and particle size reduction. These forces result in what we believe are smaller, more uniform, highly stable, and reproducible dispersions and emulsions than cannot be produced by any other means. Microfluidizer processors also differ from conventional mixing and homogenization equipment in that our processors permit a linear scale up from milliliters per minute to gallons per minute with no basic change in product formulation or equipment design and engineering.

The formulations processed may be liquid/liquid or liquid/solid combinations. This particle size reduction through shear and other forces is achieved through what we refer to as a "top down" process in which large structures are reduced to far smaller and uniform size to exhibit and enhanced product characteristics and performance.

Microfluidics Reaction Technology (MRT)

Our Microfluidics Reaction Technology encompasses both our MMR reactor and our MRT Processor. We introduced a Multiple Stream High Pressure Mixer-Reactor (MMR) system, a continuous chemical reactor, for conducting high speed chemical reactions, many of which can be configured to produce nanoparticles. Our MMR Reactor produces uniform nanoparticles on a continuous (versus batch) basis with phase purity, we believe, previously unachievable with conventional batch reaction technology. This degree of reaction chemistry control can lead to cost-effective product improvements and the development and manufacture of new nanomaterials in scalable quantities. Applications for this technology include improving the performance of catalysts, planarization polishing media, superconductors, abrasive silica, recording media, photographic media and pigments. It also may be used in the development and production of unique pharmaceutical products as well as the conversion of existing insoluble drugs to nanosuspension forms which are then deliverable by conventional means and with high bioavailability. This system is constrained by its one-to-one component mixing ratio and some lack of control of residence time of reactants to cover a broad range of applications, and we have expanded our existing patented MMR technology that utilizes our impinging jet technology with a fixed component feed ratio of one to one for very fast reactions. We filed our first MMR patent in the U.S. in 1997 with additional U.S. patents in 1998 and 2002.

In addition to our MMR reactor, our MRT CR5 processor is a proprietary coaxially fed reactor for moderate and slower speed reaction and those that require differential ratios of component feed stocks. Our MRT processor approach introduces the multiple reactant streams coaxially, rather than by impingement and in selected differing ratios, which allows the predetermined residence time for slower reactions. Through chemical and physical processes (such as crystallization), MRT utilizes a proprietary "bottom up" approach to produce high purity nanoparticles the size of which, we believe, are not achievable with any known "top down" conventional formulation methods. The technology introduces uniform mixing in the nanometer scale of species that are present in the chemical or physical processes which enables nanoparticles to be formed and the rates of the processes to be expedited. In 2008, we filed a U.S. patent application for certain aspects of our MRT processor.

We are working on projects utilizing our MRT-CR5 processors with other companies, to whom we have sold beta versions of the MRT processors and associated consulting services. These customers are

Table of Contents

seeking to optimize or enable drug delivery, catalysts and coatings products using a beta version of our MRT-CR5 processor system, as well as an internal program on nanopolymer creation for drug delivery and other applications. While we cannot accurately assess or anticipate either the timing of receipt of a customer order or the delivery of our first commercial version of our MRT processor system, we believe this event will occur in the foreseeable future. We believe that the MRT system and technologies will make us a leader in the provision of systems for continuous production of uniform, reproducible, microparticles, nanoparticles and nanodroplets involving fast chemical reactions, crystallization and other reactions.

Commercial Applications

Microfluidizer processor technology allows manufacturers in the pharmaceutical, biotechnology, chemical, cosmetic, academic, and nutraceutical/food industries to produce higher quality products with better characteristics, on a more consistent basis, from those produced by other blending, mixing or homogenizing techniques. Further, the proprietary equipment enables the manufacture of unique products which cannot otherwise be produced. Microfluidizer processor equipment is generally used in the processing of high value-added end-products that require extremely small and uniform particle sizes. Newer applications include deagglomeration of carbon nanotubes for subsequent formatting or alignment for specific uses in products ranging from sporting equipment to energy and military technology.

In the pharmaceutical and biotechnology industries, Microfluidizer processors are used for applications including vaccines and vaccine adjuvants, cancer therapeutics, antibiotics, injectable, inhalables, anesthetics and steroids, among others. Our technology, we believe, enables researchers to improve drug performance, bioavailability, stability and delivery as well as sterilization processes.

Microfluidizer equipment is used to mix and formulate stable emulsions, dispersions and liposomes, and for cell disruption.

Emulsions are homogenous mixtures of oil and water components (or other normally immiscible components), which, if mixed properly, do not readily separate. Emulsions comprise many products, such as food additives, medicines (including injectable drugs), photographic films and polymers. We believe that normally an emulsion processed with Microfluidizer processor equipment will exhibit improved stability and requires reduced concentrations of costly emulsifying agents that are otherwise needed to create and/or maintain product stability.

Dispersions are mixtures of fine solids suspended in liquid so that the two do not separate readily after processing. Similar to emulsions, dispersions are used in a variety of consumer and industrial products, including pharmaceutical products (including injectable drugs), coatings, pigment dispersions for inkjet inks and toners, phosphorescent coatings for TV screens and fluorescent lamps, and barium titanate for capacitors and toners.

Liposomes are cell-like structures, formed from materials such as cholesterol and lecithin, which can be used to encapsulate medications or nutrients. Pharmaceutical and cosmetic manufacturers use liposomes as a delivery system to target active ingredients for specific anatomical sites and to prolong their efficacy. To date, liposomes have been used commercially in two predominant applications: medical diagnostic agents and cosmetics. Applications include the encapsulation of dye to be used as a marker in medical diagnostic tests and the encapsulation of ingredients for deeper skin penetration, or time-release control, as well as pharmaceutical, nutraceutical/food and specialized agricultural applications.

In the biotechnology industry, Microfluidizer processor equipment is currently used to harvest, by cell rupture, protein grown in bacteria, plant or mammalian cells. The controlled forces of shear produced by Microfluidizer processor equipment allows the cell wall to be ruptured without damage to,

Table of Contents

or contamination of, the cell contents. The Microfluidizer processor equipment eliminates grinding media contamination, thus reducing or minimizing downstream processing requirements.

Microfluidizer processor equipment is generally used in commercial applications where a scientist, formulator or chemist is trying to develop or improve a product formulation for a high value-added end product. We believe that our laboratory equipment uniquely facilitates modern formulation development and production capability. Typically, Microfluidizer processor equipment is initially employed in a research laboratory, with the equipment subsequently being used in scale-up to pilot scale production of new or improved products and ultimately for production scale volumes as the improved product comes to market. From laboratory to production, our equipment produces consistent scale-up of formulations and results ranging from 100 milliliters per minute on our laboratory bench-top models to more than 15 gallons per minute on our large production models. We believe that the scale-up capabilities provide a competitive advantage.

We believe that Microfluidics offers the industry's broadest selection of laboratory machines and the widest selection of standardized configurations specific to the pharmaceutical and biotechnology industries. We currently manufacture and market the following lines of equipment:

Laboratory Machines

The HC Series The HC Series, also known as "Homogenizers," includes three pneumatic (air-driven) machines the HC-2000, HC-5000 and HC-8000 that are intended to impart moderate levels of energy into a customer's product with greater flow rates than the more energy intensive Microfluidizer processor devices. Operating pressures of products in our HC Series can range from 250 psi (pounds per square inch) to as high as 8,000 psi, and will process as much as two liters of fluid per minute.

The M-110 Series The M-110 Series is a laboratory product line designed primarily for research and development applications.

Pneumatic M-110 Series Standard pneumatic M-110 models can generate pressures as high as 23,000 psi and have a product flow rate on the order of one-half liter per minute. This series includes the M-110S small volume machine, the M-110L medium pressure machine, the M-110F reverse flow machine and the M-110Y high pressure machine.

Electro-Hydraulic M-110 Series The M-110P was introduced in September 2007. It is a "plug and play" electro-hydraulic machine that incorporates a 2 HP (Horse Power) single phase motor 110v (or 220v). Its only utility requirement is a 10 or 20 amp standard electrical outlet. The M-110P can achieve process pressures of 30,000 psi with an average flow rate of 135 ml/min. It is a bench-top model that is air cooled and portable. The M-110P comes equipped with numerous standard features including a ceramic plunger and diamond interaction chamber, and is available in CE versions. A second generation of the M-100P was introduced in December 2009.

The M-110EH-30 includes an on-board electric-hydraulic drive system for high performance "lab scale" micro-mixing at processing pressures up to 30,000 psi and flow rates up to 400 ml/min. The M-110EH-30 requires three phase 60Hz 208/230/460V electrical supply, compressed air, cooling fluids for product, and hydraulic oil. It has numerous standard features including a ceramic plunger, and diamond interaction chamber. The M-110EH-30XP successfully functions in hazardous environments. The M-110EH-30S offers R&D sample size processing. In 2009 the M-EH-30 biopharmaceutical family of basic, enhanced, and aseptic processors were introduced.

The M-140K Series The M-140K is a laboratory-scale unit developed for customers that require elevated operating pressures and higher shear forces to achieve better performance. The M-140K can achieve operating pressures up to 40,000 psi. The M-140K has a built-in hydraulic

Table of Contents

system and utilizes a bi-directional intensifier pump that provides a highly uniform pressure profile. It has been designed with many accessories and options including an explosion-proof motor, control package and solvent seal quench. The M-140K has flow rates up to 500 ml/min.

The LVI The LV1 was introduced in March 2010. It is a low volume processor which is capable of operating on sample sizes from 1-6 ml. We believe the LV1 offers an important capability for companies and academic/research institutions that work with expensive or limited materials. The "plug and play" LV1 is manually operated. It achieves pressures up to 30,000 psi and fits in a standard laboratory chemical hood.

The MRT-CR5 Machine Instead of breaking large particles into smaller ones, Microfluidics Reaction Technology CR5 (MRT) utilizes a "bottom-up" proprietary approach whereby the particle is built up molecule by molecule in micro-seconds allowing not only for optimal and consistent sizing of the particles but also for the creation of smaller particles, we believe, not previously achievable. The MRT-CR5 is a laboratory unit and can achieve operating pressures up to 20,000 psi.

In 2009, we introduced our laboratory sized MRT-CR5 processor, a modified, coaxially fed Microfluidizer processor with ability to handle most continuous reaction applications. This simpler equipment design is expected to result in a lower cost yet more flexible system which should accelerate interest in MRT systems.

Production Machines

The M-700 Series The M-700 Series was introduced at the end of fiscal 1998 and was initially designed, engineered, and constructed for use in rugged industrial environments such as coatings, paints and pigments research and manufacturing. This product line was especially designed to withstand such hazards as dust, grease, and water spray. Through use of our own proprietary design of an intensifier pump and other components, the system has also proven to be more cost-effective in many user applications.

The M-700 Series equipment is available in a variety of configurations and flow rates depending upon motor size and the number of intensifier pumps. The M-700 series equipment can achieve operating pressures up to 40,000 psi. On the low end of the spectrum is the 15 HP, single intensifier pump M-7115 machine with flow rates ranging from 0.9 gpm (gallons per minute) at 10,000 psi (pounds per square inch) to 0.4 gpm at 30,000 psi. The next size up is the 25 HP, single intensifier pump, M-7125 machine with flow rates ranging from 2.3 gpm at 10,000 psi to 0.6 gpm at 30,000 psi. The dual intensifier pump M-7250 machine with flow rates ranging from 4.0 gpm at 10,000 psi to 1.2 gpm at 30,000 psi.

In September 2003, we introduced a new addition to the M-700 series product line with higher flow rates, the Model M-710. The Model M-710 machine is equipped with a 100 HP, dual intensifier pump, with flow rates ranging from 15 gpm at 5,000 psi to 3.0 gpm at 30,000 psi.

Due to market demand from the pharmaceutical, biotech and cosmetic industries, the M-700 product line was redesigned to include pharmaceutical-grade components to conform to the U.S. Food and Drug Administration's current Good Manufacturing Practices (cGMP) requirements. (See discussion below under heading "Government Regulation.") We also offer Steam-In-Place (SIP), which eliminates the need for disassembly for cleaning and allows for compliance with stringent regulatory production requirements, and Clean-In-Place (CIP) sterilization options, which provides the ability to clean in place the processor systems between product batch runs or before storage, on the M-700 Series.

Our current M-700 biopharmaceutical models include 24 standardized configurations specifically designed to meet the diverse needs of the pharmaceutical and biotech industries. Other

Table of Contents

M700 series variations include (i.) the M-700 Microfluidizer Containment System, which provides a hermetically sealed stainless steel containment isolator that fully encloses the Microfluidizer processor's high-pressure processing area and is utilized for the safety protection of personnel engaged in the processing of highly toxic cancer therapeutic drugs and other hazardous and potent materials, (ii.) the M-700 Microfluidizer Split System configuration (separating the power source from the mixing/processing apparatus) which accommodates demands of limited space within clean rooms and for noise abatement within pharmaceutical production facilities and (iii.) a "Constant Pressure" control option, available on 50 HP or 100 HP versions of M-7250 or M-710 machines. Maintaining operating pressure to within 5% of peak operating pressure results in quieter operation, longer component life, and reduced operating costs (by requiring fewer cycles or passes on the equipment to achieve a given result).

Marketing and Sales

Our marketing and sales activities are conducted through a corporate marketing and sales group that is responsible for the worldwide marketing and sales of all products and services.

Corporate marketing programs include advertising, public relations, direct mail, seminars, webinars, listings in online buyers' guides, a website with extensive educational content, trade shows, speaking engagements and telemarketing. In 2009, the marketing department implemented a lead-generating webinar series which educates attendees about the value and uses of Microfluidics technology, configured and deployed the Salesforce.com customer relationship management system, and updated its corporate website (www.microfluidicscorp.com) to reflect new products, services and positioning. In February 2010, the company held a global sales meeting outside of Boston to train over 40 global representatives and distributors on new products, applications, technologies and selling strategies. We may partner on marketing efforts with non-competitive companies with whom we share customers, as we do through our partnership with HORIBA Instruments Inc., a world leader in producing and distributing particle size measurement and analysis equipment. Additionally in 2009, we formed a partnership with Particle Sciences, Inc. a full service CRO as well as an integrated provider of both standard and nanotechnology approaches to drug development and delivery. This alliance will enhance our efforts to launch MRT successfully in the pharmaceutical industry.

In addition, we have an active program of field demonstrations. As an aid to the marketing and sales activity for the equipment, we provide qualified prospective customers with complimentary lab sample processing in our Microfluidics Technology Center and application laboratories. The Technology Center is located at our corporate headquarters in Newton, Massachusetts, with other similarly-equipped laboratories at our offices in Irvine, California, and Lampertheim, Germany. These labs provide processing as well as particle size and distribution analysis of a prospective customer's sample formulation. In 2009, approximately 15% of laboratory trials result in equipment orders within twelve months. A prospective customer may pay for subsequent laboratory time and services on a fee for-services-basis as part of our Process Development Consulting services.

In addition, we have an active equipment rental program designed to allow customers to use Microfluidizer processor equipment at their own location to experiment with and develop product formulations and processes. We have a rental pool of equipment to service the needs of customers, including laboratory and pilot production machines. A significant percentage of customers who rent our equipment elect to purchase the rental equipment or to purchase new equipment. For our policies on product warranties, see "Critical Accounting Policies Product Warranties" under Item 7 of Part II.

Our distributors and sales agents worldwide are supported with collateral literature and trade show materials. These distributors and sales agents may advertise directly on their own behalf and attend regional and international trade shows.

Table of Contents

We sell our equipment and services in the Americas (United States, Central and South America, Mexico and Canada) through a network of independent manufacturers' representative firms that are managed by our regional sales managers. In Europe, the Middle East and Africa (EMEA), we sell our equipment through a network of independent regional sales agents who are managed by our Lampertheim-based EMEA sales organization. In Asia and the Pacific Rim, we sell through a network consisting of a distributor and independent manufacturer's representative firms. The sales activities in each of these three regions are led by a regional sales vice president reporting directly to our Chief Executive Officer. Spare parts are sold by distributors or directly by our customer service team.

Customers

The users of our systems are in various industries, including the pharmaceuticals, biotechnology, chemical, nutraceutical/food, academic, and cosmetic industries. Our customers include end users and distributors. In 2009 one customer, Novartis, accounted for 15.3% of revenue. In 2008 Glaxo Smith Kline and its subsidiaries accounted for 20.2% of revenues. No other company accounted for more than 10% of our revenue in either 2009 or 2008. In 2007, no company accounted for more than 10% of our revenue. With regard to sales to distributors, no individual end-user represents 10% or more of our revenues in year 2009, 2008 and 2007. Sales to the Pharma/Biotech industry were approximately \$11,364,000 in 2009, \$8,759,000 in 2008 and \$6,129,000 in 2007. Sales to the Pharma/Biotech industry grew by approximately 30% in 2009 and 43% in 2008.

We sell our products in various countries. Our revenues from sales in the United States were approximately \$8,819,000 in 2009, \$6,811,000 in 2008, and \$7,707,000 in 2007, which accounted for 56.0%, 45.7%, and 55.21% of our revenues in 2009, 2008, and 2007, respectively. Our sales in North America, including the United States, Canada and Mexico, accounted for approximately 62.6% of our revenues in 2009, 49.9% of our revenues in 2008, and 60.4% of our revenues in 2007, with almost all of those sales coming from the United States and Canada. Sales to the rest of the world accounted for approximately 37.4% of our revenues in 2009; 50.1% of our revenues in 2008; and 39.6% of our revenues in 2007. In particular, approximately 5.5%, 12.2%, and 2.7%, of our revenues in 2009, 2008, and 2007, respectively, resulted from sales to Belgium. In addition, approximately 5.5%, 9.8%, and 12.9%, of our net revenues resulted from sales to Japan and Korea in 2009, 2008 and 2007, respectively. For additional information on revenues, profit or loss and total assets for each of the last three fiscal years, see "Financial Statements and Supplementary Data" under Item 8 of Part II below. For risks related to our sales to customers in foreign countries, see the following "Risk Factors", under Item 1A of Part I below "We may be subjected to increased government regulation which could affect our ability to sell our products outside of the United States" and "Our international business operations expose us to a variety of risks."

Competition

The Microfluidizer processor equipment product line of high shear fluid processors has direct competition in its major markets. There are other technologies which may also be used to achieve or approximate the results of processing on our equipment, for example, sonicators, homogenizers and/or ball mills, among others. Although we believe direct competitors cannot match the Microfluidizer results for particle size, uniformity and scalability, our direct competitors do provide lab and production mixing equipment which competes against our technology. However we believe that our products have a larger installed base and performance advantages over products from our competitors. We also believe that our "fixed-geometry" interaction chambers, which permit a linear scale up, offer a unique equipment competitive advantage. In addition, we believe that the Microfluidizer processor equipment product line offers the highest shear forces available in the process equipment market today. Studies have shown that for critical formulations, Microfluidizer processors produce repeatable and uniform higher quality products for our customers.

Table of Contents

The M-700 series of fluid processors provides high shear fluid processing capabilities for sanitary, sterile, and industrial applications. We believe that the Microfluidizer processor product line provides a distinct advantage over the product lines of our competitors with respect to the processing of abrasive slurries or solids dispersed in liquids in large part because of our unique, wear-resistant, diamond interaction chamber and the special design of the intensifier pumping system. Incorporation of our developed components in the M-700 series equipment reduced the cost of these units, and they are priced competitively with lesser capability processing equipment offered by our competitors.

MRT is in the beginning stages of commercialization and we may encounter significant competition. There are other companies that possess patents and claims to equipment or processes that claim to make production quantities of nanoparticles. If our potential clients adopt our competitor's technology, we may not be able to fully commercialize MRT.

We face, and will continue to face, substantial competition from other companies who manufacture and sell materials processing systems. We are subject to significant competition from organizations that are pursuing technologies and products that are similar to our technology and products. Our future success will depend in large part on maintaining our current technologically superior product line and competitive position in the fluid processing systems field. Rapid technological development by us or others may result in our products or technologies becoming obsolete before we recover the expenses we incur in connection with their development. Products offered by us could be made obsolete by less expensive or more effective technologies. There can be no assurance that we will be able to make the enhancements to our technology necessary to compete successfully with newly emerging technologies. We expect competition to intensify in the materials processing systems field as technical advances are made and become more widely known.

Competition for our services is minimal, since other organizations do not possess the knowledge of Microfluidics processors or the domain expertise around pertinent processes that Microfluidics' employees collectively possess and apply in delivering these services.

Research and Development

It is our position that a greater proportion of our sales in the future will be for more advanced processor production systems that will incorporate features not currently included in many of the current production machines. In order to meet such a challenge going forward, it became necessary to hire additional research and development personnel. It also became necessary, as a result of this decision, to increase spending in research and development. Additional resources in both personnel and spending may be required in the future.

Our research and development efforts are focused on: (i) developing new processing applications for the process industries; (ii) further enhancements to the functionality, reliability and performance of existing products; (iii) development of the Microfluidics Reaction Technology (MRT) by working with customers who assist in the development of the system with both applications knowledge and financial support; and (iv) an internal development program relating to processor and applications and MRT creation of a variety of nanomaterials. There can be no assurance that we will be able to meet the enhancement challenges posed by applications of our core Microfluidizer processor business. Likewise, there can be no assurance that we will be able to design and manufacture systems for our Microfluidics Reaction Technology applications that will deliver the desired result for specific applications. For the years ended December 31, 2009, 2008 and 2007, research and development costs were \$1,712,000, \$2,116,000, and \$1,863,000, respectively.

Cooperative Research Arrangements

We subsidize research and development activities centered around Microfluidizer processor technology at a number of research centers and universities. Our subsidy of these activities takes the

Table of Contents

form of substantial reduction or elimination of the customary rental charges for Microfluidizer processor equipment provided for use. We have, in past years, subsidized research and development in the following fields at the following universities:

| University | Field of Research/Development |
|---------------------------------------|---|
| University of Massachusetts, Lowell | Biotechnology and nanotechnology |
| Massachusetts Institute of Technology | Nanoemulsions for biomedical applications |
| Marine Biological Laboratory | Cell disruption |
| University of Toronto | Genomic research and expression |
| University of Karlsruhe | Food formulations and products |
| Northeastern University | Pharmaceutical nanotechnology particles |
| The Hebrew University of Jerusalem | Colloid chemistry emulsion technology |
| University of Vienna | Food formulations and products |
| Rice University | Quantum dots |

In addition to their research activities, these universities provide us with contacts at industrial companies that may utilize Microfluidizer processor technology. We continue to have a research and collaboration arrangement with the University of Massachusetts, Lowell (UML) to develop new applications, processes and products in the area of nanomaterials utilizing our leading-edge materials processing and MRT equipment. To date, we and UML have funded four research grants, each utilizing the Microfluidizer processor. Additionally, on occasion, research reports, technical papers, and doctoral theses may be published, which document the use of Microfluidizer processor technology. Finally, we engage in many informal co-operative development efforts with our customers.

Patents and Proprietary Rights Protection

To protect our proprietary rights, we rely on trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. Our United States Microfluidizer processor equipment method patent expired on March 13, 2007 and our device patent expired on August 6, 2002. In addition, we neither applied for nor obtained patent or trademark protection for our Microfluidizer processor equipment or our interaction chamber in any country other than the United States and, as a result, our proprietary rights are not subject to the protection of patent or trade mark laws of foreign countries where the equipment is sold. We do not believe that the expiration of our processing equipment device or method patents has resulted in or will result in any material detriment to us since we have made many alterations, improvements and advances to our equipment over the years with such modification and innovations having been treated by us as trade secrets.

We are pursuing patent protection in the United States and select foreign jurisdictions with respect to proprietary aspects of our MRT Processor. We filed a U.S Patent application for this technology in March 2008 and a Patent Cooperation Treaty (PCT) in March 2009 and plan to file selected national patents in 2010. We are awaiting responses to these filings.

In 1997 we completed development of a novel adaptation of our Microfluidizer processor equipment a "Multiple Stream High Pressure Mixer/Reactor," commercially designated as the Microfluidizer Mixer/Reactor (MMR). In August 1997, we filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998. In July and November, 2000, the USPTO issued us notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised us it would grant our MMR patent substantially as applied for, including our device and process claims.

In order to afford additional protection to our intellectual property, in November 2006 we added a provision to our standard terms and conditions of purchase. This provision is an acknowledgement and

Table of Contents

agreement by the purchaser of our parts and equipment that certain aspects of our proprietary intellectual property, including the design, operation and use of the equipment interaction chamber or reaction chamber, constitutes our trade secret information. The purchaser agrees that it will not (and will not aid, assist or permit any other person to): (i) tamper with the equipment, (ii) utilize imaging equipment or other means to reveal the inner structures and/or designs of the equipment, (iii) attempt to disassemble or reverse engineer the equipment, including specifically the interaction or reaction chamber, or (iv) otherwise attempt to discover and/or utilize any of the trade secret information. The purchaser is further prohibited from disclosing (or aiding, assisting or permitting third parties to disclose) any information which the purchaser may learn or discover about the materials and methods of construction, design, assembly, functioning, geometries, measurements and tolerances of the internal components of the equipment. In the event of a violation of any of the above prohibitions, our standard terms and conditions further stipulate that the purchaser is liable to us and/or our subsidiary, Microfluidics Corporation, for any and all actual and potential, direct, indirect, incidental and consequential damages, including, without limitation, resulting lost profits, and all available equitable relief. We have made this provision applicable to purchasers, renters and subsidized users of the equipment. Despite the protection afforded by this provision, there can be no assurance that we will be able to monitor compliance by all users or that if we become aware of a violation that we will be able to enforce our rights regarding a violation.

We also maintain confidentiality agreements with our employees and confidentiality agreements and non-competition agreements with third parties to whom we disclose non-public technical information relating to our equipment. We believe that enforcement of the provisions of these agreements provides further protection for our proprietary information. However, in the event of a material breach of these agreements our valuable intellectual property may be disclosed to third parties (including competitors). As a result of such an event, despite provisions for equitable relief and damages; we may suffer competitively and be materially and negatively impacted as a result of any unauthorized disclosure.

Manufacturing

At present, we subcontract the manufacture and/or machining and finishing of many of the components of our equipment to third parties, with the remaining fabrication, assembly and performance testing undertaken by us in our Newton, Massachusetts location. We have selected certain primary suppliers based upon pricing terms, quality of their products, and the vendor's delivery and performance record.

The loss of any primary supplier could have a material, adverse effect on our business, financial condition, or results of operations. Therefore, we have identified alternative suppliers for our most critical components ("Alternative Sources"). There can be no assurance that a transition to such Alternative Sources will not entail transitional delays, quality assurance and quality control difficulties, or delivery problems, any or all of which would likely have an impact on our production of equipment and could have a material adverse effect on our business, financial condition, or results of operations.

Government Regulation

Certain of our customers utilize our equipment in processes and production that is subject to government regulation. For example, manufacture of pharmaceutical products may require approval from the U.S. Food and Drug Administration (FDA) within the United States and from comparable agencies in foreign countries. The FDA has established mandatory procedures, safety standards and protocols that apply to the manufacture, clinical testing and marketing of new pharmaceutical products in the United States. The process of obtaining FDA approval of a new product takes a number of years and often involves the expenditure of substantial resources by our customers. The FDA approval

Table of Contents

process can result in long lead times that are attendant to manufacturing equipment orders for these applications.

Further, in addition to product approvals, the FDA imposes requirements on manufacturing practices, record keeping and reporting ("current Good Manufacturing Practices" or "cGMP"). cGMP-regulated companies are subject to inspections by the FDA (inclusive of Microfluidizer processor equipment) and product approvals may be withdrawn if cGMP are not met.

At present, our customer base includes companies who use Microfluidizer processor equipment to manufacture FDA approved drugs, preparations, and products, such as sunscreens and cosmetic lotions for external use as well as FDA approved parenteral (injectable) drugs or compounds such as vaccines and anesthesia.

For our equipment entering Europe, CE compliance (Regulatory Compliance with European Safety Standards) is required. All products manufactured for European customers (and for any others who may request it) by us are CE compliant through self certification.

Various laws, regulations and recommendations relating to safe working conditions, laboratory practices and the purchase, storage, movement, import and export, use and disposal of harmful or potentially harmful substances that may be used in connection with our research work are, or may be, applicable to our activities. These laws include, among others, the United States Atomic Energy Act, the Clean Air Act, the Clean Water Act, the Occupational Safety and Health Act, the National Environmental Policy Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, national restrictions on technology transfer, import, export and customs regulations and other present and possible future local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. Certain agreements that may be entered into by us involving exclusive license rights may also be subject to antitrust regulatory control, the effect of which cannot be predicted.

To date we have not been affected by any United States governmental restrictions on technology transfer, import, export and customs regulations and other present local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act of 2001 and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of our equipment will not be impacted by such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on our business, financial condition, or results of operations.

Backlog

Our sales order backlog related to continuing operations of accepted and unfilled orders at March 24, 2010 and March 24, 2009 was approximately \$2,986,000 and \$2,200,000, respectively. Backlog represents orders in hand that typically take between one and six months to deliver. Backlog as of any particular date should not be relied upon as indicative of our net revenues for any future period.

Employees

We have approximately 50 full-time and 2 part-time employees as of March 1, 2010. None of our employees are covered by a collective bargaining agreement, and the Company considers its relations with its employees to be satisfactory. We believe that our future success will depend in large part on our ability to attract and retain highly skilled employees.

Table of Contents

Available Information and Website

Our website is www.microfluidicscorp.com. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and exhibits and amendments to those reports filed or furnished with the Securities and Exchange Commission pursuant to Section 13(a) of the Exchange Act are available for review on our website. Any such materials that we file with, or furnish to, the Securities and Exchange Commission in the future will be available on our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the Securities and Exchange Commission. The information on our website is not incorporated by reference into this Annual Report on Form 10-K.

Item 1A. Risk Factors

You should carefully consider the risks and uncertainties described below and the other information in this filing before deciding to purchase our common stock. If any of these risks or uncertainties occurs, our business, financial condition or operating results could be materially harmed. In that case the trading price of our common stock could decline and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we may face. We believe that this filing contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to regulatory risks and clinical uncertainties. Such statements are based on management's current expectations and are subject to facts that could cause results to differ materially from the forward-looking statements. For further information you are encouraged to review our filings with the Securities and Exchange Commission, including our Quarterly Reports on Form 10-Q for the periods ended March 31, 2009, June 30, 2009 and September 30, 2009.

We have experienced operating losses in four of our last five fiscal years, including the fiscal year ended December 31, 2009, and we may not be able to achieve consistent profitability in the future.

For four of the past five fiscal years, including for fiscal 2009, we have experienced losses from continuing operations. For the year ended December 31, 2009 and the year ended December 31, 2008, we had a net loss of \$362,000 and \$4,011,000, respectively. Although we have significantly improved our operating results during fiscal 2009, including recording positive net income in the third and fourth quarters of 2009, in the future the Company may not be able to achieve consistent profitability on a quarter by quarter and year over year basis.

The Company must remain cash-flow positive.

We believe that our expected revenues and customer advances, together with our existing cash balance at December 31, 2009 and the availability under our working capital line should be sufficient to meet our working capital requirements for the next twelve months. In the first quarter of 2009 we initiated an aggressive cost reduction program that includes headcount reductions as well as the elimination of all non-essential discretionary spending such as travel, consulting and marketing programs. As a result of these initiatives and the cost reduction program, the Company was cash-flow positive for the year ended December 31, 2009. However, if we sustain a revenue shortfall that we can't compensate with additional cost cuts, or our current credit facility is withdrawn or not renewed, it is possible that we could face unsustainable liquidity pressures. This concern is accentuated by the fact that current credit markets, coupled with our history of losses, has made it possible that we would not be able to obtain alternative or additional financing. Under these circumstances, it is possible that we could default under our financing agreements, which default could force us to seek protection under the bankruptcy laws and cause our investors to sustain a loss of their investment in our shares.

Table of Contents

Increased concerns about the financial markets, economic conditions, and corporate profits may exacerbate certain risks affecting our business.

We cannot project the extent of the impact of the economic environment specific to our industry. Continued or increased concerns about credit markets, consumer confidence, economic conditions, volatile corporate profits and reduced capital spending could negatively impact demand for our products. In the future, we may experience reduced demand for our products because of the uncertainties in the general economic environment in which our customers and we operate. The on-going tightening of credit in financial markets may adversely affect the ability of our customers and suppliers to obtain financing, which could result in a decrease in, or deferrals or cancellations of, the sale of our products. Although there have been signs of an improving economy, if global economic and market conditions, or economic conditions in the United States, remain uncertain, deteriorate, or enter into a period with no or flat growth we may experience a material adverse effect on our business, operating results and financial condition. Unstable economic, political and social conditions make it difficult for our customers, our suppliers and us to accurately forecast and plan future business activities. If such conditions persist, our business, financial condition and results of operations could suffer. We cannot project the extent of the impact of the economic environment specific to our industry.

The failure of any banking institution in which we deposit our funds or the failure of such banking institution to provide services in the current economic environment could have a material adverse effect on our results of operations, financial condition or access to borrowings.

The capital and credit markets have been experiencing extreme volatility and disruption. In some cases, the markets have exerted downward pressure on stock prices and credit capacity for certain issuers, as well as pressured the solvency of some financial institutions. Some of these financial institutions, including banks, have had difficulty performing regular services and in some cases have failed or otherwise been largely taken over by governments. If we are unable to access some or all of our cash on deposit, either temporarily or permanently, or are unable to access our Revolving Line of Credit with Webster Bank, it could have a negative impact on our operations, including our reported net income, or our financial position, or both.

The occurrence of an event of default under our financing arrangements could result in substantial losses to our stockholders.

Both our Revolving Line of Credit and our Convertible Debenture contain events of defaults, which are more fully described in our Form 8-Ks filed by the Company with the Securities and Exchange Commission on October 26, 2009 with respect to the Revolving Line of Credit and November 20, 2008 with respect to the Convertible Debenture. In addition, the Revolving Line of Credit and Convertible Debenture contain cross default provisions, which provides that an event of default under our Revolving Line of Credit or Convertible Debenture may also trigger an event of default under the other financing agreement. If we were to experience an event of default under our Revolving Line of Credit or our Convertible Debenture, that is not cured or waived within any applicable cure periods, in addition to other remedies that may be available to Webster Bank and GSP, the parties may accelerate the obligations under these financing arrangements and they may exercise their remedies against the secured collateral, which is substantially all of our assets. If an event of default occurs, there can be no assurance that we would be able to repay the obligations under these financing arrangements or be able to raise additional funds to make such payments. Failure to repay these financing arrangements could force us to reorganize our debts, possibly in bankruptcy, in which event our common stock could likely become worthless.

Table of Contents

We face intense competition in many of our markets.

Our Microfluidizer product line of high-shear fluid processors has direct competition in its major markets, including its most important markets in the pharmaceutical, biotechnology and coatings/chemical industries. The severity of the competition that we confront requires that we continuously invest in research and development in order to keep our product line competitive. Despite such expenditures, however, there can be no assurance that we will be able to meet the enhancement challenges posed by our competitors, or that we will be able to create or exploit the kinds of innovations, such as our Microfluidics Reaction Technology, needed to drive future sales.

In addition, we face, and will continue to face, intense competition from other companies who manufacture and sell fluid processing systems used in particle size reduction, mixing, milling, dispersing, homogenizing, cell disruption and liposomal encapsulation applications. We expect competition to intensify in the fluid processing systems field as technical advances are made and become more widely known, and such increased competition may have a material adverse effect upon our business.

Our future success will depend in large part on our ability to maintain a technologically superior product line. Rapid technological development by us or others may result in our products or technologies becoming obsolete before we recover the expenses we incur in connection with their development. Products offered by us could be made obsolete by less expensive or more effective technologies or may never achieve market acceptance. There can be no assurance that we will be able to make the enhancements to our technology successful in the enhancement, introduction, manufacturing and marketing of any new technologies, products or product innovations, or develop and introduce, in a timely manner, innovations to our existing technologies or products that satisfy our customers' needs or achieve market acceptance to compete successfully with newly emerging technologies and products of our competitors.

If we fail to retain key personnel and hire, train and retain qualified employees, we may not be able to compete effectively, which could result in reduced revenue or increased costs.

Our success is highly dependent on the continued services of key management, technical and scientific personnel. Our management and other employees may voluntarily terminate their employment at any time upon short notice. The loss of the services of any member of the senior management team, including the Chief Executive Officer, Michael Ferrara, Peter Byczko, the Chief Accounting Officer, William Conroy, the Senior Vice President of Operations and Engineering, Thomai Panagiotou, Chief Technology Officer, William Kober Vice President of Sales The Americas and Western Asia, Xavier Leroy Vice President of Sales EMEA and South East Asia or any of the managerial, technical or scientific staff may significantly delay or prevent the achievement of product development and other business objectives. Our future success will also depend on our ability to identify, recruit and retain additional qualified scientific, technical and managerial personnel. Competition for qualified personnel in the technology area is intense where labor markets are particularly competitive, including Boston, Massachusetts and where demand for personnel with these skills is extremely high and is likely to remain high. As a result, competition for qualified personnel is intense, particularly in the areas of general management, finance, information technology, engineering and science, and the process of hiring suitably qualified personnel is often lengthy and expensive, and may become more expensive in the future. If we are unable to hire and retain a sufficient number of qualified employees, our ability to conduct and expand our business could be seriously reduced.

We may be unsuccessful in developing new products for existing markets.

Our strategy includes developing new products to drive organic growth in our businesses. We may be unsuccessful developing new products that will be well received in existing markets. The products we develop may have less market demand than we anticipate or the demand may be at substantially lower

Table of Contents

prices than we anticipate. Our competitors may develop new products or technologies that diminish demand for our new products. Our customers may receive decreased funding levels, which may cause their demand for our products to decrease. Our efforts to develop new intellectual property and new products may be costly. Substantial failure in our new product development program could have a material impact on our results of operation and our financial condition.

We may be unsuccessful in launching new products or expanding product offerings.

We recently announced the launch of our new LV1 Microfluidizer High Shear Fluid Processor on March 17, 2010. We also announced that we intend to develop a series of service offerings to address what we believe is a long-term growth opportunity within our customer base. Although we believe the new product and service offerings will present long-term opportunities for the Company, we may be unsuccessful in identifying and pursuing such opportunities. We may be unsuccessful in introducing the new product and service offerings, expanding current product offerings and commercializing new technologies. In addition, there may be a lack of demand in the present or in the future for the products that we introduce.

Our future growth is dependent upon the development of new products, which require significant research and development, and customer testing, all of which are very expensive and time consuming.

In order to develop new products and improve current product offerings, we focus our research and development programs largely on the development of next generation and novel technology offerings. The research, development, testing and commercialization of our MRT Processor and other novel technology is expensive and time consuming. We are in the early stages of commercialization of our MRT Processor, with certain potential customers testing beta products and receiving consulting services. We may experience significant delays in the testing process. Additionally, there are no assurances that our MRT Processor or any of our other next generation or novel technology offerings will gain market acceptance. The failure to gain or a prolonged delay in market acceptance or an extended testing period may have a material adverse effect on our results of operations and financial conditions.

We are dependent on a relatively small number of customers for a significant portion of our net sales.

A significant portion of our net sales is derived from a relatively small number of customers with sales to three customers accounting for 28% of our revenues in 2009. We expect to continue to depend upon our principal customers for a significant portion of our sales, although our principal customers may not continue to purchase products and services from us at current levels, if at all. The loss of one or more major customers or a change in their buying patterns could have a material adverse effect on our business, financial condition, and results of operations.

We rely on suppliers, vendors and subcontractors.

We do not manufacture most of the components contained in our Microfluidizer materials processor equipment, but rather subcontract the manufacture of most components. Based on quality, price, and performance, we have selected certain suppliers, vendors, and subcontractors that provide parts, subassemblies, machining and finishing of components that are assembled by our production staff. It is possible that as a result of the recent economic slowdown or other reasons, one or more of our suppliers, vendors or subcontractors could go out of business, or not ship on open account, or otherwise be unable to supply our needs. Although we have identified alternate sources for parts, components, machining and finishing integral to the manufacture of our products, there can be no assurance that a transition to an alternative source would not entail quality assurance or quality control difficulties, on-time delivery problems, or other transition problems, any or all of which could have an

Table of Contents

impact on our production of equipment and could have a material adverse effect on our business, financial condition, or results of operations.

Many of our current and potential customers are from the pharmaceutical and biotechnology industries and are subject to risks faced by those industries.

We derive a substantial portion of our revenues from pharmaceutical and biotechnology companies. We expect that pharmaceutical and biotechnology companies will continue to be our major sources of revenues for the foreseeable future. As a result, we are subject to risks and uncertainties that affect the pharmaceutical and biotechnology industries, such as pricing pressures as third-party payers continue challenging the pricing of medical products and services, government regulation, ongoing consolidation and uncertainty of technological change, and to reductions and delays in research and development expenditures by companies in these industries.

In particular, the biotechnology industry is dependent on raising capital to fund operations. If biotechnology companies are unable to obtain the financing necessary to purchase our products, our business and results of operations could be materially adversely affected. As it relates to both the biotechnology and pharmaceutical industries, many companies have significant patents that have expired or are about to expire, which could result in reduced revenues for those companies. If pharmaceutical companies suffer reduced revenues as a result of these patent expirations, they may be unable to purchase our products, and our business and results of operations could be materially adversely affected.

In addition, we are dependent, both directly and indirectly, upon general health care spending patterns, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, as well as upon the financial condition and purchasing patterns of various governments and government agencies. Many of our customers, including universities, government research laboratories, private foundations and other institutions, obtain funding for the purchase of products from grants by governments or government agencies. There exists the risk of potential decrease in the level of governmental spending allocated to scientific and medical research, which could substantially reduce or even eliminate these grants. If government funding necessary to purchase our products were to decrease, our business and results of operations could be materially adversely affected.

Lastly, because our Financing was provided by an affiliate of a pharmaceutical company that competes with other pharmaceutical companies, it is possible that the other companies might decide against doing business with us in the future for competitive reasons. If a significant number of pharmaceutical companies were to reduce their purchases of our products for this or any other reason, our business and results of operations could be materially adversely affected. General health care spending patterns may also be affected by federal regulation, including the recent health care bills before congress, which may effect research budgets.

We have only one manufacturing facility.

We have a single manufacturing facility located in Newton, Massachusetts. Our success depends on the efficient and uninterrupted operation of that facility. Whether as a result of a fire, natural disaster, or other cause, any disruption to our manufacturing operations would significantly impair our ability to operate our business on a day-to-day basis. Although we maintain business interruption insurance, our business would be injured by any extended interruption of the operations of our manufacturing facility. Further, our insurance coverage may not be adequate to compensate us for all losses that may occur, or may not continue to be available to us. Finally, if we seek to replicate our manufacturing operations at another location, we will face a number of technical as well as financial challenges, which we may not be able to address successfully.

Table of Contents

We rely on our trade secrets to protect our technology.

Our Microfluidizer processor equipment method patent expired on March 13, 2007 and our device patent expired on August 6, 2002. In addition, we have neither sought patent protection for our Microfluidizer processor or our interaction chamber nor trademark protection of our Microfluidizer trade name in any country other than the United States. As such, our proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where our equipment is sold. Although we have made many alterations, improvements and advances to our equipment over the years and continue to make such advancements with such modifications and innovations having been and being treated by us as trade secrets, the lack of our patent protections will expose us to potential competition that would likely have a material adverse effect on us.

To protect our proprietary rights, we rely on a combination of trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of a breach of these protections, there can be no assurance that these measures will prove to have been adequate to protect our interests, or that we will have sufficient resources to prosecute or prevail in an action against a third party.

We have recently filed patent applications for our MRT Technology. If we are unable to obtain or maintain patent protection or if our patents do not provide protection against competitive products of our MRT Technology, our results of operations may be adversely affected.

Our future success is dependent in part on our ability to obtain and maintain patent protection for our MRT Technology. In 1997 we completed development of a novel adaptation of our Microfluidizer processor equipment a "Multiple Stream High Pressure Mixer/Reactor", commercially designated as the Microfluidizer Mixer/Reactor (MMR). In August 1997, we filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998. In July and November, 2000, the USPTO issued us notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised us it would grant our MMR patent substantially as applied for, including our device and process claims. We are in the process of pursuing national entry in France, Germany, Italy, The Netherlands, and the United Kingdom. We are currently pursuing our MMR patent application in Canada.

We are pursuing patent protection in the United States and select foreign jurisdictions with respect to proprietary aspects of our MRT Processor. We filed a U.S Patent application for this technology in March 2008 and a Patent Convention Treaty (PCT) in March 2009 and plan to file selected national patents in 2010. We are awaiting responses to these filings.

There can be no assurance that (i) any patents issued to us will provide us with any competitive advantages or adequate protection for our inventions; (ii) any patents issued to us will not be challenged, invalidated or circumvented by others; or (iii) issued patents, or patents that may be issued, will provide protection against competitive products or otherwise be commercially valuable. Furthermore, patent law relating to the scope of claims in the fields of healthcare and biosciences is still evolving, and our patent rights are subject to this uncertainty. European and United States patent authorities have not adopted a consistent policy regarding the breadth of claims allowed for health and bioscience patents. Our patent rights on our products therefore might conflict with the patent rights of others, whether existing now or in the future.

In order to protect or enforce our patent rights, we may initiate patent litigation against third parties. We may also become subject to interference proceedings conducted in the patent and trademark offices of various countries to determine the priority of inventions. The defense and prosecution, if necessary, of intellectual property suits, interference proceedings and related legal and administrative proceedings would be costly and divert our technical and management personnel from

Table of Contents

their normal responsibilities. We may not prevail in any of these suits should they occur. An adverse determination of any litigation or defense proceedings could put our patent applications at risk of not issuing.

We may be subjected to increased government regulation that could affect our ability to sell our products outside of the United States.

Although United States governmental restrictions on technology transfer, import, export and customs regulations and other similar local, state or federal regulations, have not had a significant effect on us historically, any future legislation or administrative action restricting our ability to sell our products to certain countries outside the United States could significantly affect our ability to make certain foreign sales. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of our equipment will not be impacted by any such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on our business, financial condition, or results of operations. Also, certain agreements that may be entered into by us involving exclusive license rights may also be subject to national or supranational antitrust regulatory control, the effect of which cannot be predicted.

Our stock is listed on the OTC Bulletin Board and our stockholders may have limited liquidity.

Our common stock is quoted on the OTC Bulletin Board, which provides significantly less liquidity than a securities exchange (such as the NYSE Amex, New York Stock Exchanges or The NASDAQ Stock Market). In general, over the past two years, fewer than 20,000 shares of our common stock have traded on a daily basis. Although a more active trading market may develop in the future, the limited market liquidity for our stock may affect your ability to sell at a price that is satisfactory to you. The market price of our common stock may have increased volatile and could decline in the future in response to various factors including:

volatility of the financial markets

uncertainty regarding the domestic and foreign economies

technological innovations by competitors or competing technologies

quarterly revenues and operating results fluctuating or failing to meet the expectations of management

conditions or trends in the pharmaceutical and biotechnology industries

announcement of significant changes in financing or strategic partnerships

Our ownership structure includes several investors who own large blocks of common stock or convertible securities whose interests and rights in our company may differ in important respects from those of our other common stock investors.

Several investors in the Company own large concentrations of our common stock or securities convertible into our common stock, making our shares more illiquid than if our ownership structure were more widely distributed. The concentration in the ownership of our common stock and the rights of the holder of our Convertible Debenture and warrants impact the trading liquidity of our common shares, our corporate governance, and the relative economic stake that our common stock and Convertible Debenture and warrants have in the enterprise value of our business. Although a more active trading market may develop in the future, the limited market liquidity for our stock may affect

Table of Contents

your ability to sell at a price that is satisfactory to you. The market price of our common stock may be adversely effected should the one large investor convert the Debenture and warrants into common stock or several large investors sell at the same time. Additionally, if the holder of our Convertible Debenture and warrants were to convert and sell such shares or a large stockholder were to sell their shares our stock price may be adversely effected.

Our quarterly revenues and stock performance are variable.

The timing of orders including completion of our factory acceptance testing can impact the actual shipment date, which will significantly affect quarterly revenues and net income results for particular quarters which may cause increased volatility in both our revenues and stock price.

We allow our customers to lease some of our products and those leases may not turn into sales.

We sometimes rent our products to our customers prior to or instead of selling a product to a customer. Our products are expensive, and customers frequently want to test out a product's capabilities prior to purchase. We have had reasonable success in converting rentals into subsequent sales of the same or a newer product; however, there is no guarantee that we will continue to be able to convert any of our leases into sales.

We may be subject to product liability claims from our customers or by persons harmed by our customers' products.

We maintain what we deem to be reasonable levels of product liability coverage through insurance policies with a reasonably small deductible. Nonetheless, inasmuch as we sell our equipment to a number of customers who make pharmaceutical preparations and consumer cosmetics, there can be no assurance that if a consumer of end products is injured or dies from such product that a suit by an injured party (or a class of similar situated plaintiffs) will not include us as well as the maker of the drug or cosmetic. Although we may have no control over the manufacture of end-products made on our equipment, we may not be able to bar a plaintiff's claims against all parties whose products and equipment were involved in the manufacturing process under a variety of legal theories of liability. We may be required to present a vigorous and costly defense if we cannot be dismissed from such an action. The cost of such legal defense may significantly impact our cash flow.

Our international business operations expose us to a variety of risks.

For the years ended December 31, 2009, 2008, and 2007, shipments outside of North America accounted for approximately 37.4%, 50.1%, and 39.6%, respectively, of our net revenues in those periods. In particular, approximately 5.5%, 12.2%, and 2.7% of our net revenues in 2009, 2008, and 2007, respectively, resulted from sales to Belgium. In addition, approximately 5.5%, 9.8%, and 12.9%, of our net revenues resulted from sales to Japan and Korea in 2009, 2008 and 2007, respectively. We expect that shipments outside of North America will continue to account for a significant portion of our total net product revenues.

We attempt to reduce some of our risk related to sales and shipments outside of the United States by requiring that our contracts generally be paid in United States Dollars. Nevertheless, a downturn in the economies of Japan, Korea or Europe might reduce investment in new technology or products while a weakening of foreign currency against the United States Dollar would make our products more expensive, each of which could have a substantial impact on our operating results.

In addition, a significant portion of our total net revenue is subject to the risks associated with shipping to foreign markets in general, including unexpected changes in legal and regulatory requirements; inability to collect receivables, seasonality of our revenue in Europe; changes in tariffs; political and economic instability; risk of terrorism; difficulties in managing distributors and

Table of Contents

representatives; difficulties in protecting our intellectual property overseas; and natural disasters, any of which could have a negative impact on our operating results.

We may experience difficulties in the future in complying with Sarbanes-Oxley Section 404 ("Section 404"); and continued implementation and maintenance of internal controls necessary for continued compliance with Section 404 may result in our incurring of additional costs.

We are required to evaluate our internal controls under Section 404 of the Sarbanes-Oxley Act of 2002. We were also required to furnish a report by our management on our internal controls over financial reporting beginning with our annual report on Form 10-K for the fiscal year ended December 31, 2008. Such report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of the end of our fiscal year, including a statement as to whether or not our internal control over financial reporting is effective. While we have completed our self-assessment as to the effectiveness of internal control over financial reporting for the year ended December 31, 2009, which did not identify material weaknesses in our internal control systems, there can be no assurance that future material weaknesses in our internal control systems will not be identified as a result of changing financial or operating conditions. In addition, although we are currently not required to subject our internal controls to audit by our independent registered public accounting firm until at least our fiscal year ending December 31, 2010, there can be no assurance that an audit of our internal controls will not result in the identification of a material weakness. If we fail to maintain proper and effective internal controls in future periods, it could adversely affect our operating results, financial condition and our ability to run our business effectively and could cause investors to lose confidence in our financial reporting. In the event that it is determined that our internal control over financial reporting is not effective, as defined under Section 404, investor confidence in us may be adversely affected and could cause a decline in the market price of our stock.

Future changes in financial accounting standards may adversely affect our reported results of operations.

A change in accounting standards can have a significant effect on our reported financial results. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. These new accounting pronouncements may adversely affect our reported financial results.

If our accounting estimates are not correct, our financial results could be adversely affected.

Management judgment and estimates are necessarily required in the application of our Critical Accounting Policies. We discuss these estimates in the subsection entitled Critical Accounting Policies beginning on page 26 included in the Management's Discussion and Analysis of Financial Condition and Results of Operations section of this report. If our estimates are incorrect, our future financial operating results and financial condition could be adversely affected.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Newton, Massachusetts. We also maintain a sales office and laboratory facility in Lampertheim, Germany, and in Irvine, California. We rent approximately 36,000 square feet of offices, production and research and development facilities at these locations for administrative, development and production activities. The lease terms expire at various times through December 2012 (with options under which we can extend the lease at the Newton facility through October 31, 2015). We believe these facilities will be adequate for operations for the next five years.

Table of Contents**Item 3. Legal Proceedings**

We are not a party to any legal proceedings, other than ordinary routine litigation incidental to our business, which we believe will not have a material affect on our financial position or results of operations.

Item 4. Removed and Reserved**PART II****Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***Market*

Our common stock is traded on the Over-the-Counter Bulletin Board under the symbol MFLU.OB. The following table sets forth the range of quarterly high and low bid quotations for the last two fiscal years, as furnished by the National Association of Securities Dealers Automated Quotation System. The quotations represent interdealer quotations without adjustment for retail markups, markdowns, or commissions, and may not necessarily represent actual transactions.

| | Fiscal Year 2009 | |
|-------------|------------------|---------|
| | High | Low |
| 1st Quarter | \$ 0.57 | \$ 0.19 |
| 2nd Quarter | 0.67 | 0.25 |
| 3rd Quarter | 0.91 | 0.40 |
| 4th Quarter | 1.09 | 0.60 |

| | Fiscal Year 2008 | |
|-------------|------------------|---------|
| | High | Low |
| 1st Quarter | \$ 1.29 | \$ 1.00 |
| 2nd Quarter | 1.21 | 1.00 |
| 3rd Quarter | 1.19 | 0.64 |
| 4th Quarter | 0.84 | 0.35 |

As of March 1, 2010, there were approximately 357 holders of record of our common stock.

Sales of Unregistered Securities

None.

Dividends

We have never paid any cash dividends on our common stock and presently anticipate that no dividends on our common stock will be declared in the foreseeable future. Our current policy is to retain all of our earnings to finance future growth. Under the terms of our financing agreements, we may not pay any dividends without first obtaining the written consent of GSP, as holder of the Convertible Debenture, or Webster Bank, as the bank providing our credit facility.

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

The selected financial information presented below is derived from our audited consolidated financial statements for each of the five years in the period ended December 31, 2009. The information set forth below should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and related Notes included elsewhere in this Form 10-K.

| <i>(in thousands, except share and per share data)</i> | For The Years Ended December 31, | | | | |
|---|----------------------------------|------------|------------|------------|-----------|
| | 2009 | 2008 | 2007 | 2006 | 2005 |
| Consolidated Statement of Operations Data: | | | | | |
| Total revenues | \$ 15,739 | \$ 14,871 | \$ 12,992 | \$ 15,654 | \$ 11,645 |
| Total costs and expenses | 15,616 | 18,753 | 14,174 | 14,450 | 12,416 |
| Operating income (loss) | 123 | (3,882) | (1,182) | 1,204 | (771) |
| Interest expense | (505) | (154) | (20) | (35) | (59) |
| Interest income | 2 | 25 | 64 | 50 | 26 |
| Net (loss) income before income taxes | (380) | (4,011) | (1,138) | 1,219 | (804) |
| Income tax (benefit) provision | (18) | | 369 | (58) | 185 |
| Net (loss) income | \$ (362) | \$ (4,011) | \$ (1,507) | \$ 1,277 | \$ (989) |
| Basic | \$ (0.03) | \$ (0.39) | \$ (0.15) | \$ 0.13 | \$ (0.10) |
| Diluted | \$ (0.03) | \$ (0.39) | \$ (0.15) | \$ 0.12 | \$ (0.10) |
| Weighted average shares outstanding: | | | | | |
| Shares used in computing net (loss) income per common share, basic | 10,380,157 | 10,296,296 | 10,183,376 | 10,012,685 | 9,756,221 |
| Shares used in computing net (loss) income per common shares, diluted | 10,380,157 | 10,296,296 | 10,183,376 | 10,611,635 | 9,756,221 |

| | As of December 31, | | | | |
|--|--------------------|----------|--------|----------|----------|
| | 2009 | 2008 | 2007 | 2006 | 2005 |
| Consolidated Balance Sheet Data: | | | | | |
| Cash and cash equivalents | \$ 2,185 | \$ 1,895 | \$ 756 | \$ 1,860 | \$ 1,452 |
| Current assets | 7,952 | 7,119 | 5,972 | 7,856 | 5,734 |
| Working capital | 4,543 | 4,464 | 4,382 | 5,643 | 4,273 |
| Total assets | 9,378 | 8,720 | 6,357 | 8,225 | 6,212 |
| Long-term debt (including current portion) | 4,679 | 4,625 | 65 | 312 | 563 |
| Total stockholders' equity | 1,290 | 1,440 | 4,767 | 5,947 | 4,426 |

Table of Contents

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

Future Operating Results

This report may contain forward-looking statements that are subject to certain risks and uncertainties including statements relating to our plan to achieve, maintain, and/or increase revenue growth, and/or operating profitability, and to achieve, maintain, and/or increase net operating profitability. Such statements are based on our current expectations and are subject to a number of factors and uncertainties that could cause actual results achieved by us to differ materially from those described in the forward-looking statements. We caution investors that there can be no assurance that the actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors, including but not limited to, the following risks and uncertainties: (i) whether the performance advantages of our Microfluidizer® materials processing equipment will be realized commercially or that a commercial market for the equipment will continue to develop, (ii) whether the timing of orders will significantly affect quarter to quarter revenues and resulting net income results for a particular quarter, which may cause increased volatility in our stock price, (iii) whether we will have access to sufficient working capital through continued and improving cash flow from sales and ongoing borrowing availability, the latter being subject to our ability to maintain compliance with the covenants and terms of our financing agreements, (iv) whether our technology will be adopted by customers as a means of producing MRT innovative materials in large quantities, (v) whether we will be able to deploy further prototype Microfluidics Reaction Technology systems for nanoparticle production and then manufacture and introduce commercial production Microfluidics Reaction Technology equipment, (vi) whether we will achieve a greater proportion of our sales in the future through the sale of advanced processor production systems, and (vii) as well as those risks set forth in Item 1A, "Risk Factors." We assume no responsibility to update any forward-looking statements as a result of new information, future events, or otherwise.

Overview

We have, for over 25 years, specialized in manufacturing and marketing a broad line of high shear fluid processing systems used in numerous applications in the pharmaceutical, chemical, biotech, nutraceutical/food and cosmetics industries.

Our line of high shear fluid processor equipment, marketed under our Microfluidizer trademark and trade name, process premixed formulations to produce small uniform structures, usually of the submicron and nanoscale size (commonly defined as particles having dimensions less than 100 nanometers) including nanostructures, microemulsions and nanosuspensions. The equipment produces commercial quantities of such materials important to producers of pharmaceuticals, coatings and other products. Further, our processor equipment scale ups produce formulations and results from 10 milliliters per minute on our laboratory and bench top models to more than 15 gallons per minute on our pilot and production models.

The technology embodied within our Microfluidizer high shear fluid processor is used for formulation of products that are normally very difficult to mix and stabilize. Microfluidizer processors through process intensification allow manufacturers in the pharmaceutical, chemical, cosmetic, and nutraceutical/food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Additionally, the equipment is used for cell disruption to harvest the cultivated contents of bacterial, yeast, mammalian and/or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

We continue our efforts to commercialize our proprietary equipment, processes and technology for the continuous production of precipitated submicron or nanoscale particles by interaction of discrete

Table of Contents

streams of reacting materials ("Microfluidics Reaction Technology" or "MRT"). We had previously introduced a patent pending Multiple Stream High Pressure Mixer-Reactor (MMR) system as a continuous chemical reactor, for conducting high-speed chemical reactions, many of which can be configured to produce nanoparticles. In 2009 we introduced our MRT processor technology, a proprietary coaxially fed reactor for moderate and slower speed reaction and those that require differential ratios of component feed stocks. MRT processor approach introduces the multiple reactant streams coaxially, rather than by impingement and in selected differing ratios, which allows the predetermined residence time for slower reactions. We have begun to sell beta versions of our MRT Processor and associated process technology consulting services to certain of our customers and anticipate working with them to further commercialize this technology.

In August 1997, we filed a patent application for the MRT processor device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998 and we intend to file for protection in selected countries in 2010. In July and November 2000, we were issued by the USPTO notices of allowances of utility patent claims regarding the MMR and the use thereof.

On September 18, 2002, the European Patent Office advised us it would grant its MMR patent substantially as applied for, including its device and process claims. We have gained national entry of the patent in France, Germany, Italy, The Netherlands, and the United Kingdom.

Results of Operations

Year Ended December 31, 2009 vs. December 31, 2008

Revenues

Total revenues for the year ended December 31, 2009 were approximately \$15,739,000, as compared to revenues of \$14,871,000 for the comparable prior year, an increase of approximately \$868,000, or 5.8%.

North American sales for the year ended December 31, 2009 increased to approximately \$9,856,000, a 32.8% increase, as compared to sales of approximately \$7,423,000 for the year ended December 31, 2008. The increase in North American sales was principally due to an increase in sales of production machines of approximately \$2,246,000 and an increase in sales of spare parts as a result of our bundling program with new equipment of approximately \$373,000, offset by a decrease in lab machines sales of approximately \$318,000. Sales outside of North America were approximately \$5,883,000 for the year ended December 31, 2009, compared to \$7,448,000 for the year ended December 31, 2008, a decrease of \$1,565,000, or 21.0%. The decrease in sales outside of North America was primarily due to a decrease in sales of machines of approximately \$2,008,000 offset by an increase in the sale of spare parts of approximately \$455,000. Sales to the Pharma/Biotech industry grew by approximately \$2,605,000 or 30% from \$8,759,000 in 2008 to \$11,364,000 in 2009. The growth the Company experienced in machine and disposable spare sales reflects the increase in production requirements for the H1N1 vaccine during 2009.

Cost of Goods Sold

Cost of goods sold for the year ended December 31, 2009 was approximately \$6,299,000, or 40.0% of revenue, compared to \$7,298,000, or 49.0% of revenue, for the comparable prior year. The decrease in cost of goods sold, in absolute dollars, for the year ended December 31, 2009 reflects improved efficiencies in the manufacturing process along with strong cost controls, pricing increases taking effect and appropriately adjusting our pricing for engineering time, factory and site acceptance, expedite fees, and other services requested by our customer.

Table of Contents

Our product margins on spare parts are greater than that of our production machines which are greater than that of our lab machines, which results in variations in our overall margins due to product mix. In addition, our product lines have different profit margins. Thus, our profit margins for each quarter may be affected by the product mix in the quarter. During the year ended December 31, 2009, spare part sales increased by \$881,000 or 24.6% compared to the year ended December 31, 2008, effecting product mix and improving gross margin year over year. This change in product mix and improved efficiencies in our manufacturing process together increased product margin by 9.0% for the year ended December 31, 2009 compared to the year ended December 31, 2008.

Research and Development Expenses

Research and development expenses for the year ended December 31, 2009 were approximately \$1,712,000, compared to \$2,116,000 for the comparable prior year, a decrease of approximately \$404,000, or 19.1%. The decrease in research and development expenses was primarily due to a planned decrease in payroll and related costs, including temporary help of approximately \$280,000 and a decrease in consultant costs of approximately \$130,000. The reductions in Research and Development were related to expenses that were not directly tied to new product development.

Selling Expenses

Selling expenses for the year ended December 31, 2009 were approximately \$4,315,000, compared to \$4,844,000 for the comparable prior year, a decrease of \$529,000, or 10.9%. The decrease is primarily attributable to a decrease in advertising costs of approximately \$167,000 resulting from the adoption of a new more cost effective marketing program, professional fees of \$133,000, freight charges of approximately \$121,000, sales meeting expenses of approximately \$56,000, travel expenses of \$32,000 primarily due to reduced spending for conferences and travel, and salary related expenses of approximately \$20,000.

General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2009 were approximately \$3,290,000, compared to \$4,495,000 for the comparable prior year, a decrease of \$1,205,000, or 26.8%. The decrease in general and administrative expenses is principally due to a reduction in overall headcount and related costs of approximately \$370,000, a reduction in consultant and professional fees of approximately \$576,000, a decrease in bank fees and financing charges of approximately \$206,000 resulting from the write off of previously capitalized costs as part of the financing arrangement with Silicon Valley Bank during the year ended December 31, 2008, and a decrease in recruiting charges partially offset by increases in travel expenses.

Interest Income and Expense

Interest expense for the year ended December 31, 2009 was approximately \$505,000 compared to \$154,000 for the comparable prior year, an increase of approximately \$351,000, or 228%. The increase is due interest expense on the \$5 million of convertible debt issued in November 2008. The convertible debt bears a fixed rate of 9% and is further described in Note 7 of the Consolidated Financial Statements.

Interest income for the year ended December 31, 2009 was approximately \$2,000 compared to \$25,000 for the comparable prior year, a decrease of \$23,000, or 92.0%. The decrease is due to the decrease in cash available for investing and lower interest rates.

Table of Contents

Income Tax Provision

The Company has incurred a three year cumulative year loss of \$5,880,000 from continuing operations for the three year period ended December 31, 2009, and in accordance with ASC 740 (formerly SFAS 109), a three year cumulative loss represents significant negative evidence to consider the basis to determine whether a deferred tax asset is realizable. This fact generally precludes relying on projections of future taxable income to support the recovery of deferred tax assets. Consequently, the Company decided to apply the full valuation allowance against deferred taxes due to uncertainty regarding the realization of the deferred taxes in the near future.

For the year ended December 31, 2009 the Company recorded an income tax benefit of approximately \$18,000 by claiming certain refundable research and development tax credits. For the year ended December 31, 2008, the Company did not record a provision for income tax.

Results of Operations

Year Ended December 31, 2008 vs. December 31, 2007

Revenues

Total revenues for the year ended December 31, 2008 were approximately \$14,871,000, as compared to revenues of \$12,992,000 for the comparable prior year, an increase of approximately \$1,879,000, or 14.5%.

North American sales for the year ended December 31, 2008 decreased to approximately \$7,423,000, a 5.4% decrease, as compared to sales of approximately \$7,848,000 for the year ended December 31, 2007. The decrease in North American sales was principally due to a decrease in sales of spare parts of approximately \$515,000, offset by an increase of sale of machines of approximately \$89,000. Sales outside of North America were approximately \$7,448,000 for the year ended December 31, 2008, compared to \$5,144,000 for the year ended December 31, 2007, an increase of \$2,304,000, or 44.8%. The increase in sales outside of North America was primarily due to an increase in sales of machines of approximately \$2,135,000, and an increase in the sale of spare parts of approximately \$170,000.

Cost of Goods Sold

Cost of goods sold for the year ended December 31, 2008 was approximately \$7,298,000, or 49.1% of revenue, compared to \$5,646,000, or 43.5% of revenue, for the comparable prior year. The increase in cost of goods sold, in absolute dollars, for the year ended December 31, 2008 reflects the overall increase in sales.

Our major product lines have different profit margins, as well as multiple profit margins within each product line. Our product margins on production machines are greater than that of our lab machines, which results in variations in our overall margins due to product mix. During the year ended December 31, 2008, our sales of production machines of \$4,478,000 decreased by \$616,000, or 12.1%, from \$5,094,000 for the period ending December 31, 2007, while our sales of lab machines increased by \$2,519,000, or 71.8%, to \$6,027,000 for the year ended December 31, 2008, compared to \$3,508,000 for the period ending December 31, 2007, resulting in decreased margins overall. Also contributing to lower product margins for the year ended December 31, 2008 compared to the same period in 2007 is the development of our new M110P product, which suffered lower margins early in the development stage but which have improved over the year resulting from an improved design and efficiencies in the manufacturing process.

Table of Contents

Research and Development Expenses

Research and development expenses for the year ended December 31, 2008 were approximately \$2,116,000, compared to \$1,863,000 for the comparable prior year, an increase of approximately \$253,000, or 13.6%. The increase in research and development expenses was primarily due to the hiring of additional personnel to support our expansion of our technology laboratory in our Newton facility resulting in salary and related cost increases of \$256,000. During the year ended December 31, 2008, increases in travel related costs of approximately \$23,000, and consultant fees of approximately \$42,000, were partially offset by a decrease in development costs and other related expenses of approximately \$68,000 compared to the comparable period of 2007.

Selling Expenses

Selling expenses for the year ended December 31, 2008 were approximately \$4,844,000, compared to \$3,584,000 for the comparable prior year, an increase of \$1,260,000, or 35.2%. The increase is primarily attributable to an increase in payroll and related expenses of approximately \$815,000 resulting from the addition of several sales and marketing personnel including senior sales executives. During the year ended December 31, 2008 we created three sales regions in the United States and expanded our senior sales organization globally with increased presence in Europe and Asia. As a result of the additions to the sales organization we incurred additional costs for travel and related expenses of \$191,000 during the year ended December 31, 2008 compared to the year ending December 31, 2007. We also realized an increase in consulting fees of \$41,000, and other net increases of approximately \$213,000 for occupancy and other operating expenses during the year ended December 31, 2008 compared to the year ended December 31, 2007.

General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2008 were approximately \$4,495,000, compared to \$3,081,000 for the comparable prior year, an increase of \$1,414,000, or 45.9%. The increase in general and administrative expenses is in part due to increases in salary and related charges of approximately \$595,000. During the year ended December 31, 2008 we realized a full year of increased expenses resulting from a change in senior management at the end of the prior year and other personnel additions during the year ended December 31, 2008, including severance charges, recruiting fees and other one time charges relating to personnel changes. We realized an increase in consultant and professional fees of approximately \$331,000 for the development of the corporate strategy and operating plans and an increase of approximately \$169,000 in bank fees and financing charges previously capitalized as part of the financing arrangements with Silicon Valley Bank during the year ended December 31, 2008 compared to the same period of 2007 as described in Note 7 of the Consolidated Financial Statements. For the year ended December 31, 2008, we incurred travel and related expenses in excess of the comparable prior year of approximately \$93,000. As a result of additional head count in senior leadership team, expenses related to the granting of stock options under ASC 718 (formerly FAS 123R) increased during the period ended December 31, 2008 by approximately \$78,000 as compared to the comparable period of 2007. We also incurred additional occupancy and operating expenses during the year ended December 31, 2008 compared to the comparable period of 2007 due to a renovation of our corporate headquarters in Newton, Massachusetts.

Interest Income and Expense

Interest expense for the year ended December 31, 2008 was approximately \$154,000 compared to \$20,000 for the comparable prior year, an increase of approximately \$134,000, or 670%. The increase is due to borrowings under our line of credit with Silicon Valley Bank and interest on our Convertible Debenture as further described in Note 7 of the Consolidated Financial Statements.

Table of Contents

Interest income for the year ended December 31, 2008 was approximately \$25,000 compared to \$64,000 for the comparable prior year, a decrease of \$39,000, or 61.0%. The decrease is due to the decrease in cash available for investing and lower interest rates.

Income Tax Provision

The Company has incurred a three year cumulative year loss of \$4,241,000 from continuing operations for the period ended December 31, 2008, and in accordance with ASC 740 (formerly SFAS 109), a three year cumulative loss represents significant negative evidence to consider the basis to determine whether a deferred tax asset is realizable. This fact generally precludes relying on projections of future taxable income to support the recovery of deferred tax assets. Consequently, the Company decided to apply the full valuation allowance against deferred taxes due to uncertainty regarding the realization of the deferred taxes in the near future.

For the year ended December 31, 2008 the Company did not record a provision for income tax. For the year ended December 31, 2007, the Company recognized a tax provision of approximately \$369,000, reflecting the application of the full valuation allowance provided against deferred assets generated the prior years. As of December 31, 2009 the Company had \$134,838 of prepaid German taxes which the Company fully expects to collect in 2010.

Liquidity and Capital Resources

Liquidity

We fund our working capital requirements primarily through the proceeds of our term loan, funds generated by operations and customer advances. We expect to fund our liquidity requirements, including interest on our convertible debt and capital expenditures, primarily through revenue and bookings for which we receive deposits in advance of shipment and, as needed, our new working capital line with Webster Bank. In May 2009 we agreed with Global Strategic Partners ("GSP") to defer interest payments in the amount of \$225,000 that were payable in 2009 over eight quarterly installments beginning April 1, 2010. We anticipate that with our expected revenues and customer deposits, together with our existing cash balance at December 31, 2009 and our working capital line, we will have sufficient capital to meet our working capital requirements for the next twelve months. However, if we do not achieve the revenues and customer advances as and when planned, and we are unable to access our recently secured working capital line, or renew this line in October 2010, we may face very substantial liquidity pressures that we may not be able to sustain if we are unable to access additional sources of liquidity.

We ended 2009 with cash and cash equivalents of \$2.2 million compared to \$1.9 million in cash and cash equivalents at December 31, 2008. The Company had no borrowings outstanding under its revolving line of credit as of December 31, 2009 and did not have a credit facility at December 31, 2008.

Our operating cash flow activities generated cash of \$370,000 for the year end December 31, 2009 compared to \$2.6 million use of cash for the year ended December 31, 2008. The increase in cash flow from operations was primarily due to changes in working capital year to year, particular due to an increase in customer advances.

Long Term Debt

On November 14, 2008 we entered into the Convertible Debenture and Warrant Purchase Agreement (the "Agreement") with Global Strategic Partners ("GSP"). The Convertible Debenture bears interest at nine percent (9.0%) per annum payable quarterly in arrears. The Convertible Debenture is due and payable on the earlier to occur of (i) November 14, 2015 or (ii) the acceleration

Table of Contents

of the maturity of the Convertible Debenture upon the occurrence of an Event of Default. GSP may, at its option, on any of the maturity date, the date that any interest payment is due, or the date on which a change of control occurs, convert all or any portion of the outstanding principal amount of the Convertible Debenture into shares of our common stock at a \$1.25 per share. In May 2009, GSP agreed to defer the interest payments due and payable under the Convertible Debenture on each of July 1, 2009, October 1, 2009 and January 4, 2010. The deferred payments will accrue interest at nine percent per annum and will be payable in eight equal quarterly installments on the first day of such quarter beginning on April 1, 2010. The Convertible Debenture is secured by all assets, property rights and interests of the Company, and is subordinate to our working capital line with Webster.

On November 14, 2008 we also issued the Warrant to GSP, giving it the right to purchase up to fifty percent (50%) of our outstanding common stock, on a fully diluted basis, less the number of shares of common stock into which the Convertible Debenture is convertible. The Warrant can be exercised by GSP in two (2) tranches at any time prior to the earlier to occur of: (i) the seventh anniversary of the date of the Agreement, (ii) the third anniversary of the date of the Agreement in the event that we retire the Convertible Debenture on or before such date ("Third Anniversary") or (iii) such time as GSP has acquired fifty percent (50%) of the total number of shares of our common stock then outstanding on a fully diluted basis. The first tranche is exercisable at \$2.00 per share up to forty percent (40%) of our common stock then outstanding on a fully diluted basis and the second tranche is exercisable at \$3.00 per share up to fifty percent (50%) of our common stock then outstanding on a fully diluted basis.

The Warrant's first tranche is exercisable in whole or in part at \$2.00 per share. The aggregate number of shares of Common Stock (the "Tranche One Maximum") that may be purchased pursuant to one or more tranche one exercises of the Warrant (the "Tranche One Exercises") is forty percent (40%) of the Common Stock outstanding on a fully diluted basis, minus that number of shares of Common Stock that GSP is or was entitled to acquire (or has theretofore acquired) upon exercise of the conversion feature of the Convertible Debenture. Notwithstanding the preceding sentence, if all or any portion of the principal amount of the Convertible Debenture has been prepaid by us prior to the Third Anniversary, then the Tranche One Maximum will also include a number of shares of common stock equal to the quotient of: (i) the amount of the Convertible Debenture's principal amount that was so repaid by the Third Anniversary, divided by (ii) \$1.25 (the "Prepayment Shares").

The Warrant's second tranche is exercisable in whole or in part at \$3.00 per share. The aggregate number of shares of Common Stock that may be purchased pursuant to one or more tranche two exercises of the Warrant (the "Tranche Two Exercises") is equal to (a) fifty percent (50%) of the common stock outstanding on a fully diluted basis, minus (b) that number of shares of common stock that GSP is or was entitled to acquire (or has theretofore acquired) upon (i) exercise of the conversion feature of the Convertible Debenture, and (ii) the Tranche One Exercise, plus (c) the Prepayment Shares. A Tranche Two Exercise may only be made after the full number of shares exercisable pursuant to Tranche One Exercises have been purchased.

In connection with the GSP financing, we repaid the entire amount due under the Amended and Restated Loan and Security Agreement, dated as of October 20, 2008, with Silicon Valley Bank and the Amended and Restated Export-Import Bank Loan and Security Agreement, dated as of October 20, 2008, with Silicon Valley Bank. The Payoff amount was approximately \$1,050,000.

Revolving Line of Credit

On October 23, 2009, the Company and its subsidiary entered into a senior secured \$1 million revolving line of credit pursuant to a loan agreement (the "Revolving Line of Credit") with Webster Bank, National Association, as lender ("Webster Bank"). The Revolving Line of Credit matures on October 22, 2010. We may extend the Revolving Line of Credit for one year without the consent of

Table of Contents

GSP. The actual amount of credit that is available from time to time under the Revolving Line of Credit is limited to a borrowing base amount that is determined according to, among other things, a percentage of the value of eligible accounts receivables. The Revolving Line of Credit contains customary representations and warranties and restrictive covenants relating to matters, such as indebtedness, liens, investments, acquisitions, mergers, dispositions and dividends. The Revolving Line of Credit also has two financial covenants that require the Company to maintain a senior debt to twelve month trailing EBITDA (Earnings Before Interest, Taxation, Depreciation and Amortization) of 2:1, with the initial twelve month trailing EBITDA for the second, third and fourth quarters of 2009 being annualized, and requires the Company to maintain \$500,000 of available cash or excess availability under the Revolving Line of Credit. The proceeds of any borrowings under the Revolving Line of Credit are available for working capital and other general corporate purposes.

The Company's borrowings under the Revolving Line of Credit will generally accrue interest at a margin of 5.50% over the London Interbank Offered Rate ("LIBOR") and are secured by a lien on substantially all of its personal property. The Revolving Line of Credit generally contains customary events of default for credit facilities of this type. Upon an event of default that is not cured or waived within any applicable cure periods, in addition to other remedies that may be available to Webster Bank, the obligations under the Revolving Line of Credit may be accelerated and remedies may be exercised against the collateral.

In connection with the closing of the Revolving Line of Credit, the Company also amended the Convertible Debenture and Agreement with GSP to permit the Revolving Line of Credit as senior indebtedness and provide for certain other covenants, including a cross default provision with the Revolving Line of Credit, and GSP agreed to subordinate the indebtedness under Convertible Debenture and Agreement to our indebtedness to Webster Bank. As of December 31, 2009, we had not drawn down on the Webster Revolving Line of Credit.

Prior to our entering into the Revolving Line of Credit, we had a Loan and Security Agreement (the "Domestic Loan Agreement") with Silicon Valley Bank ("SVB"), which we entered into on June 30, 2008. On July 2, 2008, we entered into an Export-Import Bank Loan and Security Agreement (the "Export-Import Loan Agreement") with SVB and together with the Domestic Loan Agreement, created the "SVB Loan Agreement". The SVB Loan Agreement provided us with a revolving line of credit (the "SVB Revolving Line of Credit"). As noted above, we repaid this facility in October 2008 in connection with the GSP Financing. From this date until we secured the Revolving Line of Credit with Webster Bank, we did not have a credit line or bank facility in place.

The SVB Revolving Line of Credit had a two-year term and allowed for a maximum outstanding balance of \$2,500,000. The principal amount outstanding under the SVB Loan Agreement accrued interest at a per annum rate equal to: (a) the greater of (i) five percent (5.00%) or (ii) SVB's most recently announced "prime rate," even if it was not SVB's lowest rate, plus (b) one percent (1.00%). SVB's prime rate as of July 7, 2008 was 5.00%. Interest was payable on the last business day of each month. We were also required to maintain two financial covenants, and additional affirmative covenants.

Also on June 30, 2008 and in connection with the SVB Loan Agreement, we repaid the entire amount due under our Loan and Security Agreement, dated March 3, 2004, with T.D. Banknorth, formerly known as Banknorth, N.A., as modified pursuant to a Loan Modification Agreement dated November 20, 2006. The Payoff Amount was comprised of \$1,000,000 in principal, and approximately \$12,000 in interest and legal fees.

Table of Contents*Contractual Obligations*

Our contractual obligations as of December 31, 2009 are as follows (in thousands):

| Contractual Obligation | Total | Payment due by period | | | |
|-------------------------|----------|-----------------------|-----------|-----------|----------------------|
| | | Less than 1 year | 1-3 years | 3-5 years | More than 5 years |
| Convertible debt(1) | \$ 7,858 | \$ 492 | \$ 1,125 | \$ 900 | \$ 5,341 |
| Operating leases | 860 | 462 | 398 | | |
| Purchase obligations(2) | 43 | 43 | | | |
| | \$ 8,761 | \$ 997 | \$ 1,523 | \$ 900 | \$ 5,341 |

- (1) Includes principal and interest payments, principal is due only at maturity unless called upon an event of default under the convertible Convertible Debenture agreement. (See discussion above on interest in Long Term Debt)
- (2) Purchase obligations consist of commitments for production materials and supplies.

Off-Balance Sheet Arrangements

We are not a party to any off-balance sheet arrangements.

Critical Accounting Policies

Our significant accounting policies are summarized in Note 1 to our consolidated financial statements. However, certain of our accounting policies require the application of significant judgment by our management, and such judgments are reflected in the amounts reported in our consolidated financial statements. In applying these policies, our management uses their judgment to determine the appropriate assumptions to be used in the determination of estimates. Those estimates are based on our historical experience, terms of existing contracts, our observance of market trends, information provided by our strategic partners and information available from other outside sources, as appropriate. Actual results may differ significantly from the estimates contained in our consolidated financial statements. Our critical accounting policies are as follows:

Revenue Recognition. Revenue is recognized when all of the following criteria are met: i) persuasive evidence of an arrangement exists, ii) delivery has occurred, iii) the price to the customer is fixed and determinable, and iv) collectability is reasonably assured. In revenue transactions where support services are requested, revenue is recognized on shipment since the support service obligation is not essential to the functionality of the delivered products. Revenue transactions involving non-essential support services obligations are those which can generally be completed in a short period of time at insignificant cost and the skills required to complete these support services are not unique to us and in many cases can be provided by third parties or the customers. The customer's purchase obligations are not contingent upon performance of support services, if any, by us. Proceeds received in advance of product shipment are recorded as customer advances in the consolidated balance sheets. Returns and customer credits are infrequent and recorded as a reduction to sales. Rights of returns are not included in sales arrangements. Discounts from list prices are recorded as a reduction to sales. On occasion, we provide machines for rent by customers. Income for the rental of equipment is recognized on a straight-line basis over the rental term. Rental income and product sales are classified in revenues in the consolidated statement of operations.

Accounts Receivable Valuation. We perform various analyses to evaluate accounts receivable balances and record an allowance for bad debts based on the estimated collectability of the

Table of Contents

accounts such that the amounts reflect estimated net realizable value. If actual uncollectible amounts significantly exceed the estimated allowance, our operating results would be significantly and adversely affected.

Inventory Valuation. We value our inventory at the lower of our actual cost or the current market value. We regularly review inventory quantities on hand and inventory commitments with suppliers and record a provision for excess and obsolete inventory based primarily on our historical usage for the prior twenty-four month period. Although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated change in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

Product Warranties. Our products are generally sold with a twelve month warranty provision that requires us to remedy deficiencies in quality or performance of our products at no cost to our customers only after it has been determined that the cause of the deficiency is not due to the actions of the machine operator or product used in the machine. We have established a policy for replacing parts that wear out or break prematurely. The policy called for replacing the parts or repairing a machine within one year of the sale.

Accounting for income taxes. We determine our annual income tax provision in each of the jurisdictions in which we operate. This involves determining our current and deferred income tax expense as well as accounting for differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax consequences attributable to these differences result in deferred tax assets and liabilities, which are included in our consolidated balance sheets. We assess the recoverability of the deferred tax assets by considering whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. To the extent we believe that recovery does not meet this "more likely than not" standard as required in FASB ASC 740, "Income Taxes" (formerly SFAS No. 109, *Accounting for Income Taxes*), we must establish a valuation allowance.

Management's judgment and estimates are required in determining our income tax provision, deferred tax assets and liabilities and any valuation allowance recorded against deferred tax assets. Significant management judgment is required in determining any valuation allowance recorded against deferred tax assets and liabilities. Considering the results of our operations, our cumulative loss position and uncertainty surrounding our forecasts, we concluded that a full valuation allowance was needed to offset the United States deferred tax assets. We review the recoverability of deferred tax assets during each reporting period by reviewing estimates of future taxable income, future reversals of existing taxable temporary differences, and tax planning strategies that would, if necessary, be implemented to realize the benefit of a deferred tax asset before expiration. Should our judgment change about the previously mentioned items, we may reverse some or all of the valuation allowances. Such reversal would be recorded as an income tax benefit in the consolidated statement of operations in the period that utilization of deferred tax assets is determined to be more likely than not.

We assess tax positions taken on tax returns, including recognition of potential interest and penalties, in accordance with the recognition thresholds and measurement attributes outlined in FASB ASC 740, (formerly FASB Interpretation (FIN) No. 48, *Accounting for Uncertainty in Income Taxes - an interpretation of FAS 109*). Interest and penalties recognized, if any, would be classified as a component of income tax expense.

Stock-based compensation. We account for share-based payment awards in accordance with the provisions of FASB ASC 718, "Compensation - Stock Compensation" (formerly SFAS No. 123), which requires us to recognize compensation expense for all share-based payment awards made to employees and directors including employee stock options and employee stock purchases related to the Employee Stock Purchase Plan ("employee stock purchases").

Table of Contents

FASB ASC 718 requires companies to estimate the fair value of stock-based payment awards on the date of grant using an option-pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods in our statement of operations. Stock-based compensation expense has been reduced for estimated forfeitures. FASB ASC 718 requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

We value stock-based payment awards at grant date using the Black-Scholes option-pricing model ("Black-Scholes model"). Our determination of fair value of stock-based payment awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to our expected stock price volatility over the term of the awards and actual and projected employee stock option exercise behaviors.

Stock-based compensation expense recognized under FASB ASC 718 for the years ended December 31, 2009, 2008 and 2007 was \$200,000, 233,000 and \$218,000 respectively, which consisted of stock-based compensation expense related to employee stock options.

We record stock compensation expense on a straight-line basis over the requisite service period for all awards granted.

Recent Accounting Pronouncements

In October 2009, the FASB issued ASU No. 2009-13 "*Revenue Recognition (Topic 605): Multiple-Deliverable Revenue Arrangements*" (formerly EITF Issue No. 08-1). This ASU establishes the accounting and reporting guidance for arrangements including multiple revenue-generating activities. This ASU provides amendments to the criteria for separating deliverables, and measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this ASU also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this ASU are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early application is permitted. We have not determined the effect, if any, that the adoption of this guidance will have on our consolidated results of operations or financial position.

In June 2009, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 168, The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles a replacement of FASB Statement No. 162. SFAS No. 168 was codified as Accounting Standards Codification ("ASC") Topic 105-10 and replaces SFAS No. 162, The Hierarchy of Generally Accepted Accounting Principles, to establish the FASB ASC as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in preparation of financial statements in conformity with generally accepted accounting principles in the United States. We adopted ASC Topic 105-10 effective for the quarter ended September 30, 2009 and the adoption did not result in a significant impact on our financial statements.

In May 2009, the FASB issued ASC 855-10 (formerly SFAS No. 165), "Subsequent Events." ASC 855-10 identifies the following: the period after the balance sheet date during which management shall evaluate events or transactions that may occur for potential recognition or disclosure in the financial statements; the circumstances under which an entity shall recognize events or transactions occurring

Table of Contents

after the balance sheet date in its financial statements; and the disclosures that an entity shall make about events or transactions that occurred after the balance sheet date. This statement was effective for the Company's second quarter of 2009. There was no effect from adoption of this standard.

In December 2007, the FASB issued ASC 810-10 (formerly SFAS No. 160), "Noncontrolling Interests in Consolidated Financial Statements". ASC 810-10 clarifies that a non-controlling or minority interest in a subsidiary is considered an ownership interest and accordingly, requires all entities to report such interests in subsidiaries as equity in the consolidated financial statements. ASC 810-10 is effective for fiscal years beginning after December 15, 2008. On January 1, 2009, we adopted ASC 810-10, which did not have a material effect on our results or financial position.

Impact of Inflation

We believe that our revenues and results of operations have not been significantly impacted by inflation during the past three years.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our financial instruments are generally not subject to changes in market value as a result of changes in interest rates due to the short maturities of the instruments. Our fixed rate debt is not exposed to cash flow or interest rate changes but is exposed to fair market value changes in the event of refinancing this fixed rate debt. Our revolving credit facility accrues interest at a margin of 5.50% over LIBOR. We did not have an outstanding balance as of December 31, 2009.

Although we have a significant percentage of sales from foreign countries, our sales are predominately denominated in U.S. dollars. Thus, we have not experienced any material exposure to fluctuations in foreign exchange rates on our revenues.

For additional information about our financial instruments, see Note 7 to the Consolidated Financial Statements.

Table of Contents

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Microfluidics International Corporation:

We have audited the accompanying consolidated balance sheets of Microfluidics International Corporation, and subsidiary (formerly MFIC Corporation) as of December 31, 2009 and 2008 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years ended December 31, 2009. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstance, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Microfluidics International Corporation and subsidiaries (formerly MFIC Corporation) at December 31, 2009 and 2008 and the consolidated results of their operations and their cash flows for the three years ended December 31, 2009 in conformity with accounting principles generally accepted in the United States of America.

/s/ UHY LLP

Boston, Massachusetts
March 29, 2010

Table of Contents**MICROFLUIDICS INTERNATIONAL CORPORATION****Consolidated Balance Sheets***(in thousands, except share and per share amounts)*

| | December 31, | |
|--|-----------------|-----------------|
| | 2009 | 2008 |
| ASSETS | | |
| Current assets: | | |
| Cash and cash equivalents | \$ 2,185 | \$ 1,895 |
| Accounts receivable, net of allowance of \$44 as of December 31, 2009 and 2008 | 2,571 | 2,181 |
| Inventories | 2,916 | 2,723 |
| Prepaid and other current assets | 280 | 320 |
| Total current assets | 7,952 | 7,119 |
| Property and equipment, net | 891 | 1,121 |
| Other non-current assets | 535 | 480 |
| Total assets | \$ 9,378 | \$ 8,720 |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable | \$ 545 | \$ 986 |
| Accrued expenses | 1,727 | 1,233 |
| Customer advances | 1,137 | 436 |
| Total current liabilities | 3,409 | 2,655 |
| Long-term liabilities: | | |
| Convertible debt | 4,679 | 4,625 |
| Total liabilities | 8,088 | 7,280 |
| Stockholders' equity: | | |
| Common stock; \$.01 par value; 30,000,000 and 20,000,000 shares authorized; 10,630,228 and 10,592,228 shares issued; 10,394,782 and 10,356,782 shares outstanding as of December 31, 2009 and 2008, respectively | 106 | 106 |
| Additional paid-in capital | 18,254 | 18,042 |
| Accumulated deficit | (16,401) | (16,039) |
| Treasury stock, 235,446 shares, at cost, as of both December 31, 2009 and 2008 | (669) | (669) |
| Total stockholders' equity | 1,290 | 1,440 |
| Total liabilities and stockholders' equity | \$ 9,378 | \$ 8,720 |

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

Table of Contents**MICROFLUIDICS INTERNATIONAL CORPORATION****Consolidated Statements of Operations***(in thousands, except share and per share amounts)*

| | Years Ended December 31, | | |
|---|--------------------------|------------|------------|
| | 2009 | 2008 | 2007 |
| Revenues | \$ 15,739 | \$ 14,871 | \$ 12,992 |
| Cost of sales | 6,299 | 7,298 | 5,646 |
| Gross profit | 9,440 | 7,573 | 7,346 |
| Operating expenses: | | | |
| Research and development | 1,712 | 2,116 | 1,863 |
| Selling | 4,315 | 4,844 | 3,584 |
| General and administrative | 3,290 | 4,495 | 3,081 |
| Total operating expenses | 9,317 | 11,455 | 8,528 |
| Income (loss) from operations | 123 | (3,882) | (1,182) |
| Interest expense | (505) | (154) | (20) |
| Interest income | 2 | 25 | 64 |
| Loss before income tax (benefit) provision | (380) | (4,011) | (1,138) |
| Income tax (benefit) provision | (18) | | 369 |
| Net loss | \$ (362) | \$ (4,011) | \$ (1,507) |
| Net loss per common share: | | | |
| Basic | \$ (0.03) | \$ (0.39) | \$ (0.15) |
| Diluted | \$ (0.03) | \$ (0.39) | \$ (0.15) |
| Weighted average number of common and common equivalent shares outstanding: | | | |
| Basic | 10,380,157 | 10,296,296 | 10,183,376 |
| Diluted | 10,380,157 | 10,296,296 | 10,183,376 |

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

Table of Contents**MICROFLUIDICS INTERNATIONAL CORPORATION****Consolidated Statements of Cash Flows***(in thousands)*

| | Years Ended December 31, | | |
|---|--------------------------|------------|------------|
| | 2009 | 2008 | 2007 |
| Cash flows from operating activities: | | | |
| Net loss | \$ (362) | \$ (4,011) | \$ (1,507) |
| Adjustments to reconcile net loss to net cash flows: | | | |
| Income tax provision | (18) | | 369 |
| Depreciation | 159 | 174 | 154 |
| Amortization of leasehold improvements | 163 | 60 | |
| Amortization of intangibles | 6 | 6 | 6 |
| Amortization of deferred financing fees | 54 | | 10 |
| Non-cash interest | 54 | 7 | |
| Allowance for doubtful accounts | | 3 | 3 |
| Provision for obsolete inventory | | (12) | 8 |
| Share-based compensation | 200 | 233 | 218 |
| Changes in assets and liabilities: | | | |
| Accounts receivable | (390) | 398 | 668 |
| Inventories | (193) | (358) | (335) |
| Prepaid expenses | 40 | (41) | 56 |
| Accounts payable | (441) | 857 | (118) |
| Accrued expenses | 512 | 507 | (128) |
| Other non-current assets | (115) | (428) | |
| Customer advances | 701 | 27 | (444) |
| Net cash flows provided by (used in) operating activities | 370 | (2,578) | (1,040) |
| Cash flows from investing activities: | | | |
| Purchase of property, plant and equipment | (92) | (1,030) | (176) |
| Net cash flows used in investing activities | (92) | (1,030) | (176) |
| Cash flows from financing activities: | | | |
| Borrowings on bank loan | | 1,999 | 262 |
| Principal repayments on long-term debt and obligations under capital leases | | (65) | (259) |
| Payments on bank loan | | (2,261) | |
| Proceeds from issuance of convertible debt | | 5,000 | |
| Proceeds from issuance of treasury stock | | 19 | |
| Net proceeds from issuance of common stock | 12 | 55 | 109 |
| Net cash flows provided by financing activities | 12 | 4,747 | 112 |
| Net change in cash and cash equivalents | 290 | (1,139) | (1,104) |
| Cash and cash equivalents at beginning of period | 1,895 | 756 | 1,860 |
| Cash and cash equivalents at end of period | \$ 2,185 | \$ 1,895 | \$ 756 |
| Supplemental Disclosure of Cash Flow Information: | | | |
| Interest received | \$ 2 | \$ 25 | \$ 63 |
| Interest paid | 113 | 95 | 20 |

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| | | |
|---------------------------|------|-----|
| Taxes paid, net of refund | (26) | 89 |
| Non-cash item: | | |
| Issuance of warrants | | 382 |

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

Table of Contents**MICROFLUIDICS INTERNATIONAL CORPORATION****Consolidated Statements of Changes in Stockholders' Equity***(in thousands)*

| | Common Stock | | Additional Paid-in Capital | Accumulated Deficit | Treasury Stock | | Total Stockholders' Equity |
|---|------------------------|--------|----------------------------------|------------------------|------------------------|----------|----------------------------------|
| | Number of Shares | Amount | | | Number of Shares | Amount | |
| Balance at December 31, 2006 | 10,350 | 104 | 17,052 | (10,521) | 260 | (688) | 5,947 |
| Issuance of common stock in connection with exercise of stock options | 103 | 1 | 74 | | | | 75 |
| Issuance of common stock under employee stock purchase plan | 28 | | 34 | | | | 34 |
| Compensation expense related to stock options | | | 154 | | | | 154 |
| Non-cash share based compensation expense former officer | 36 | | 61 | | | | 61 |
| Compensation expense related to employee purchase plan | | | 3 | | | | 3 |
| Net loss | | | | (1,507) | | | (1,507) |
| Balance at December 31, 2007 | 10,517 | 105 | 17,378 | (12,028) | 260 | (688) | 4,767 |
| Issuance of common stock in connection with exercise of stock options | 55 | 1 | 27 | | | | 28 |
| Issuance of common stock under employee stock purchase plan | 20 | | 22 | | | | 22 |
| Issuance of treasury stock | | | | | (25) | 19 | 19 |
| Compensation expense related to stock options | | | 233 | | | | 233 |
| Warrants issued with debt | | | 382 | | | | 382 |
| Net loss | | | | (4,011) | | | (4,011) |
| Balance at December 31, 2008 | 10,592 | 106 | 18,042 | (16,039) | 235 | (669) | 1,440 |
| Issuance of common stock in connection with exercise of stock options | 11 | | 4 | | | | 4 |
| Issuance of common stock under employee stock purchase plan | 27 | | 8 | | | | 8 |
| Compensation expense related to stock options | | | 200 | | | | 200 |
| Net loss | | | | (362) | | | (362) |
| Balance at December 31, 2009 | 10,630 | \$ 106 | \$ 18,254 | \$ (16,401) | 235 | \$ (669) | \$ 1,290 |

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

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements

1. Organization and Summary of Significant Accounting Policies

Organization

Microfluidics International Corporation (the "Company"), along with its wholly-owned subsidiary, Microfluidics Corporation ("Microfluidics"), its operating division, operates in one segment, specializing in producing and marketing a broad line of proprietary high-shear fluid materials processing systems used primarily in the pharmaceutical, biotechnology, chemical, cosmetic and nutraceutical/food industries. Our corporate headquarters and manufacturing operations are located in Newton Massachusetts.

For the year ended December 31, 2009, the Company incurred net losses of approximately \$362,000 and generated positive cash flow from operations of approximately \$370,000. The Company has historically funded its operations with cash flows from operations and the issuance of various debt and equity instruments. The Company has approximately \$2.2 million of cash and cash equivalents and \$4.7 million of long-term debt as of December 31, 2009. As a result of the financial performance of the Company in the fourth quarter of 2008 and the global economic crisis, in the first quarter of 2009 the Company made significant cost reductions. These consist primarily of reductions in headcount as well as a reduction of discretionary expenses such as travel, consulting and marketing programs. The Company is prepared to make further cost reductions if needed. We expect to continue to fund our operations from existing cash resources, operating cash flow and our revolving credit facility. That notwithstanding, we believe that our current financial resources are adequate to fund our ongoing operations and pursue our strategic initiatives for the next twelve months. Management anticipates the Company will remain cash flow positive and improve its liquidity through continued growth and the increase in cash as a result of the cost reduction measures that have already been implemented. To the extent our revenue growth does not meet our anticipated target, we will continue to adjust our cost structure as deemed appropriate. However no assurance can be given that management's actions will result in profitable operations or positive cash flow.

Principles of Consolidation

The consolidated financial statements of the Company include the accounts of the Company and its wholly owned subsidiary. All significant intercompany transactions and balances have been eliminated in consolidation.

Use of Estimates

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

Revenue Recognition

Revenue is recognized when all of the following criteria are met: i) persuasive evidence of an arrangement exists, ii) delivery has occurred, iii) the price to the customer is fixed and determinable, and iv) collectability is reasonably assured. In revenue transactions where support services are

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

1. Organization and Summary of Significant Accounting Policies (Continued)

requested, revenue is recognized on shipment since this supportive service obligation is not essential to the functionality of the delivered products. Revenue transactions involving non-essential support services obligations are those which can generally be completed in a short period of time at insignificant cost and the skills required to complete these installations are not unique to the Company and in many cases can be provided by third parties or the customers. The customer's purchase obligations are not contingent upon performance of support services, if any, by the Company. Proceeds received in advance of product shipment are recorded as customer advances in the consolidated balance sheets. Returns and customer credits are infrequent and recorded as a reduction to sales. Rights of returns are not included in sales arrangements. Discounts from list prices are recorded as a reduction to sales. On occasion, the Company provides machines for rent by customers. Income for the rental of equipment is recognized on a straight-line basis over the rental term. Rental income and product sales are classified in revenues in the consolidated statement of operations.

Cash and Cash Equivalents

The Company considers the following highly liquid securities to be cash equivalents: (i) securities with initial maturity of 90 days or less, at the time of acquisition and (ii) securities with initial maturities greater than 90 days whose terms include a demand feature allowing the Company to liquidate the investment prior to maturity.

Allowance for Doubtful Accounts

The Company maintains an allowance for estimated losses resulting from the inability of its customers to make required payments. An estimate of uncollectible amounts is made by management based upon historical bad debts, current customer receivable balances, age of customer receivable balances, customer's financial condition and current economic trends. If the actual uncollected amounts significantly exceed the estimated allowance, the Company's operating results would be significantly adversely affected.

Inventories

Inventories consist of material, labor and manufacturing overhead and are stated at the lower of cost or market. Cost is determined on a first-in, first-out basis (FIFO).

The Company periodically reviews quantities of inventory on hand and compares these amounts to expected usage of each particular product line. Reserves are established to record provisions for slow moving inventories in the period in which it becomes reasonably evident that the item is not useable, salable or the market value is less than cost.

Property and Equipment

The Company's property and equipment is recorded at cost. Depreciation is computed using the straight-line method, based upon estimated useful lives of 3 to 7 years. Leasehold improvements are amortized using the straight-line method based upon the shorter of the estimated useful lives or remaining life of the lease. Expenditures for maintenance and repairs are expensed as incurred. Upon retirement or sale of property and equipment, the cost of the disposed asset and the related

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

1. Organization and Summary of Significant Accounting Policies (Continued)

accumulated depreciation are removed from the accounts and any resulting gain, or loss is credited or charged to operations.

Long-Lived Assets

The Company reviews long-lived assets and all amortizing intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. Recoverability of these assets is determined by comparing the forecasted undiscounted net cash flows of the operation to which the assets relate, to the carrying amount. If the operation is determined to be unable to recover the carrying amount of its assets, then intangible assets are written down first, followed by the other long-lived assets of the operation, to fair value. Fair value is determined based on discounted cash flows or appraised values, depending upon the nature of the assets. There was no impairment recognized during the year ended December 31, 2009.

Other Non-Current Assets

Other long term assets include financing costs associated with the issuance of our Convertible Debenture (as defined below) and patents, patent applications, and patent rights which are stated at acquisition cost. Financing cost associated with the issuance of our Convertible Debenture are amortized using the straight-line method over the seven year life of the Convertible Debenture, See Note 7 to the Consolidated Financial Statements. Amortization of patents is recorded using the straight-line method over the shorter of the legal lives or useful life of the patents. Patents are being amortized over a period of three to seventeen years.

Financial Instruments

The proceeds received upon the issuance of a Convertible Debenture with detachable warrants are allocated into liability and equity components on a relative fair value basis at the time of issuance. Management reviews the terms of a compound instrument to determine whether there are embedded derivatives that may be required to be bifurcated and accounted for separately as a derivative financial instrument. In connection with the Company's issuance of a Convertible Debenture during the year ended December 31, 2008 (the "Convertible Debenture"), management determined that the conversion feature of the Convertible Debenture qualified as an embedded derivative to the host contract, and had to be considered for bifurcation. The Company concluded that the feature meets the exemption criteria in ASC 815-10 (formerly SFAS 133), *Accounting for Derivative Instruments and Hedging Activities (as amended)* and therefore the conversion feature was not be bifurcated. The accounting for the Convertible Debenture with detachable warrants is discussed in the footnote entitled *Convertible Debenture with Common Stock Warrants*.

Reserve for Warranty Expenses

Our products are generally sold with a twelve month warranty provision that requires us to remedy deficiencies in quality or performance of our products at no cost to our customers only after it has been determined that the cause of the deficiency is not due to the actions of the machine operator or product used in the machine. The Company has established a policy for replacing parts that wear out or break prematurely. The policy called for replacing the parts or repairing a machine within one year

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

1. Organization and Summary of Significant Accounting Policies (Continued)

of the sale. We believe the reserve balances in the amount of \$59,000 and \$71,000 as of December 31, 2009 and December 31, 2008, respectively, to be adequate.

Research and Development Expenses

The Company charges research and development expenses to operations as incurred.

Loss per Share

Basic and diluted net loss per common share was determined by dividing net income or loss applicable to common stockholders by the weighted average number of common shares outstanding during the period. Options to purchase 1,434,609, 1,284,682, and 1,585,427, shares of common stock were outstanding for the years ended December 31, 2009, 2008, and 2007, respectively. Basic and diluted net loss per share is \$.03, \$.39 and \$.15, for the years ended December 31, 2009, 2008 and 2007, respectively. For 2009, 41,743 shares of stock options and 4,000,000 of shares from convertible debt were excluded from the diluted earnings per share calculation because they would have been anti-dilutive.

Fair Value of Financial Instruments

The carrying amount of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair value due to the short term nature of these accounts. The Company had no bank debt at December 31, 2009 or 2008.

Income Taxes

Deferred tax assets or liabilities are computed based on the differences between the financial statement and income tax bases of assets and liabilities using the effective tax rates. Deferred income tax expense or credits are based on changes in the asset or liability from period to period. These differences are temporary and are expected to reverse in the following periods. The effect on deferred tax assets and liabilities of a change in tax rate is recognized in the results of operations in the period that includes the enactment date under the law. The Company records a valuation allowance to reduce the carrying amounts of deferred assets if it is "more likely than not" that such assets will be realized.

During the first quarter of 2007, the Company adopted ASC 605-15 (formerly FAS Interpretation No. 48), "Accounting for Uncertainty in Income Taxes", which supplements ASC 740-10 (formerly SFAS No. 109), by defining the confidence level that a tax position must meet in order to be recognized in the financial statements. ASC 605-15 requires that the tax effect(s) of a position be recognized only if it is "more likely than not" to be sustained based solely in its technical merits as of a reporting date.

The "more likely than not" threshold represents a positive assertion by management that the Company is entitled to the economic benefits of a tax position. If a tax position is not considered "more likely than not" to be sustained based solely on its technical merits, no benefits of tax position are to be recognized. The "more likely than not" threshold must continue to be met in each reporting period to support continued recognition of a benefit. With the adoption of ASC 605-15, the Company is required to adjust their financial statements to reflect only those tax positions that are "more likely than not" to be sustained.

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****1. Organization and Summary of Significant Accounting Policies (Continued)**

The Company has incurred a three year cumulative year loss for the period ended December 31, 2009, and in accordance with ASC 740-10, a three year cumulative loss represents significant negative evidence to consider the basis to determine whether a deferred tax asset is realizable. This fact generally precludes relying on projections of future taxable income to support the recovery of deferred tax assets. Consequently, the Company decided to apply the full valuation allowance against deferred taxes due to uncertainty regarding the realization of the deferred taxes in the near future.

For the year ended December 31, 2009, the Company recorded a tax benefit of \$18,000 by claiming certain refundable research and development credits. For the year ended December 31, 2008, the Company recorded no tax provision or benefit. For the year ended December 31, 2007, we recognized a tax provision of approximately \$369,000, reflecting the application of the full valuation allowance provided against deferred assets generated in prior years.

Stock-Based Compensation

Effective January 1, 2006, the Company adopted the fair value recognition provisions of ASC 718 (formerly SFAS No. 123R). For the years ended December 31, 2009, and 2008, the Company recognized stock-based employee compensation expense of approximately \$200,000 and \$233,000 respectively, which is included in General and Administrative expense of the Consolidated Statement of Operations. For the year ended 2007, the total expense balance includes \$61,000 of compensation expense attributed to the exercise of stock options by the Company's former Chairman and Chief Executive Officer (see Note 11). The Company did not capitalize any stock-based compensation.

The Company has a full valuation allowance for net deferred tax assets; accordingly, no significant tax benefit on the stock-based compensation was recorded during the year ended December 31, 2009.

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

| | Years Ended December 31, | | |
|-------------------------------|---------------------------------|-------------|-------------|
| | 2009 | 2008 | 2007 |
| Dividend yield | None | None | None |
| Expected volatility | 117% | 230% | 104% |
| Risk-free interest rate | 2.00% | 1.55% | 3.62% |
| Expected life | 5 years | 5 years | 5 years |
| Fair value of options granted | \$0.57 | \$0.84 | \$1.16 |

Dividend yield The Company has never declared or paid any cash dividends on any of its capital stock and does not expect to do so in the foreseeable future. Accordingly, the Company uses an expected dividend yield of zero to calculate the grant-date fair value of a stock option.

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

1. Organization and Summary of Significant Accounting Policies (Continued)

Expected volatility The expected volatility is a measure of the amount by which the Company's stock price is expected to fluctuate during the expected term of options granted. The Company determines the expected volatility solely based upon the historical volatility of the Company's Common Stock over a period commensurate with the option's expected term. The Company does not believe that the future volatility of its Common Stock over an option's expected term is likely to differ significantly from the past.

Risk-free interest rate The risk-free interest rate is the implied yield available on U.S. Treasury zero-coupon issues with a remaining term equal to the option's expected term on the grant date.

Expected life The expected life of options granted represents the period of time for which the options are expected to be outstanding and is derived from the Company's historical stock option exercise experience and option expiration data.

Other reasonable assumptions about these factors could provide different estimates of fair value. Future changes in stock price volatility, life of options, interest rates, forfeitures and dividend practices, if any, may require changes in our assumptions, which could materially affect the calculation of fair value.

We estimate forfeitures related to options grants at an annual rate of 9% to 16% per year.

Total unrecognized stock-based compensation expense related to unvested stock options, expected to be recognized over a weighted average period of 5 years, amounted to approximately \$618,000 and \$680,800 at December 31, 2009 and 2008, respectively.

Recent Accounting Pronouncements

In October 2009, the FASB issued ASU No. 2009-13 "*Revenue Recognition (Topic 605): Multiple-Deliverable Revenue Arrangements*" (formerly EITF Issue No. 08-1). This ASU establishes the accounting and reporting guidance for arrangements including multiple revenue-generating activities. This ASU provides amendments to the criteria for separating deliverables, and measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this ASU also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this ASU are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early application is permitted. We have not determined the effect, if any, that the adoption of this guidance will have on our consolidated results of operations or financial position.

In June 2009, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 168, The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles a replacement of FASB Statement No. 162. SFAS No. 168 was codified as Accounting Standards Codification ("ASC") Topic 105-10 and replaces SFAS No. 162, The Hierarchy of Generally Accepted Accounting Principles, to establish the FASB ASC

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****1. Organization and Summary of Significant Accounting Policies (Continued)**

as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in preparation of financial statements in conformity with generally accepted accounting principles in the United States. We adopted ASC Topic 105-10 effective for the quarter ended September 30, 2009 and the adoption did not result in a significant impact on our financial statements.

In May 2009, the FASB issued ASC 855-10 (formerly SFAS No. 165), "Subsequent Events." ASC 855-10 identifies the following: the period after the balance sheet date during which management shall evaluate events or transactions that may occur for potential recognition or disclosure in the financial statements; the circumstances under which an entity shall recognize events or transactions occurring after the balance sheet date in its financial statements; and the disclosures that an entity shall make about events or transactions that occurred after the balance sheet date. This statement was effective for the Company's second quarter of 2009. There were no subsequent events effecting our financial statements for the year ended December 31, 2009.

In December 2007, the FASB issued ASC 810-10 (formerly SFAS No. 160), "Noncontrolling Interests in Consolidated Financial Statements". ASC 810-10 clarifies that a non-controlling or minority interest in a subsidiary is considered an ownership interest and accordingly, requires all entities to report such interests in subsidiaries as equity in the consolidated financial statements. ASC 810-10 is effective for fiscal years beginning after December 15, 2008. On January 1, 2009, we adopted ASC 810-10, which did not have a material effect on our results or financial position.

2. Industry Segment, Geographic and Enterprise-Wide Reporting

ASC 280-10 (formerly SFAS No. 131), "*Disclosures about Segments of an Enterprise and Related Information*," requires companies to report selected information about operating segments, as well as enterprise-wide disclosures about products, services, geographic areas and major customers. Operating segments are determined based on the way management organizes its business for making operating decisions and assessing performance. The Company's chief decision-maker, as defined under ASC 280-10 is the chief executive officer. The Company has determined that it conducts its operations in one business segment: the development, manufacture, marketing and sale of process and formulation equipment. The Company's sales are primarily to companies with processing needs in the pharmaceutical, biotechnology, chemical, nutraceutical/food, and cosmetic industries. The Company has less than 1% of total assets in foreign countries. As a result, the financial information disclosed herein represents all of the material financial information related to the Company's principal operating segment.

Approximate sales to customers by geographic markets, are as follows:

| <i>(in thousands)</i> | Years Ended December 31, | | |
|-----------------------|--------------------------|-----------|-----------|
| | 2009 | 2008 | 2007 |
| North America | \$ 9,856 | \$ 7,423 | \$ 7,848 |
| Asia | 1,988 | 2,478 | 2,800 |
| Europe | 3,895 | 4,970 | 2,344 |
| | \$ 15,739 | \$ 14,871 | \$ 12,992 |

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****2. Industry Segment, Geographic and Enterprise-Wide Reporting (Continued)**

The users of the Company's systems are in various industries, including the pharmaceuticals, biotechnology, chemical, nutraceutical/food, and cosmetic industries.

In 2009, sales to one of the Company's customers and its world-wide subsidiaries were approximately \$2,403,000, which accounted for approximately 15.3% of the Company's net revenues. In 2008, sales to one of the Company's customers and its world-wide subsidiaries were approximately \$3,005,000, which accounted for approximately 20.2% of the Company's net revenues. In 2007, sales to the Company's top two customers were approximately \$1,129,000 and \$925,000, which accounted for 8.7% and 7.2% of the Company's net revenues. With regard to sale to the Company's distributors, no individual end-user represents 10% or more of the Company's net revenues in fiscal years ended December 31 2009, 2008 and 2007. A reduction or delay in orders from any of the Company's significant customers could have a material adverse effect on the Company's results of operations.

The Company sells its products in various countries. The Company's sales in North America, including the United States, Canada and Mexico, accounted for approximately 62.6% of our revenues in 2009; 49.9% of our revenues in 2008; and 60.4% of our revenues in 2007 with almost all of those sales coming from the United States and Canada. Sales to the rest of the world accounted for approximately 37.4% of our revenues in 2009; 50.1% of our revenues in 2008; and 39.6% of our revenues in 2007.

3. Inventories

Inventories consist of the following:

| <i>(in thousands)</i> | December 31, | |
|--------------------------------------|--------------|----------|
| | 2009 | 2008 |
| Raw materials | \$ 2,037 | \$ 2,485 |
| Work-in progress | 174 | 63 |
| Finished goods | 901 | 371 |
| | 3,112 | 2,919 |
| Less: provision for excess inventory | (196) | (196) |
| Inventories, net | \$ 2,916 | \$ 2,723 |

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****4. Property and Equipment**

Property and equipment consist of the following:

| <i>(in thousands)</i> | December 31, | |
|---|--------------|----------|
| | 2009 | 2008 |
| Furniture, fixtures and office equipment | \$ 923 | \$ 893 |
| Machinery, equipment and tooling | 530 | 505 |
| Leasehold improvements | 906 | 869 |
| | 2,359 | 2,267 |
| Less: accumulated depreciation and amortization | (1,468) | (1,146) |
| Property and equipment, net | \$ 891 | \$ 1,121 |

Depreciation expense for property and equipment for the years ended December 31, 2009, 2008 and 2007 was approximately \$159,000, \$174,000, and \$154,000, respectively.

5. Other Non-Current Assets

Costs incurred in connection with the issuance of the Revolving Line of Credit on October 23, 2009, totaling \$115,000, are being amortized over the life of the loan agreement, which is one year. The amortization expense associated with the LOC was approximately \$10,000 for the year ended December 31, 2009. Costs incurred in connection with the issuance of the Convertible Debenture and issuance of common stock warrant on November 14, 2008, totaling \$428,000, are being amortized over the life of the Convertible Debenture, which is seven years. The amortization expense associated with the issuance of common stock warrant was approximately \$44,000 for the year ended December 31, 2009. Previously capitalized costs of \$37,000 associated with the Banknorth debt refinancing that occurred in March 2004 was expensed as a result of the termination of that agreement in June 2008 (See Note 7). The amortization expense associated with the Banknorth financing was approximately \$2,000 and \$10,000 for the years ended December 31, 2008 and 2007, respectively.

In the last quarter of 2001, the Company capitalized approximately \$65,000 of costs related to the Multiple-Stream Mixer High Pressure Reactor patent, with an additional \$29,000 of costs related to this patent capitalized in 2004. These costs are being amortized over a 17-year period, which we estimate to be the useful life for this asset. Amortization of these costs for the years ended December 31, 2009, 2008 and 2007 was approximately \$6,000 each year.

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****6. Accrued Expenses**

Accrued expenses consist of the following:

| <i>(in thousands)</i> | December 31, | |
|---------------------------------------|---------------------|-------------|
| | 2009 | 2008 |
| Accrued expenses | \$ 319 | \$ 490 |
| Accrued wages, bonus and vacation pay | 644 | 360 |
| Accrued commissions | 367 | 253 |
| Accrued interest | 338 | 59 |
| Accrued warranty | 59 | 71 |
| | \$ 1,727 | \$ 1,233 |

7. Short-term and Long-term Debt

Short-term and long-term debt consists of the following:

| | December 31, | |
|--|-----------------------|-------------|
| | 2009 | 2008 |
| | <i>(in thousands)</i> | |
| Convertible debt, (net of discount of \$320,536 and \$375,156 at December 31, 2009 and 2008, respectively) | \$ 4,679 | \$ 4,625 |
| Less: current portion | | |
| Long-term debt, net of current portion | \$ 4,679 | \$ 4,625 |

On November 14, 2008 we entered into the Convertible Debenture and Warrant Purchase Agreement (the "Agreement") with Global Strategic Partners ("GSP"). The total amount of the Convertible Debenture is \$5,000,000 and bears interest at nine percent (9.0%) per annum payable quarterly in arrears. The Convertible Debenture is due and payable on the earlier to occur of (i) November 14, 2015 or (ii) the acceleration of the maturity of the Convertible Debenture upon the occurrence of an Event of Default. GSP may, at its option, on any of the maturity date, the date that any interest payment is due, or the date on which a change of control occurs, convert all or any portion of the outstanding principal amount of the Convertible Debenture into shares of our common stock at a \$1.25 per share. In May 2009, after an initial quarterly interest payment of approximately \$113,000, GSP agreed to defer the interest payments due and payable under the Convertible Debenture on each of July 1, 2009, October 1, 2009 and January 4, 2010. The deferred payments will accrue interest at nine percent per annum and will be payable in eight equal quarterly installments on the first day of such quarter beginning on April 1, 2010. The Convertible Debenture is secured by all assets, property rights and interests of the Company, and is subordinate to our new working capital line with Webster. As of December 31, 2009, a total of approximately \$338,000 accrued interest expense is included as part of accrued expenses. The Convertible Debenture is presented net of the discount of approximately \$321,000 and \$375,000 as of December 31, 2009 and 2008, respectively. The discount represents the value of the warrants granted as part of the financing which was approximately \$382,000, at the date of grant, which is being accreted over the seven year life of the loan as interest expense.

In connection with the closing of the Revolving Line of Credit, the Company also amended the Convertible Debenture and Agreement with GSP to permit the Revolving Line of Credit as senior

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

7. Short-term and Long-term Debt (Continued)

indebtedness and to provide for certain other covenants, including a cross default provision with the Revolving Line of Credit, and GSP agreed to subordinate the indebtedness under Convertible Debenture and Agreement to our indebtedness to Webster Bank. As of December 31, 2009, we had not drawn down on the Webster Revolving Line of Credit.

In connection with the issuance of the Convertible Debenture, the Company repaid the entire amount due under the Amended and Restated Loan and Security Agreement, dated as of October 20, 2008 (the "SVB Domestic Loan Agreement"), with Silicon Valley Bank ("SVB") and the Amended and Restated Export-Import Bank Loan and Security Agreement, dated as of October 20, 2008 (together with the SVB Domestic Loan Agreement, the "SVB Loan Agreement"), with SVB. The SVB Loan Agreements amended and restated the Domestic Loan Agreement and the Export-Import Bank Loan and Security Agreement, which were entered into on June 30, 2008 and July 2, 2008, respectively. The SVB Loan Agreements provided the Company with a revolving line of credit. The payoff amount was approximately \$1,050,000.

On June 30, 2008, the Company used the SVB Loan Agreements to repay the entire amount due under its Loan and Security Agreement, dated March 3, 2004, with T.D. Banknorth, formerly known as Banknorth, N.A., as modified pursuant to a Loan Modification Agreement dated November 20, 2006. The payoff amount was comprised of \$1,000,000 in principal, and approximately \$12,000 in interest and legal fees.

On October 23, 2009, the Company and its subsidiary entered into a senior secured \$1 million revolving line of credit pursuant to a loan agreement (the "Revolving Line of Credit") with Webster Bank, National Association, as lender ("Webster Bank"). The Revolving Line of Credit matures on October 22, 2010. We may extend the Revolving Line of Credit for one year without the consent of GSP. The actual amount of credit that is available from time to time under the Revolving Line of Credit is limited to a borrowing base amount that is determined according to, among other things, a percentage of the value of eligible accounts receivables. The Revolving Line of Credit contains customary representations and warranties and restrictive covenants relating to matters, such as indebtedness, liens, investments, acquisitions, mergers, dispositions and dividends. The Revolving Line of Credit also has two financial covenants that require the Company to maintain a senior debt to twelve month trailing EBITDA (Earnings Before Interest, Taxation, Depreciation and Amortization) of 2:1, with the initial twelve month trailing EBITDA for the second, third and fourth quarters of 2009 being annualized, and requires the Company to maintain \$500,000 of available cash or excess availability under the Revolving Line of Credit. The proceeds of any borrowings under the Revolving Line of Credit are available for working capital and other general corporate purposes.

The Company's borrowings under the Revolving Line of Credit will generally accrue interest at a margin of 5.50% over the London Interbank Offered Rate ("LIBOR") (LIBOR at December 31, 2009 was 0.23531%) and are secured by a lien on substantially all of its personal property. The Revolving Line of Credit generally contains customary events of default for credit facilities of this type. Upon an event of default that is not cured or waived within any applicable cure periods, in addition to other remedies that may be available to Webster Bank, the obligations under the Revolving Line of Credit may be accelerated and remedies may be exercised against the collateral.

In connection with the closing of the Revolving Line of Credit, the Company also amended the Convertible Debenture and Agreement with GSP to permit the Revolving Line of Credit as senior

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****7. Short-term and Long-term Debt (Continued)**

indebtedness and provide for certain other covenants, including a cross default provision with the Revolving Line of Credit, and GSP agreed to subordinate the indebtedness under Convertible Debenture and Agreement to our indebtedness to Webster Bank. As of December 31, 2009, we had not drawn down on the Webster Revolving Line of Credit.

Through the period ending December 31, 2009 the Company had not borrowed any amounts under the Revolving Credit Facility.

8. Employee Benefit Plans

The Company offers a 401(k) profit-sharing plan (the 401K Plan) to its employees. All Company and related entity employees who are eighteen (18) years of age and have completed one hour of service are eligible to participate in the 401K Plan. Employees may contribute from 1% to 20% of their compensation. The Company's contribution is discretionary. Commencing in July of 2008, the Company matches employee contribution at a rate of 25 cents on each dollar of the first six percent of participants' contributions, to a maximum of three percent of eligible compensations. The Company's contributions to the 401(k) plan were approximately \$37,000 and \$21,000 for the years ended December 31, 2009 and December 31, 2008, respectively. The Company made no matching contributions during the year ended December 31, 2007. The Company also instituted a cafeteria plan in 1992, giving the employees certain pre-tax advantages on specific payroll deductions.

9. Income Taxes

The provision (benefit) for income taxes consists of the following:

| <i>(in thousands)</i> | 2009 | 2008 | 2007 |
|-----------------------|---------|------|--------|
| Current: | | | |
| Federal | \$ (18) | \$ | \$ |
| State | | | |
| Foreign | | | |
| | \$ (18) | \$ | \$ |
| Deferred: | | | |
| Federal | \$ | \$ | \$ 312 |
| State | | | 57 |
| Foreign | | | |
| | \$ | \$ | \$ 369 |

For the year ended December 31, 2009, the Company recorded a tax benefit of \$18,000, based on refundable research and development credits. For the year ended December 31, 2008, the Company recorded no tax provision or benefit. The deferred provision for the year ended December 31, 2007 is the result of an increase in the valuation allowance reserve that was recorded against the Company's deferred tax asset. As of December 31, 2009 the Company had \$134,838 of prepaid German taxes which the Company fully expects to collect in 2010.

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****9. Income Taxes (Continued)**

The total income tax provision (benefit) differs from the income tax at the statutory federal income tax rate due to the following:

| | Years Ended December 31, | | |
|--|--------------------------|--------|--------|
| | 2009 | 2008 | 2007 |
| Federal income tax at statutory rate | 34.0% | 34.0% | 34.0% |
| State income taxes, net of federal benefits | 2.2% | 5.8% | 5.3% |
| Foreign | -0.0% | -2.4% | -2.0% |
| Permanent adjustments | -22.2% | -2.4% | -5.4% |
| Net research and development and other tax credits | 27.0% | -0.4% | -5.0% |
| Valuation allowance | -36.5% | -34.8% | -58.7% |
| Other | 0.1% | 0.2% | -0.6% |
| Effective tax rate | 4.6% | 0.0% | -32.4% |

The following is a summary of the significant components of the Company's deferred tax assets and liabilities:

| <i>(in thousands)</i> | December 31, | |
|---|--------------|----------|
| | 2009 | 2008 |
| Deferred tax assets: | | |
| Net operating loss carry forwards | \$ 4,512 | \$ 4,388 |
| Research and development and other credits | 442 | 50 |
| Accruals and allowances not currently deductible for tax purposes | 281 | 211 |
| Depreciation and other | 184 | 111 |
| Valuation allowance | (5,419) | (4,760) |
| Total deferred tax assets | \$ | \$ |

As of December 31, 2009, the Company has available federal net operating loss carry forwards for income tax purposes of approximately \$12,757,000 and state net operating loss carry forwards of approximately \$2,784,000, which expire at various dates through 2029, and federal research and development credit carry forwards of approximately \$356,000 expiring in varying amounts during the period through 2024. Ownership changes, as defined in the Internal Revenue Code, may limit the amount of operating loss carry forwards that can be utilized annually to offset future taxable income. Subsequent ownership changes could further affect the limitation in future years.

The Company recognizes deferred tax assets and liabilities based on the differences between the financial statement carrying values and the tax basis on assets and liabilities. The Company regularly evaluates for recoverability its deferred tax assets and establishes a valuation allowance based on historical taxable income, projected future taxable income, the expected timing of the reversals of existing temporary differences and implementation of tax-planning strategies.

A valuation allowance is established if it is "more likely than not" that all or a portion of the deferred tax asset will not be realized. The Company has incurred a three year cumulative loss for the period ended December 31, 2009. In accordance with ACS 740-10 (formerly SFAS 109), a three year

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

9. Income Taxes (Continued)

cumulative loss represents significant negative evidence to consider the basis to determine whether a deferred tax asset is realizable, and this fact generally precludes relying on projections of future taxable income to support the recovery of deferred tax assets. As a result, the Company maintains a full valuation allowance for the amount of the deferred tax assets as of December 31, 2009 and 2008.

In 2009, the Company evaluated its tax position, for years which remain subject to examination by major tax jurisdictions, in accordance with the requirements of ASC 740 and as a result concluded no adjustment was necessary. The Company filed income tax returns in the U.S. federal jurisdiction, and various state and foreign jurisdictions. The Company's evaluation of uncertain tax positions was performed for the tax years ended December 2006 and forward, the tax years which remain subject to examination by major tax jurisdictions as of December 31, 2009.

10. Stockholders' Equity

On November 14, 2008, in connection with the Convertible Debenture and Warrant Purchase Agreement (the "Agreement") with Global Strategic Partners ("GSP"), we also issued the Warrant to GSP, giving it the right to purchase up to fifty percent (50%) of our outstanding common stock, on a fully diluted basis, less the number of shares of common stock into with the Convertible Debenture is convertible. The Warrant can be exercised by GSP in two (2) tranches at any time prior to the earlier to occur of: (i) the seventh anniversary of the date of the Agreement, (ii) the third anniversary of the date of the Agreement in the event that we retire the Convertible Debenture on or before such date ("Third Anniversary") or (iii) such time as GSP has acquired fifty percent (50%) of the total number of shares of our common stock then outstanding on a fully diluted basis.

The Warrant's first tranche is exercisable in whole or in part at \$2.00 per share. The aggregate number of shares of Common Stock (the "Tranche One Maximum") that may be purchased pursuant to one or more tranche one exercises of the Warrant (the "Tranche One Exercises") is forty percent (40%) of the Common Stock outstanding on a fully diluted basis, minus that number of shares of Common Stock that GSP is or was entitled to acquire (or has theretofore acquired) upon exercise of the conversion feature of the Convertible Debenture. Notwithstanding the preceding sentence, if all or any portion of the principal amount of the Convertible Debenture has been prepaid by us prior to the Third Anniversary, then the Tranche One Maximum will also include a number of shares of common stock equal to the quotient of: (i) the amount of the Convertible Debenture's principal amount that was so repaid by the Third Anniversary, divided by (ii) \$1.25 (the "Prepayment Shares").

The Warrant's second tranche is exercisable in whole or in part at \$3.00 per share. The aggregate number of shares of Common Stock that may be purchased pursuant to one or more tranche two exercises of the Warrant (the "Tranche Two Exercises") is equal to (a) fifty percent (50%) of the common stock outstanding on a fully diluted basis, minus (b) that number of shares of common stock that GSP is or was entitled to acquire (or has theretofore acquired) upon (i) exercise of the conversion feature of the Convertible Debenture, and (ii) the Tranche One Exercise, plus (c) the Prepayment Shares. A Tranche Two Exercise may only be made after the full number of shares exercisable pursuant to Tranche One Exercises have been purchased.

In accordance with ASC 470 (formerly APB 14), the Company allocated the proceeds of the Convertible Debenture to the Convertible Debenture and the detachable warrants based on the relative fair values of the two securities at the time of issuance. The fair value of each warrant is estimated on

Table of Contents**Microfluidics International Corporation****Notes to Consolidated Financial Statements (Continued)****10. Stockholders' Equity (Continued)**

the date of grant using the Black-Scholes option pricing model. The Company recorded the warrants as a debt discount and additional paid-in-capital for their relative fair value of \$382,339. The aggregate discount will be amortized to interest expense over the seven year term of the Debenture using the straight-line method. The carrying value of the Notes, net of corresponding unamortized of discount is as follows:

| <i>(in thousands)</i> | December 31, | |
|---------------------------|---------------------|-----------------|
| | 2009 | 2008 |
| Face amount of Notes | \$ 5,000 | \$ 5,000 |
| Less unamortized discount | 321 | 375 |
| Carrying value | \$ 4,679 | \$ 4,625 |

Cost incurred with the issuance of the Convertible Debenture is approximately \$428,000 and is being amortized over the seven year life of the Convertible Debenture.

On November 17, 2004, the Company entered into a general financial and advisory services agreement with Maxim Group LLC pursuant to which Maxim Group LLC was granted, on April, 1, 2005, a three-year warrant to purchase 100,000 shares of the Company's common stock at an exercise price of \$3.20 per share. These warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. Maxim Group LLC was an "accredited investor" pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on June 5, 2006, for purposes of registering the shares of common stock underlying the warrants. Maxim Group LLC has waived its rights to receive, based upon the date that the registration statement on Form SB-2 was declared effective, an additional warrant to purchase shares of the Company's common stock. The warrants could have been exercised in whole or in part at any time on or prior to April 1, 2008. No warrants were exercised at any time on or prior to April 1, 2008. In addition, the warrants provided for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20. The estimated value of these warrants, included in general and administrative expense, was amortized to expense pursuant to the terms of the agreement. These warrants have expired as of April 1, 2008.

Private Placement

On March 30, 2004, the Company completed a private placement of investment units (each unit consisting of one share of common stock and a 3-year warrant to purchase an additional ? share of common stock). A total of 1,426,616 units were sold, yielding gross proceeds of approximately \$3,567,000. The units were priced at \$2.50 each and the associated warrants to purchase 713,308 shares of common stock were exercisable at \$3.05. Additionally, the placement agent for the offering received five-year warrants to purchase 213,992 shares of common stock at an exercise price of \$3.20 per share. The investment units and warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. The purchasers of the units (the "Purchasers") and the placement agent were "accredited investors" pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on May 13, 2004, for purposes of registering the

Table of Contents

Microfluidics International Corporation

Notes to Consolidated Financial Statements (Continued)

10. Stockholders' Equity (Continued)

shares of common stock underlying the units and warrants. The warrants associated with the purchases of these units expired on March 30, 2007. The warrants issued to the placement agent may be exercised in whole or in part at any time on or prior to their termination date in March, 2009. In addition, the warrants issued to the placement agent provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20. The value of the warrants granted to the placement agent was approximately \$351,000, and was accounted for as a non-cash financing activity. The warrant to the placement agent expired in March 2009 without being exercised.

Employee Stock Purchase Plan

The Company has an employee stock purchase plan (the "Purchase Plan"). Under the Purchase Plan, participants are granted options to purchase the Company's common stock twice a year at the lower of 85% of market value at the beginning or end of each period. Calculation of the number of options granted, and subsequent purchase of these shares, is based upon voluntary payroll deductions during each six-month period. The number of options granted to each employee under this plan is limited to a maximum amount of 1,000 shares for each six-month period. The number of shares issued pursuant to this plan totaled 27,000, 20,409, and 27,864 in 2009, 2008 and 2007, respectively.

11. Supplemental Disclosures for Stock-Based Compensation

Stock Options

The Company has three (3) shareholder approved stock option plans as follows: (i) the 1988 Stock Plan, which authorized the grant of stock rights for up to 3,500,000 shares of common stock (the "1988 Plan"); (ii) the 1989 Non-Employee Director Stock Option Plan (the "1989 Plan"), which authorized the grant of nonqualified stock options for up to 500,000 shares of common stock; and (iii) the 2006 Stock Plan (the "2006 Plan") which authorizes the grant of stock rights for up to 4,000,000 shares of common stock, decreased by the number of shares of common stock issued and issuable pursuant to options outstanding under either the 1988 Plan or the 1989 Plan (together, the "Prior Plans"). The 2006 Plan was approved by our shareholders at the Annual Meeting of Shareholders held on June 20, 2006. Upon adoption of the 2006 Plan by our shareholders, we ceased granting new options under the Prior Plans. The Prior Plans permitted, and the 2006 Plan permits, the granting of stock awards to employees, officers, and non-employee members of the Board of Directors. Options granted under the Prior Plans and the 2006 Plan permit vesting over a 3-to-5 year period and expire 5-to-10 years from the date of grant. At December 31, 2009, approximately 675,000 shares were available for future grants under the 2006 Plan and no shares were available for future grants under the Prior Plans.

During the year ended December 31, 2009, the Company issued approximately 549,000 stock options at exercise prices equal to or greater than the fair market value of the Company's common stock on the date of grant under the 2006 Plan. Approximately 388,000 shares were forfeited and approximately 97,000 shares were vested during the year ended December 31, 2009.

Table of Contents

Microfluidics International Corporation
Notes to Consolidated Financial Statements (Continued)

11. Supplemental Disclosures for Stock-Based Compensation (Continued)

During the year ended December 31, 2007, the Company issued 36,577 shares of common stock pursuant to the cashless exercise of options granted for the exercise of 50,000 shares of the Company's common stock. Since the prior plans do not expressly provide for a cashless exercise, these transactions were considered a modification of the respective stock option agreements entered into with the former Chairman and Chief Executive Officer. Accordingly, for the year ended December 31, 2007, the Company recorded compensation expenses of approximately \$61,000. This amount was charged to General and Administrative expenses in the consolidated statements of operations.

Activity under the Plans is as follows:

| | Years Ended December 31, | | | | | |
|-------------------------------------|--------------------------|--|----------------------|--|----------------------|--|
| | 2009 | | 2008 | | 2007 | |
| | Number of Options | Weighted Average Exercise Price | Number of Options | Weighted Average Exercise Price | Number of Options | Weighted Average Exercise Price |
| Outstanding at beginning of period | 1,284,682 | \$ 1.37 | 1,585,427 | \$ 1.35 | 1,561,086 | \$ 1.45 |
| Granted | 549,000 | 0.54 | 432,577 | 1.06 | 376,982 | 1.16 |
| Cancelled | (388,073) | 1.16 | (678,681) | 1.21 | (213,139) | 2.18 |
| Exercised | (11,000) | 0.37 | (54,641) | 0.42 | (139,502) | 0.66 |
| Outstanding at end of period | 1,434,609 | \$ 1.10 | 1,284,682 | \$ 1.37 | 1,585,427 | \$ 1.35 |
| Exercisable at end of period | 595,702 | \$ 1.35 | 550,646 | \$ 1.59 | 1,134,678 | \$ 1.35 |

Summarized information about stock options outstanding as of December 31, 2009 is as follows:

| Range of exercise prices | Number of options outstanding | Weighted average remaining contractual life (years) | Weighted average exercise price | Exercisable number of options | Weighted average exercise price |
|-----------------------------|-------------------------------------|---|--|-------------------------------------|--|
| \$0.30 \$0.84 | 577,530 | 9.32 | \$ 0.53 | 83,033 | \$ 0.50 |
| \$1.05 \$1.73 | 744,645 | 7.85 | 1.16 | 401,522 | 0.85 |
| \$2.23 \$3.70 | 112,434 | 4.96 | 2.44 | 111,147 | 1.96 |
| | 1,434,609 | 8.24 | \$ 1.10 | 595,702 | \$ 1.35 |

Table of Contents

Microfluidics International Corporation
Notes to Consolidated Financial Statements (Continued)

12. Commitments

The Company leases its facilities under non-cancelable operating leases expiring through December 2012. Future minimum rental payments under the operating leases at December 31, 2009 are:

| Years Ended December 31, | <i>(in thousands)</i> |
|-----------------------------|-----------------------|
| 2010 | \$ 462 |
| 2011 | 375 |
| 2012 | 23 |
| 2013 | |
| 2014 | |
| Thereafter | |
| Total lease payments | \$ 860 |

Rent expense for the years ended December 31, 2009, 2008, and 2007, was approximately \$481,000, \$509,000 and \$498,000, respectively. A portion of the Newton, Massachusetts facility was sublet to a non-affiliated company under a tenant-at-will arrangement until June 30, 2007 for an approximate total of \$15,000.

13. Related Party Transactions

The Company sells products to a customer that shares common ownership with GSP. During the years ended December 31, 2009 and 2008, sales to this customer totaled approximately \$737,000 and \$79,000, respectively.

14. Condensed Consolidated Quarterly Financial Data (unaudited)

The following consolidated interim financial information is unaudited. Such information reflects all adjustments, consisting solely of normal recurring adjustments, which are in the opinion of management necessary for a fair presentation of the quarterly financial data.

| <i>(in thousands, except share and per share data)</i> | Year Ended December 31, 2009 | | | |
|--|------------------------------|-----------|----------|----------|
| | Qtr. 1 | Qtr. 2 | Qtr. 3 | Qtr. 4 |
| Revenues | \$ 3,559 | \$ 3,469 | \$ 4,462 | \$ 4,249 |
| Gross profit | 1,906 | 1,976 | 2,929 | 2,629 |
| (Loss) income before income tax | | | | |
| (benefit)provision | (690) | (177) | 425 | 62 |
| Income tax benefit | | | | (18) |
| Net (loss) income | (690) | (177) | 425 | 80 |
| Net (loss) income per share: | | | | |
| Basic (loss) income per share | \$ (0.07) | \$ (0.02) | \$ 0.04 | \$ 0.01 |
| Diluted (loss) income per share | \$ (0.07) | \$ (0.02) | \$ 0.04 | \$ 0.01 |

Table of Contents

Microfluidics International Corporation
Notes to Consolidated Financial Statements (Continued)

14. Condensed Consolidated Quarterly Financial Data (unaudited) (Continued)

| <i>(in thousands, except share and per share data)</i> | Year Ended December 31, 2008 | | | |
|--|------------------------------|-----------|-----------|-----------|
| | Qtr. 1 | Qtr. 2 | Qtr. 3 | Qtr. 4 |
| Revenues | \$ 3,552 | \$ 4,374 | \$ 3,511 | \$ 3,464 |
| Gross profit | 1,913 | 2,149 | 1,803 | 1,708 |
| Loss before income tax benefit | (445) | (790) | (1,061) | (1,715) |
| Income tax benefit | | | | |
| Net loss | (445) | (790) | (1,061) | (1,715) |
| Net loss per share: | | | | |
| Basic loss per share | \$ (0.04) | \$ (0.08) | \$ (0.10) | \$ (0.17) |
| Diluted loss per share | \$ (0.04) | \$ (0.08) | \$ (0.10) | \$ (0.17) |

15. Valuation and Qualifying Accounts:

| <i>(in thousands)</i> | Balance at Beginning of Period | Additions Charged to Costs and Expenses | Deductions and Adjustments | Balance at End of Period |
|---|--------------------------------------|--|----------------------------------|--------------------------------|
| Allowance for Doubtful Accounts: | | | | |
| For the year ended December 31, 2009 | \$ 44 | \$ 16 | \$ (16) | \$ 44 |
| For the year ended December 31, 2008 | 41 | 3 | | 44 |
| For the year ended December 31, 2007 | 38 | 6 | (3) | 41 |
| Inventory Reserve: | | | | |
| For the year ended December 31, 2009 | \$ 196 | \$ 50 | \$ (50) | \$ 196 |
| For the year ended December 31, 2008 | 208 | | (12) | 196 |
| For the year ended December 31, 2007 | 200 | 8 | | 208 |
| Warranty Reserve: | | | | |
| For the year ended December 31, 2009 | \$ 71 | \$ 40 | \$ (52) | \$ 59 |
| For the year ended December 31, 2008 | 54 | 140 | (123) | 71 |
| For the year ended December 31, 2007 | 74 | 14 | (34) | 54 |

Table of Contents

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

None.

Item 9A(T). Controls and Procedures

The certificates of the Company's chief executive officer and principal financial and accounting officer attached as Exhibits 31.1 and 31.2 to this Annual Report on Form 10-K include, in paragraph 4 of such certifications, information concerning the Company's disclosure controls and procedures, and internal control over financial reporting. Such certifications should be read in conjunction with the information contained in this Item 9A(T) for a more complete understanding of the matters covered by such certifications.

Disclosure Controls and Procedures

The Company's management, with the participation of the Company's chief executive officer and principal financial and accounting officer, evaluated the effectiveness of the Company's disclosure controls and procedures as of December 31, 2009. The term "disclosure controls and procedures", as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its chief executive officer and principal financial and accounting officer, as appropriate, to allow timely decisions to be made regarding required disclosure. It should be noted that any system of controls and procedures, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met and that management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of the Company's disclosure controls and procedures as of December 31, 2009, the Company's chief executive officer and principal financial and accounting officer concluded that, as of such date, the Company's disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). 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. Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) 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 (iii) 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 interim or annual consolidated 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

Table of Contents

risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management, with the participation of its chief executive officer and principal financial and accounting officer, conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2009 based on the framework in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. This annual report does not include an attestation report of the Company's registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the company's registered public accounting firm pursuant to temporary rules of the Securities Exchange Commission that permit the Company to provide only Management's report in this Annual Report. Based on this assessment, the Company's management concluded that, as of December 31, 2009, the Company's internal control over financial reporting was effective based on those criteria.

Changes in Internal Control Over Financial Reporting

There were no changes to the Company's internal control over financial reporting during the fourth quarter ended December 31, 2009 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 will be incorporated by reference from our definitive proxy statement to be filed within 120 days of our fiscal year end.

Item 11. Executive Compensation

The information required by this Item 11 will be incorporated by reference from our definitive proxy statement to be filed within 120 days of our fiscal year end.

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

The information required by this Item 12 will be incorporated by reference from our definitive proxy statement to be filed within 120 days of our fiscal year end.

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

The information required by this Item 13 will be incorporated by reference from our definitive proxy statement to be filed within 120 days of our fiscal year end.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 will be incorporated by reference from our definitive proxy statement to be filed within 120 days of our fiscal year end.

Table of Contents

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) (1) Financial Statements

The following Consolidated Financial Statements are included in Item 8:

| | Page |
|---|--------------|
| <u>Report of Independent Registered Public Accounting Firm</u> | <u>38</u> |
| <u>Consolidated Balance Sheets as of December 31, 2009 and 2008</u> | <u>39</u> |
| <u>Consolidated Statements of Operations for the Three Years Ended December 31, 2009</u> | <u>40</u> |
| <u>Consolidated Statements of Cash Flows for the Three Years Ended December 31, 2009</u> | <u>41</u> |
| <u>Consolidated Statements of Changes in Stockholders' Equity for the Three Years Ended December 31, 2009</u> | <u>42</u> |
| <u>Notes to Consolidated Financial Statements</u> | <u>43-61</u> |

(a) (2) All schedules for which provision is made under Item 15(a)(2) are inapplicable and, therefore, have been omitted.

(a) (3) Exhibits: See Index to Exhibits, which is incorporated by reference in this Item. The Exhibits listed in the accompanying Index to Exhibits are filed or incorporated by reference as part of this annual report.

(b) Exhibits: See Index to Exhibits, which is incorporated by reference in this Item. The Exhibits listed in the accompanying Index to Exhibits are filed or incorporated by reference as part of this annual report.

(c) Not Applicable.

Table of Contents

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, in the city of Newton, Commonwealth of Massachusetts, on the 29th day of March, 2010.

MICROFLUIDICS INTERNATIONAL CORPORATION

By: /s/ MICHAEL C. FERRARA

Michael C. Ferrara

President and Chief Executive Officer

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

| Signature | Title | Date |
|---|---|----------------|
| <u> /s/ MICHAEL C. FERRARA </u> Michael C. Ferrara | President, Chief Executive Officer & Director (principal executive officer) | March 29, 2010 |
| <u> /s/ PETER F. BYCZKO </u> Peter F. Byczko | Vice President and Chief Accounting Officer (principal financial officer and principal accounting officer) | March 29, 2010 |
| <u> /s/ GEORGE UVEGES </u> George Uveges | Director Chairman of the Board of Directors | March 29, 2010 |
| <u> /s/ LEO PIERRE ROY </u> Leo Pierre Roy | Director | March 29, 2010 |
| <u> /s/ ERIC G. WALTERS </u> Eric G. Walters | Director | March 29, 2010 |
| <u> /s/ HENRY KAY </u> Henry Kay | Director | March 29, 2010 |
| <u> /s/ STEPHEN J. ROBINSON </u> Stephen J. Robinson | Director | March 29, 2010 |

Table of Contents

Index to Exhibits

| Exhibit No. | Description |
|--------------------|--|
| 3(a) | Certificate of Incorporation for the Company, as amended (filed as Exhibit 2A to Registration Statement No. 0-11625 on Form 8-A and as Exhibit 3.1(a) to the Company's Report on Form 10-Q for the quarterly period ended September 30, 1999 and incorporated herein by reference). |
| 3(b) | Certificate of Amendment to the Restated Certificate of Incorporation of Microfluidics International Corporation (filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on June 10, 2009 and incorporated herein by reference). |
| 3(c) | Amended and Restated By-Laws for the Company (filed as Exhibit 3.3(b) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference). |
| 10.2 | 1988 Stock Plan (filed as Exhibit 10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1988 and incorporated herein by reference). |
| 10.3 | 1989 Non-Employee Directors Stock Option Plan (filed as Exhibit 10.1 to the Company's registration statement on Form S-8 filed October 22, 1996 and incorporated herein by reference). |
| 10.18 | 1988 Stock Plan as amended (filed as Exhibit 10(a) to the Company's Form 10-Q for the quarterly period ended March 31, 1997 and incorporated herein by reference). |
| 10.32 | Subordinated Promissory Note on the Company in favor of Lake Shore Industries, Inc. in the amount of \$300,000.00 dated February 28, 2000. (Filed as Exhibit 10.35 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.) |
| 10.33 | Settlement Agreement, dated January 17, 2000 by and among the Company, Bret A. Lewis, J. B. Jennings, Lake Shore Industries, Inc., and JIJ Properties, Inc., with \$300,000 Subordinated Promissory Note dated February 28, 2000, issued by the Company to Lake Shore Industries, Inc. (FKA Epworth Manufacturing Company, Inc). (Filed as Exhibit 10.37 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.) |
| 10.45 | Second Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated March 29, 2002. (Filed as Exhibit 10.50 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.) |
| 10.46 | 1986 Employee Stock Purchase Plan as Amended (Filed as Exhibit 10.51 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.) |
| 10.47 | 1988 Stock Plan as Amended. (Filed as Exhibit 10.52 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.) |
| 10.52 | Revolving Line of Credit Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.56 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |

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Table of Contents

| Exhibit No. | Description |
|--------------------|---|
| 10.54 | Secured Term Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.58 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.55 | Loan and Security Agreement between Banknorth, N.A. and the Company dated March 3, 2004 (Filed as Exhibit 10.59 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.56 | Trademark Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.60 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.57 | Patent Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.61 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.58 | Placement Agency Agreement between the Company and Casimir Capital L.P. dated February 13, 2004 (Filed as Exhibit 10.62 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.59 | First Amendment to Placement Agency Agreement between the Company and Casimir Capital L.P. dated March 12, 2004 (Filed as Exhibit 10.63 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.60 | Registration Rights Agreement between the Company and Purchasers dated March 16, 2004 (Filed as Exhibit 10.64 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference). |
| 10.61 | Lease between ABB and MFIC Corporation dated April 1, 2004 for space at Lampertheim, Germany (filed as Exhibit 10.65 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference). |
| 10.62 | Letter Agreement between Maxim Group LLC and MFIC Corporation dated November 17, 2004 to provide general financial advisory and investment banking services to the Company (filed as Exhibit 10.66 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference). |
| 10.63 | Research Collaboration Agreement between University of Massachusetts, Lowell and MFIC Corporation, dated September 21, 2005 (filed as Exhibit 10.63 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2005, and incorporated herein by reference). |
| 10.64 | Warrant issued to Maxim Group LLC dated April 1, 2005 (filed as Exhibit 10.64 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2005, and incorporated herein by reference). |
| 10.65 | Form of Warrant issued to placement agent under the Placement Agency Agreement (filed as Exhibit 4.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference). |
| 10.66 | Form of Warrant issued to investors in the private placement described in the Placement Agency Agreement (filed as Exhibit 4.3 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference). |

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Table of Contents

| Exhibit No. | Description |
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| 10.67 | 2006 Stock Plan (filed as Exhibit 10.1 to the Company's Form 8-K on August 11, 2006 and incorporated herein by reference). |
| 10.68 | Letter Agreement between MFIC Corporation and Maxim Group LLC dated February 24, 2006 concerning the warrant issued to Maxim Group LLC. (filed as Exhibit 10.68 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2006 and incorporated herein by reference). |
| 10.69 | Lease for 30 Ossipee Road, Newton, Massachusetts dated November 6, 2006, between MFIC Corporation and King Real Estate Corp., Trustee of 1238 Chestnut Street Trust under Declaration of Trust dated May 23, 1969, recorded with Middlesex South Registry of Deeds in Book 11682, Page 384. (filed as Exhibit 10.69 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2006 and incorporated herein by reference). |
| 10.70 | TD Banknorth Loan Modification Agreement dated November 20, 2006. (filed as Exhibit 10.70 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2006 and incorporated herein by reference). |
| 10.71 | Letter Agreement between MFIC Corporation and Maxim Group LLC dated March 23, 2007 concerning the warrant issued to Maxim Group LLC. (filed as Exhibit 10.71 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2006 and incorporated herein by reference). |
| 10.72** | Executive Employment Agreement by and between the Company and Irwin J. Gruverman dated as of April 6, 2007 (filed as Exhibit 10.1 to the Company's Form 8-K on April 12, 2007 and incorporated herein by reference). |
| 10.73** | Executive Employment Agreement by and between the Company and Robert P. Bruno dated as of April 26, 2007 (filed as Exhibit 10.1 to the Company's Form 8-K on May 2, 2007 and incorporated herein by reference). |
| 10.74** | Executive Employment Agreement by and between the Company and Dennis Riordan dated as of April 26, 2007 (filed as Exhibit 10.2 to the Company's Form 8-K on May 2, 2007 and incorporated herein by reference). |
| 10.75** | Executive Employment Agreement by and between the Company and Jack M. Swig dated as of April 26, 2007 (filed as Exhibit 10.3 to the Company's Form 8-K on May 2, 2007 and incorporated herein by reference). |
| 10.76** | Resignation letter dated September 17, 2007 from Irwin J. Gruverman to the Company (filed as Exhibit 10.1 to the Company's Form 8-K on September 20, 2007 and incorporated herein by reference). |
| 10.77** | Resignation Agreement dated September 17, 2007 by and between Irwin J. Gruverman and the Company (filed as Exhibit 10.2 to the Company's Form 8-K on September 20, 2007 and incorporated herein by reference). |
| 10.78 | Affirmation and Release Agreement dated September 17, 2007 by and between Irwin J. Gruverman and the Company (filed as Exhibit 10.3 to the Company's Form 8-K on September 20, 2007 and incorporated herein by reference). |
| 10.79** | Employment Agreement dated as of November 14, 2007 by and between Michael C. Ferrara and the Company (filed as Exhibit 10.1 to the Company's Form 8-K on November 19, 2007 and incorporated herein by reference). |

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Table of Contents

| Exhibit No. | Description |
|--------------------|---|
| 10.80 | Lease for 17755 Sky Park East, Suite 100, Irvine, CA, 92614 between MFIC Corporation and The Knoll Company dated November 28, 2007 (filed as Exhibit 10.80 to the Company's Form 10-K on March 21, 2008 and incorporated herein by reference). |
| 10.81 | Banknorth, N.A. waiver letter dated March 5, 2008 (filed as exhibit 10.81 to the Company's form 10-K on March 21, 2008 and incorporated herein by reference) |
| 10.82 | Letter dated May 19, 2008 from MFIC Corporation to Brian E. LeClair (filed as Exhibit 10.1 to the Company's Form 8-K on June 10, 2008 and incorporated herein by reference). |
| 10.83 | Loan and Security Agreement, dated as of June 30, 2008, between Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.1 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.84 | Intellectual Property Security Agreement, dated as of June 30, 2008, by and between Microfluidics International Corporation and Silicon Valley Bank (filed as Exhibit 10.2 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.85 | Letter from Microfluidics International Corporation and Microfluidics Corporation to Silicon Valley Bank, dated June 30, 2008 (filed as Exhibit 10.3 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.86 | Security Agreement, dated June 30, 2008, executed by Microfluidics International Corporation in favor of TD Bank, N.A. (filed as Exhibit 10.4 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.87 | Export-Import Bank Loan and Security Agreement, dated as of July 2, 2008, among Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.5 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.88 | Export-Import Bank Loan and Security Agreement, dated as of July 2, 2008, among Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.6 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.89 | Promissory Note (Export-Import), dated July 2, 2008, by and between Microfluidics International Corporation and Microfluidics Corporation in favor of Silicon Valley Bank (filed as Exhibit 10.7 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.90 | First Loan Modification Agreement, dated as of July 2, 2008, by and between Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.8 to the Company's Form 8-K on July 7, 2008 and incorporated herein by reference). |
| 10.91 | Amended and Restated Loan and Security Agreement, dated as of October 20, 2008, among Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.1 to the Company's Form 8-K on October 24, 2008 and incorporated herein by reference). |
| 10.92 | Amended and Restated Export-Import Bank Loan and Security Agreement, dated as of October 20, 2008, among Silicon Valley Bank, Microfluidics International Corporation and Microfluidics Corporation (filed as Exhibit 10.2 to the Company's Form 8-K on October 24, 2008 and incorporated herein by reference). |

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Table of Contents

| Exhibit No. | Description |
|--------------------|---|
| 10.93 | Promissory Note (Export-Import), dated October 20, 2008, made by Microfluidics International Corporation in favor of Silicon Valley Bank (filed as Exhibit 10.3 to the Company's Form 8-K on October 24, 2008 and incorporated herein by reference). |
| 10.94 | Promissory Note (Export-Import), dated October 20, 2008, made by Microfluidics Corporation in favor of Silicon Valley Bank (filed as Exhibit 10.4 to the Company's Form 8-K on October 24, 2008 and incorporated herein by reference). |
| 10.95 | Convertible Debenture and Warrant Purchase Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (filed as Exhibit 10.1 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference). |
| 10.96 | Amendment No. 1 to Convertible Debenture and Warrant Purchase Agreement and Amendment No. 1 to Convertible Convertible Debenture, between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 17, 2008 (filed as Exhibit 10.2 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference). |
| 10.97 | Registration Rights Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 and amended on December 3, 2008 (filed as Exhibit 10.3 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference). |
| 10.98 | Security Agreement between Microfluidics International Corporation and Global Strategic Partners, LLC, dated as of November 14, 2008 (filed as Exhibit 10.4 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference). |
| 10.99 | Convertible Convertible Debenture issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008, as amended (filed as Exhibit 10.5 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference). |
| 10.100 | Common Stock Purchase Warrant issued by Microfluidics International Corporation to Global Strategic Partners, LLC, dated as of November 14, 2008 (filed as Exhibit 10.6 to Amendment No. 1 to the Company's Form S-3 on January 19, 2009 and incorporated herein by reference) |
| 10.101 | Amendment No. 2 to Registration Rights Agreement, Amendment No. 2 to Convertible Debenture and Warrant Purchase Agreement and Amendment to Security Agreement dated March 11, 2009 by and between Microfluidics International Corporation and Global Strategic Partners, LLC (filed as Exhibit 10.1 to the Company's 8-K filed on March 17, 2009 and incorporated herein by reference). |
| 10.102 | Loan Agreement dated October 23, 2009 by and between Microfluidics International Corporation and Webster Bank, National Association (filed as Exhibit 10.1 to the Company's 8-K filed on October 26, 2009 and incorporated herein by reference). |
| 10.103 | Security Agreement dated October 23, 2009 by and between Microfluidics International Corporation and Webster Bank, National Association (filed as Exhibit 10.2 to the Company's 8-K filed on October 26, 2009 and incorporated herein by reference). |

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Table of Contents

| Exhibit No. | Description |
|--------------------|---|
| 10.104 | Amendment to Transaction Documents dated October 23, 2009 by and between Microfluidics International Corporation and Global Strategic Partners, LLC (filed as Exhibit 10.3 to the Company's 8-K filed on October 26, 2009 and incorporated herein by reference). |
| 10.105** | Employment Agreement dated as of December 4, 2009 by and between Michael C. Ferrara and the Company (filed as Exhibit 10.1 to the Company's Form 8-K on December 8, 2009 and incorporated herein by reference). |
| 10.106** | Employment Agreement dated as of March 9, 2009 by and between Peter F. Byczko and the Company (filed as Exhibit 10.1 to the Company's Form 8-K on March 31, 2009 and incorporated herein by reference). |
| 10.107 | Form of Notice of Grant of Stock Option and Employee Stock Option Agreement for Microfluidics International Corporation 2006 Stock Plan.(incorporated by reference from the registrants Current Report on Form 8-K (File No. 0-11625) as filed with the Commission on June 10, 2009). |
| 10.108 | Amendment No. 2 (the "Amendment") to that certain Debenture and Warrant Purchase Agreement dated as of November 14, 2008 (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on August 14, 2009 and incorporated herein by reference. |
| 10.109* | Summary of Compensation Arrangements including Discretionary Bonus Plan with named executive officers. |
| 14.1 | Code of Business Conduct and Ethics (filed as Exhibit 14.1 to the Company's 8-K filed on December 23, 2009 and incorporated herein by reference.) |
| 21 | Subsidiary of the Company, Microfluidics Corporation, a Delaware corporation |
| 23(a)* | Consent of UHY LLP |
| 31.1* | Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 31.2* | Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 32.1* | Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 32.2* | Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |

*
Filed herewith.

**
Represents management contract or compensatory plan or arrangement

The file number for our Exchange Act reports is 0-11625.