

MICROFLUIDICS INTERNATIONAL CORP  
Form 10-K  
March 30, 2009

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

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)  
OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2008  
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 02464  
(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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 <input type="radio"/>	Accelerated filer <input type="radio"/>	Non-accelerated filer <input type="radio"/> (Do not check if a smaller reporting company)	Smaller reporting company <input checked="" type="radio"/>
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Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No

As of March 25, 2009 and June 30, 2008, 10,371,782 and 10,267,981 shares, respectively, of the registrant's Common Stock were outstanding, and the aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant (without admitting that such person whose shares are not included in such calculation is an affiliate) was approximately \$3,889,418 and \$11,294,779, respectively, based on the last sale price as reported by the Over-the-Counter Bulletin Board on each such date.

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## MICROFLUIDICS INTERNATIONAL CORPORATION

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## 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 20 years, specialized in manufacturing and marketing a broad line of materials processing systems, more specifically known as high shear fluid processing systems, which are systems used in numerous applications in the chemical, pharmaceutical, biotech, 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.

Additionally, our 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 streams of reacting materials (“Microfluidics Reaction Technology” or “MRT”).

In 2008, we presented at the following events: NSTI-Nanotech 2008, [www.nsti.org](http://www.nsti.org), Boston MA, the 17th International Symposium on Industrial Crystallization, September 14-17, 2008 – Maastricht (the Netherlands); and Nanotech Briefs, November 2008, Boston MA. We also had a publication at Chemical Engineering Progress, “Nano-Particle Formation via Controlled Crystallization: A “Bottom Up Approach” by Thomai Panagiotou and Robert J. Fisher, Chemical Engineering Progress, Vol.104, No. 10, October 2008.

The technology embodied within our Microfluidizer high shear fluid processor is used in formulating products that are normally very difficult to mix and stabilize. Microfluidizer processors, through process intensification, allow manufacturers in the chemical, pharmaceutical, cosmetic, and food processing industries to produce higher quality products with better characteristics, on a more consistent basis, than with other blending, mixing or homogenizing techniques. Further, we guarantee scale up of formulations and results on our processor equipment 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.

Our management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of our processing equipment and our Microfluidics Reaction Technology (MRT) which is discussed below in more detail.

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 amended its certificate of incorporation and changed its name back to Microfluidics International Corporation. We also operated another division, known as the Morehouse-COWLES Division, (“the Division”), from August, 1998 until February 4, 2004, which manufactured and sold a broad line of mechanical fluid materials processing systems used for a variety of

dispersing, milling, and mixing applications across a variety of industries. (See "Former Company Business Division", below for additional discussion on the Division). Our principal executive offices are located at 30 Ossipee Road, in Newton, Massachusetts 02464 and our telephone number is (617) 969-5452.

## Technologies

### Fluid Processing Equipment.

Microfluidizer high shear fluid processors differ from conventional mechanical mixing and processing technologies in that our equipment utilizes 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").

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 can be produced by any other means. Microfluidizer processors also differ from conventional mixing and homogenization equipment in that Microfluidizer 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)

MRT Processor – In 2008 and 2007 we presented at several conferences and published several articles regarding MRT, and in 2008 we filed a U.S. patent application for a special co-axially fed Microfluidizer processor that is able to use varying ratio of reactants and exhibit more control over residence times. This Microfluidics MRT Processor is better suited to moderate and slower speed chemical reactions and physical reactions conducted on a continuous basis, such as crystallization. (See Microfluidics Reaction Technology (MRT) below for additional discussion on MRT)

### Commercial Applications

Microfluidizer processor technology allows manufacturers in chemical, pharmaceutical, biotechnology, cosmetic and food processing 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.

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.

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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, 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, or contamination of, the cell contents. The Microfluidizer processor equipment eliminates grinding media contamination, thus 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. 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 guaranteed scale-up of formulations and results on our equipment can range from 10 milliliters per minute on our laboratory and bench top models to more than 15 gallons per minute on our large production models.

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 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 Laboratory Machines

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 Laboratory Machines

The M-110P was introduced in September 2007. It is a "plug and play" electro-hydraulic machine that incorporates a 2 HP single phase motor 110v (or 220v). Its only utility requirement is a 20 amp standard electrical outlet. The M-110P can achieve process pressures of 30,000 psi with an average flow rate of 120 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.

The M-110EH 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 320 ml/min. The M-110EH 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, diamond interaction chamber, and options including explosion-proof motor, and steam sterilization.

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 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.

### 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.

Due to market demand from the pharmaceutical, biotech and cosmetic industries, the M-700 product line was upgraded to 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) and Clean-In-Place (CIP) sterilization options on the M-700 Series. Our M-700 series includes 24 standardized configurations specifically designed to meet the diverse needs of the pharmaceutical and biotech industries.

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 largest offering of the M-700 series product line is the 50 HP, 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.

Additionally, between 2003 and 2005 we introduced several new equipment features or options for the M-700 series product offerings including:

(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) accommodates demands of limited space within clean rooms and for noise abatement within

pharmaceutical production facilities. Hazardous environment locations can also benefit by placing the electrical drive system in a non-hazardous area.

(iii.) Level II Steam Sterility Option for all pilot and production systems used for production of injectable and other pharmaceuticals. This option enables steam-in-place (SIP) capability without need for disassembly and allows compliance with stringent regulatory production requirements.

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(iv.) Clean in Place (CIP) option, which provides the ability to clean-in-place Microfluidizer processor systems between product batch runs or before storage. This capability differentiates our Microfluidizer materials processor systems from all other competitive products.

(v.) 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).

#### Microfluidics Reaction Technology (MRT).

Both reactors (MMR & MRT Processor) and processes now fall under the umbrella of Microfluidics Reaction Technology. We have introduced a patented Multiple Stream High Pressure Mixer-Reactor (MMR) system as a continuous chemical reactor, which we believe may become a standard device for conducting high speed chemical reactions, many of which can be configured to produce nanoparticles. This system produces uniform nanoparticles on a continuous (versus batch) basis with phase purity 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 the new 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. A newer novel process and device 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). 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.

A recent breakthrough has allowed the design of our MRT 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.

It has been reported to the scientific community that our MRT Processor can create high purity nano-particles to sizes not achievable with conventional particle size reduction methods, including our own Microfluidizer processors. Conventional processors, such as wet-milling, high pressure homogenization, micronization, and other techniques are considered to be “top down” methods that mechanically reduce particle sizes. Most often these “top-down” processes cannot produce enough energy to break through nature’s barrier to reduce particles smaller than the primary crystal size which varies with each material of interest. This limitation is a roadblock that prevents a growing number of critical formulations from becoming available to the marketplace.

Use of our MRT Processor, through chemical and physical processes (such as crystallization), utilizes a proprietary “bottom up” approach to produce high purity nanoparticles the size of which 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. We anticipate commercialization and introduction of MRT equipment in late 2009.

In 2008, we presented at the following events: NSTI-Nanotech 2008, [www.nsti.org](http://www.nsti.org), Boston MA, the 17th International Symposium on Industrial Crystallization, September 14-17, 2008 – Maastricht (the Netherlands),

Nanotech Briefs, November 2008, Boston, Massachusetts. We also had a publication at Chemical Engineering Progress, "Nano-Particle Formation via Controlled Crystallization: A "Bottom-up" Approach " by Thomai Panagiotou and Robert J. Fisher, Chemical Engineering Progress, Vol.104, No. 10, October 2008.

We are proceeding with projects involving other companies seeking to optimize or enable drug delivery, catalysts and coatings products, 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 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.

#### Former Company Business Division

Morehouse-COWLES Division. On February 9, 2004, pursuant to an Asset Purchase Agreement dated February 5, 2004 between the Company and a wholly owned subsidiary of NuSil Corporation, a California corporation (NuSil), we sold substantially all of the assets and selected liabilities of our Morehouse-COWLES Division (the Division), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between us and NuSil.

Prior to February 9, 2004, the Company-operated Division manufactured grinding and dispersing equipment used in a broad number of industries including the coatings and ink industries. The products included high-speed single and multi-shaft dissolvers and dispersers, stone mills, and vertical and horizontal media mills. As one of the early inventors of dispersers, dissolvers, stone mills, and media mills, the one hundred-year-old COWLES name is an industry-accepted symbol of quality, reliable products. The Division manufactures products that are generally used for blending, mixing, deagglomeration and dispersion of paints and coatings, inks, adhesives, sealants, and pigment dispersions. These applications are more conventional whereby the formulations are less expensive to produce and the volumes of product produced are large. The Division product lines are used in broader, high volume, lower value-added applications requiring less stringent particle size reduction.

#### 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. 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. 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 application laboratories. These laboratories are located in Newton, Massachusetts, Irvine, California, and Lampertheim, Germany, and provide complimentary processing as well as particle size and distribution analysis of a prospective customer's sample formulation. Typically, about one third 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. Finally, 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.

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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.

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 chemical, pharmaceuticals, food, cosmetic and biotechnology industries. Our customers include end users and distributors. Glaxo Smith Kline and Subsidiaries accounted for 20.2% of 2008 revenues. No other company accounted for more than 10% of our revenue. In 2007, no company accounted for more than 10% of our revenue. In 2006, Teva Pharmaceuticals Industries Ltd., and its wholly-owned subsidiary, accounted for 15.2% of our revenue. With regard to sales to distributors, no individual end-user represents 10% or more of our revenues in year 2008, 2007 & 2006.

We sell our products in various countries. Our revenues from sales in the United States were approximately \$6,811,000 in 2008, \$7,707,000 in 2007, and \$7,418,000 in 2006, which accounted for 45.7%, 55.21% and 46.7% of our revenues in 2008, 2007, and 2006, respectively. Our sales in North America, including the United States, Canada and Mexico, accounted for approximately 49.9% of our revenues in 2008, 60.4% of our revenues in 2007, and 55.2% of our revenues in 2006, with almost all of those sales coming from the United States and Canada. Sales to the rest of the world accounted for approximately 50.1% of our revenues in 2008; 39.6% of our revenues in 2007; and 44.8% of our revenues in 2006. In particular, approximately 12.2%, 2.7%, and 5.5%, of our net revenues in 2008, 2007, and 2006, respectively, resulted from sales to Belgium. In addition, approximately 9.8%, 12.9%, and 18.9%, of our net revenues resulted from sales to Japan and Korea in 2008, 2007 and 2006, 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. 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. It has been proven that for critical formulations, Microfluidizer processors produce repeatable and uniform higher quality products for our customers.

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 may encounter significant competition and there are other companies that possess patents and claims to equipment or processes that claim to make production quantities of nanoparticles.

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, 2008, 2007 and 2006, research and development costs for continuing operations were \$2,116,000, \$1,863,000 and \$1,763,000, 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 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 University of Toronto	Cell disruption Genomic research and expression
University of Karlsruhe Northeastern University	Food formulations and products Pharmaceutical nanotechnology particles
The Hebrew University of Jerusalem University of Vienna	Colloid chemistry emulsion technology Food formulations and products

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 intend to pursue patent protection in the United States and select foreign jurisdictions with respect to proprietary aspects of our Microfluidics Reaction Technology. U.S. Patent filing commenced in March 2008 and Patent Convention Treaty (PCT) filing will commence in March 2009 with national patents to follow in approximately 12-18 months.

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 in Canada.

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 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 should adequately protect 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. 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 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.

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## Backlog

Our sales order backlog related to continuing operations of accepted and unfilled orders at March 24, 2009 and March 23, 2008 was approximately \$2,200,000 and \$3,567,000, 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 53 full-time employees as of March 1, 2009. 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.

## Available Information and Website

Our website is [www.mficcorp.com](http://www.mficcorp.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 files 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, 2008, June 30, 2008 and September 30, 2008.

We have experienced operating losses from continuing operations in three of our last five fiscal years, including the fiscal year ended December 31, 2008, and we may not be able to achieve consistent profitability in the future.

For three of the past five fiscal years, as well as the twelve months ended December 31, 2008, we have experienced losses from continuing operations. During the year ended December 31, 2008 and the year ended December 31, 2007, we had a net loss of \$4,011,000 and \$1,507,000, respectively. It is anticipated that, even with the expenses changes implemented in first quarter in 2009, the Company will have a net loss in the current fiscal year.

The Company must become cash-flow positive prior to exhausting its credit facilities.

We have concluded that our existing cash and anticipated credit facilities should be sufficient to meet our working capital requirements for the next twelve months. In the first quarter of 2009 we have 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. However, if we sustain a revenue shortfall that we can't compensate for through additional cost cuts, or our potential credit facility is withdrawn, 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.

The current credit and financial market conditions may exacerbate certain risks affecting our business.

Increased concerns about credit markets, consumer confidence, economic conditions, volatile corporate profits and reduced capital spending could negatively impact demand for our products. We may experience in the future, reduced demand for our products because of the uncertainty in the general economic environment in which our customers and we operate. The current 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. If global economic and market conditions, or economic conditions in the United States, remain uncertain or persist, spread, or deteriorate further, 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 recent months, the volatility and disruption have reached unprecedented levels. 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 additional credit, 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 could result in substantial losses to our stockholders.

The \$5,000,000 in financing that we received in November, 2008 (the "Financing") would become immediately due and payable upon the occurrence of an Event of Default under the Financing documents. See "Sales of Unregistered Securities" in Part II, Item 5 below for further discussion of the Financing. See also the Form 8-K filed by the Company with the Securities and Exchange Commission on November 20, 2008 (the "Financing 8-K") for a full discussion of the events that constitute an Event of Default. Although most of the Events of Default are standard provisions relating to timely payments, accuracy of representations, solvency, and the absence of a change of control, an Event of Default will also occur if our stockholders fail to approve an increase in our authorized shares to a number sufficient to allow the Warrant (defined and discussed under "Sales of Unregistered Securities" in Part II, Item 5) to be exercised in full, which event is entirely beyond the control of management. If any Event of Default occurs, there can be no assurance that we would be able to repay the Financing or be able to raise additional funds to make such payment. Failure to repay the Financing could force us to reorganize our debts, possibly in bankruptcy, in which event our common stock could likely become worthless.

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. 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 may experience uncertain economic trends that adversely impact our business.

We may experience in the future reduced demand for our products as a result of the uncertainty in the general economic environment in which our customers and we operate. We cannot project the extent of the impact of the economic environment specific to our industry. If economic conditions worsen or if an economic slowdown occurs, we may experience a material adverse effect on our business, operating results and financial condition.

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 current 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 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 one of 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.

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, although we carry property and business interruption insurance, our coverage may not be adequate to compensate us for all losses that may occur. This insurance 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.

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 may be subjected to increased government regulation which 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 present local, state or federal regulation, 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.

We rely on our top management and technical personnel.

Our continued operation, innovation and growth are to some significant degree reliant on the continued services of our executive officers and leading technical personnel. There can be no assurance that we will be able to retain such management and technical personnel if employment is offered by other companies better able to pay higher compensation, provide more and better benefits, or willing to offer longer term job security by entering into employment contracts with our employees. Further, there can be no assurance that key executive officers and leading technical personnel will not leave our employment or either die or become disabled to an extent that they cannot render their services to us. Though we believe that we can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of our top management or leading technical personnel could, therefore, have a material adverse effect on our business, financial condition, or results of operations.

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 American or 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.

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, 2008, 2007, and 2006, shipments outside of North America accounted for approximately 50.1%, 39.6%, and 44.8%, respectively, of our net revenues in those periods. In particular, approximately 12.2%, 2.7%, and 5.5%, of our net revenues in 2008, 2007, and 2006, respectively, resulted from sales to Belgium. In addition, approximately 9.8%, 12.9%, and 18.9%, of our net revenues resulted from sales to Japan and Korea in 2008, 2007 and 2006, 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; seasonality of our revenue in Europe; changes in tariffs; political and economic instability; risk of terrorism; difficulties in managing distributors and 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, 2008, 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, 2009, 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.

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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 beginning on page 31. We discuss these estimates in the subsection entitled Critical Accounting Policies included in the Management's Discussion and Analysis of Financial Condition and Results of Operations section of our Annual and Quarterly Reports with the Securities and Exchange Commission. 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 in Newton, Massachusetts. We also maintain a sales office and laboratory facility in Lampertheim, Germany, and a sales and laboratory office 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.

#### 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. Submission of Matters to a Vote of Security Holders

No matters were submitted to a vote of our security holders during the quarter ended December 31, 2008.

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## 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. 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 2008	
	High	Low
4th Quarter	\$ 0.84	\$ 0.35
3rd Quarter	1.19	0.64
2nd Quarter	1.21	1.00
1st Quarter	1.29	1.00
	Fiscal Year 2007	
	High	Low
4th Quarter	\$ 1.39	\$ 1.02
3rd Quarter	1.67	1.15
2nd Quarter	1.80	1.50
1st Quarter	2.65	1.45

As of March 30, 2009, there were approximately 356 holders of record of our common stock.

## Sales of Unregistered Securities

On March 30, 2004, we 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 ½ 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 value of the warrants granted to the placement agent was approximately \$351,000. 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 placement agent and the purchasers of the units were “accredited investors” pursuant to the rules of the Securities and Exchange Commission. We filed a registration statement on Form SB-2, which was declared effective on May 13, 2004, for purposes of registering the shares of common stock underlying the units and warrants. The warrants associated with the purchases of these units expired March 30, 2007. The warrants issued to the placement agent may be exercised in whole or in part at any time 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 us of certain securities at a price below \$3.20.

On November 14, 2008, we sold a convertible debenture (the “Debenture”) and a warrant (the “Warrant”) to Global Strategic Partners, LLC, a Delaware limited liability company (“GSP”) pursuant to a Debenture and Warrant Purchase Agreement (the “Agreement”).

At the election of GSP, the Debenture, which has a principal face value of \$5,000,000, is convertible in whole or part on any of the maturity date, the date that any interest payment is due, or the date on which a change of control occurs into a number of shares of our common stock equal to the quotient of (i) the outstanding principal amount of the Debenture, divided by (ii) \$1.25.

The Warrant has a term of 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 have retired the Debenture on or before the third anniversary of the Agreement (the “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 is exercisable in two (2) tranches. The first tranche is exercisable in whole or in part at \$2.00 per share. The aggregate number of shares of our common stock (the “Tranche one Maximum”) that may be purchased in tranche one (the “Tranche One Exercise”) is forty percent (40%) of our common stock then outstanding on a fully diluted basis, minus that number of shares of our common stock that were issuable upon exercise of the conversion feature of the Debenture. Notwithstanding the preceding sentence, if all or any portion of the principal amount of the Debenture has been prepaid by us prior to the Third Anniversary, then the Tranche One Maximum will also include a number of shares of our common stock equal to the quotient of: (i) the amount of the 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 our common stock that may be purchased in tranche two is equal to (a) fifty percent (50%) of our common stock then outstanding on a fully diluted basis, minus (b) that number of shares of our common stock that GSP is or was entitled to acquire (or has theretofore acquired) upon (i) exercise of the conversion of the Debenture, and (ii) the Tranche One Exercise, plus (c) the Prepayment Shares. Tranche two may only be exercised after the full number of shares exercisable pursuant to tranche one have been purchased. GSP has the right to exercise the Warrant, in whole or in part, by tendering shares of our common stock to us in payment of the exercise price, in which event we would receive shares of our common stock instead of cash upon GSP’s exercise of the Warrant in that fashion.

The Debenture and the Warrant 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. GSP represented to the Company in the Agreement that it is an “accredited investor” pursuant to the rules of the Securities and Exchange Commission.

See the Financing 8-K for additional information regarding the above Financing.

#### Issuance of Warrants

On November 17, 2004, we 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 our 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. We 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 our 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 us of certain securities at a price below \$3.20.



## 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 the Agreement, we may not pay any dividends without first obtaining the written consent of GSP.

## Securities Authorized for Issuance Under Equity Compensation Plans

The equity compensation plan information in the table below is as of December 31, 2008. See also Note 11 to the Consolidated Financial Statements.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by stockholders	1,284,682	\$ 1.37	836,000
Equity compensation plans not approved by stockholders	213,992	\$ 3.20	-
<b>Total</b>	<b>1,498,674</b>	<b>\$ 1.63</b>	<b>836,000</b>

## Performance Graph

## Cumulative Total Return as of December 31,

	12/03	12/04	12/05	12/06	12/07	12/08
Microfluidics International Corporation AMEX	100.00	173.33	60.00	68.44	51.56	16.00
Composite	100.00	124.13	155.00	184.30	217.52	132.72
Peer Group	100.00	156.07	182.05	163.19	135.83	20.57

Our competitors are either larger integrated companies or privately-held companies. We have chosen a peer group consisting of companies with a market capitalization from \$7 million to \$24 million in the information technology sector of the American Stock Exchange. The peer group consists of the following issuers:

- Advance Photonic Inc.
- Elecsys Corporation
- Elixir Gaming Technologies Inc.
- Globalscape Inc.
- Orsus Xelent Technologies Inc.
- Relm Wireless Corporation
- Softbrands Inc.
- Telkonet Inc.
- Tucows Inc.
- Widepoint Corporation
- Wireless Telecom Group Inc.

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, 2008. 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. All fiscal years noted below have been restated to reflect discontinued operations.

	For The Years Ended December 31,				
(in thousands, except share and per share data)	2008	2007	2006	2005	2004
Consolidated Statement of Operations Data:					
Total revenues	\$ 14,871	\$ 12,992	\$ 15,654	\$ 11,645	\$ 12,159
Total costs and expenses	18,753	14,174	14,450	12,416	11,462
(Loss) income from continuing operations before income taxes	(3,882)	(1,182)	1,204	(771)	697
Interest expense	(154)	(20)	(35)	(59)	(69)
Interest income	25	64	50	26	27

Net (loss)						
income from						
continuing						
operations before						
income taxes	(4,011)	(1,138)	1,219	(804)	655	
Income tax						
provision (benefit)	-	369	(58)	185	(450)	
Net (loss)						
income from						
continuing						
operations before						
discontinued						
operations	(4,011)	(1,507)	1,277	(989)	1,105	
Loss from						
discontinued						
operations	-	-	-	-	(231)	
Net (loss) income	\$ (4,011)	\$ (1,507)	\$ 1,277	\$ (989)	\$ 874	
Basic amounts per						
common share:						
Basic net (loss)						
income per share						
from						
continuing						
operations	\$ (0.39)	\$ (0.15)	\$ 0.13	\$ (0.10)	\$ 0.11	
Basic net (loss)						
income per share						
from						
discontinued						
operations	-	-	-	-	(0.02)	
Basic net (loss)						
income per share	\$ (0.39)	\$ (0.15)	\$ 0.13	\$ (0.10)	\$ 0.09	
Diluted amounts						
per common share:						
Diluted net (loss)						
income per share						
from						
continuing						
operations	\$ (0.39)	\$ (0.15)	\$ 0.12	\$ (0.10)	\$ 0.10	
Diluted net (loss)						
income per share						
from						
discontinued						
operations	-	-	-	-	(0.02)	
Diluted net						
(loss) income per						
share	\$ (0.39)	\$ (0.15)	\$ 0.12	\$ (0.10)	\$ 0.08	
Weighted average						
shares outstanding:						
Shares used in	10,296,296	10,183,376	10,012,685	9,756,221	9,345,560	
computing net						
(loss) income per						

common

share, basic

Shares used in computing net (loss) income per common share, diluted	10,296,296	10,183,376	10,611,635	9,756,221	10,329,313
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As of December 31,

C o n s o l i d a t e d					
Balance Sheet Data:	2008	2007	2006	2005	2004
Cash and cash equivalents	\$ 1,895	\$ 756	\$ 1,860	\$ 1,452	\$ 2,028
Current assets	7,119	5,972	7,856	5,734	6,821
Working capital	4,464	4,382	5,643	4,273	5,180
Total assets	8,720	6,357	8,225	6,212	7,292
Long-term debt (including current portion)	4,625	65	312	563	813
Total stockholders' equity	1,440	4,767	5,947	4,426	5,089

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 loan agreement in place at that time, if any, (iv) whether our technology will be adopted by customers as a means of producing MRT innovative materials in large quantities, (v) whether we are able to deploy prototype MRT placements and then manufacture and introduce commercial production MRT 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 20 years, specialized in manufacturing and marketing a broad line of high shear fluid processing systems used in numerous applications in the chemical, pharmaceutical, biotech, 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, we guarantee scaleup of formulations and results on our processor equipment 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 chemical, pharmaceutical, cosmetic, and 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 have begun to take steps toward commercializing our proprietary equipment, processes and technology for the continuous production of precipitated submicron or nanoscale particles by interaction of discrete streams of reacting materials, through a novel adaptation of our Microfluidizer processor equipment that permits the mixing of, and reactions between, streams of different solutions at high pressures. We refer to this technology as a Multiple Stream

High Pressure 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, 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. We are still pursuing the allowance of the patent in Canada. Our management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of our materials processor and MMR equipment.

We intend to pursue patent protection in the United States and select foreign jurisdictions with respect to proprietary aspects of our Microfluidics Reaction Technology. U.S. Patent filing commenced in March 2008 and Patent Convention Treaty (PCT) filing will commence in March 2009 with national patents to follow in approximately 12-18 months.

## 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.

### 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.

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## 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 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.

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 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.

## Results of Operations

Year Ended December 31, 2007 vs. December 31, 2006

### Revenues

Total revenues for the year ended December 31, 2007 were approximately \$12,992,000, as compared to revenues of \$15,654,000 for the comparable prior year, a decrease of approximately \$2,662,000, or 17.0%.

North American sales for the year ended December 31, 2007 decreased to approximately \$7,848,000, a 9.10% decrease, as compared to sales of approximately \$8,636,000 for the year ended December 31, 2006. The decrease in North American sales was principally due to a decrease in the sale of machines of approximately \$161,000, and a decrease in the sale of spare parts of approximately \$627,000. The overall decrease in sales of spare parts was largely attributable to a rescheduling of the shipment schedule for spare parts under an existing supply order from a customer ("the Customer"). During the three months ended June 2007, the Customer notified us that it was rescheduling the spare parts delivery under an existing order and lengthening the shipping schedule from its original conclusion date in December, 2007 to a new conclusion date in June, 2008. As a result, there has been a reduction in spare parts purchases from the customer of approximately \$1,139,000 for the year ended December 31, 2007.

Foreign sales were approximately \$5,144,000 for the year ended December 31, 2007, compared to \$7,018,000 for the year ended December 31, 2006, a decrease of \$1,874,000, or 26.7%. The decrease in foreign sales was principally due to a decrease in the sale of machines of approximately \$1,668,000, both to customers in Europe and in Asia, and a decrease in the sale of spare parts of approximately \$206,000.

### Cost of Goods Sold

Cost of goods sold for the year ended December 31, 2007 was approximately \$5,646,000, or 43.46% of revenue, compared to \$7,001,000, or 44.72% of revenue, for the comparable prior year. The decrease in cost of goods sold in absolute dollars for the year ended December 31, 2007 reflects the overall decrease in sales. Our major product lines have different profit margins, as well as multiple profit margins within each product line. The decrease in cost of goods sold as a percentage of sales is attributable to both a decrease in sales by our distributors in Canada and Japan, who purchase machines and spare parts at a discount, and an increase in the average sales price per unit compared to the previous year.

### Research and Development Expenses

Research and development expenses for the year ended December 31, 2007 were approximately \$1,863,000, compared to \$1,763,000 for the comparable prior year, an increase of approximately \$100,000, or 5.67%. The increase in research and development expenses was primarily due to a planned increase in payroll and related costs of \$40,000, an increase in development costs related to product enhancement costs of approximately \$37,000, and an increase in consultant's costs of approximately \$40,000, partially offset by a decrease in test supply costs of approximately \$15,000.

### Selling Expenses

Selling expenses for the year ended December 31, 2007 were approximately \$3,584,000, compared to \$2,985,000 for the comparable prior year, an increase of \$599,000, or 20.1%. The increase is primarily attributable to an increase in outside commissions of approximately \$272,000, a planned increase in payroll and related costs of approximately \$86,000, an increase in advertising expenses of approximately \$65,000, an increase in travel & entertainment expenses of approximately \$50,000 and an increase in occupancy costs of approximately \$36,000.

The significant increase in commission expense results from an increase in the sale of machines and spare parts by commissioned direct sales personnel and indirect sales representatives, with a decrease in non-commissionable sales, primarily to a major customer and distributors in Canada and Japan. Commissionable sales were 75.1% of total sales for the year ended December 31, 2007, versus 48.9% for the comparable period in 2006.

### General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2007, were approximately \$3,081,000, compared to \$2,701,000 for the comparable prior year, an increase of \$380,000, or 14.1%. The increase in general and administrative expenses is principally due to an increase in recruitment costs of approximately \$144,000, primarily in connection with the hiring of a new Chief Executive Officer, an increase in consulting costs of approximately \$140,000, principally due to the utilization of outside professionals to assist in our compliance with Sarbanes – Oxley regulations, an increase in public relations costs of approximately \$65,000, an increase in corporate expenses of approximately \$41,000, and an increase in occupancy costs of approximately \$40,000. The total increase was partially offset by a decrease in accounting and legal of approximately \$39,000. The increase in corporate expenses was principally due to our adoption of SFAS 123R as of January 1, 2006, and recognizing compensation expense in conjunction with share based payments to employees and directors for a total annual amount of \$155,000, versus \$130,000 for the year ended December 31, 2006.

### Interest Income and Expense

Interest expense for the year ended December 31, 2007 was approximately \$20,000 compared to \$35,000 for the comparable prior year, a decrease of approximately \$15,000, or 42.9%. The decrease is due to the net pay down of the line of credit and a reduction of the term loan with our lender.

Interest income for the year ended December 31, 2007 was approximately \$64,000 compared to \$50,000 for the comparable prior year, an increase of \$14,000, or 28.0%. The increase is due to the increase in cash available for investing.

### Income Tax Provision

The Company has incurred a three year cumulative year loss of \$1,219,000 from continuing operations for the period ended December 31, 2007, and in accordance with 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, 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.

The tax benefit or provision recognized for the year ended December 31, 2006 has been based upon changes in the valuation reserve for deferred taxes. For the year ended December 31, 2006, we recognized a tax benefit of approximately \$58,000.

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## Liquidity and Capital Resources

Currently, we require cash to fund our working capital needs. We fund our cash requirements primarily through operations and customer deposits. 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.

On November 14, 2008 we entered into the Agreement with, and sold the Debenture to, GSP. The Debenture accrues interest at nine percent (9.0%) payable quarterly. The Debenture is due and payable on the earlier to occur of (i) November 14, 2015 or (ii) the acceleration of the maturity of the 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 Debenture into shares of our common stock at a \$1.25 per share.

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. 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 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.

In connection with the 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.

On June 30, 2008, we entered into a Loan and Security Agreement (the "Domestic Loan Agreement") with a new lender, Silicon Valley Bank ("SVB"). 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 "Revolving Line of Credit").

The 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.

As of December 31, 2008, we did not have a credit line or bank facility in place.

As of December 31, 2008, we had approximately \$1,895,000 in cash and cash equivalents, compared to \$756,000 as of December 31, 2007. For the year ended December 31, 2008, we used cash from operations of approximately \$2,559,000 and an increase in account payables and accrued expenses to fund our net loss, our investment in

inventories, and increase in prepaid expenses, primarily due to the Financing costs, which was offset by a decrease in trade account receivables.

As of December 31, 2007, we had approximately \$756,000 in cash and cash equivalents, compared to \$1,860,000 as of December 31, 2006. For the year ended December 31, 2007, we used cash from operations of approximately \$1,040,000 to fund our net loss, our decrease in current liabilities, and an increase in inventories, partially offset by a decrease in trade receivables and prepaid expenses.

For the year ended December 31, 2008, we provided cash from financing activities of approximately \$4,728,000 primarily as a result of proceeds received upon issuance of \$5,000,000 of convertible debt. Borrowings under our bank lines in place during the year were paid off upon termination of the bank lines. For the year ended December 31, 2007, we provided cash from financing activities of approximately \$112,000 primarily as a result of draws on the revolver loan, the issuance of common stock for options exercised, and proceeds from stock issued from the employee stock purchase plan partially offset by repayments of our term loan. For the year ended December 31, 2006, we used cash from financing activities of approximately \$184,000 primarily as a result of repayments on our term loan, partially offset by the issuance of common stock for options exercised and from proceeds from stock issued from the employee stock purchase plan.

As of December 31, 2007, we maintained a revolving credit facility with Banknorth, N.A. (the "Lender") that provided us with a \$1,000,000, revolving credit line that was subject to repayment on demand by the Lender. As of December 31, 2007, our balance due was \$262,000 under our revolving credit line. We also had a \$1,000,000 four-year term loan, that had a balance of \$62,000 at December 31, 2007, which we paid in full as of March 4, 2008.

Under the terms of the loan agreement with Banknorth, two covenants had to be met on an annual basis. As of December 31, 2007, we were not in compliance with the debt service coverage ratio covenant of our credit facility with the Lender. On March 5, 2008, we obtained a waiver from the Lender for this covenant. The second covenant required us to have a senior debt no more than four times its capital base; this covenant was met for year end 2007.

Our contractual obligations as of December 31, 2008 are as follows:

Contractual Obligation	Total	Payment due by period			
		Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Convertible debt (1)	\$ 7,716	\$ 450	\$ 900	\$ 900	\$ 5,466
Operating leases	1,385	489	872	24	-
Purchase obligations (2)	52	52	-	-	-
	\$ 9,153	\$ 991	\$ 1,772	\$ 924	\$ 5,466

(1) Includes principal and interest payments, principal is due only at maturity unless called upon an event of default under the convertible debenture agreement.

(2) Purchase obligations consist of commitments for production materials and supplies.

Based on our current operating model we must achieve substantial future revenue and successfully implement substantial cost reductions, which we began in the first quarter of 2009, in order to meet our cash needs. Our revenues, together with our existing cash balance and the \$1,000,000 of senior bank financing we hope to obtain, should be sufficient to meet our working capital requirements for the next twelve months if our cost cutting is successful. However, if we do not achieve the revenues we need, or we are not able to properly implement required expense changes, or we do not receive the senior bank financing described, it is likely that we will face very substantial liquidity pressures that we may not be able to sustain. This concern is greatly increased by the fact that today's credit markets, coupled with our history of losses, make it possible that we would not be able to borrow additional funds beyond our senior bank line or obtain an alternative credit facility if we are unable to meet our plan.

#### 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.** We recognize revenue in accordance with Staff Accounting Bulletin ("SAB" No. 104, "Revenue Recognition in Financial Statements"). 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) collectibility 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 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 estimated 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. Commencing in May of 2006, we amended our warranty by limiting to a period of 90 days our warranty coverage on certain critical wear items. We are now selling more advanced processor production systems than past years that may require more costly parts.

## Recent Accounting Pronouncements

In May 2008, the Financial Accounting Standards Board (“FASB”) issued Statement of Financial Accounting Standards (“SFAS”) No. 162, “The Hierarchy of Generally Accepted Accounting Principles”. This new standard identifies the sources of accounting principles and framework for selecting the principles to be used in the preparation of financial statements of nongovernmental entities that are presented in conformity with generally accepted accounting principles (“GAAP”) in the United States (“the GAAP hierarchy”).

The FASB believes the GAAP hierarchy should be directed to entities because it is the entity (not its auditor) that is responsible for selecting accounting principles for financial statements that are presented in conformity with GAAP. Accordingly, the FASB concluded that the GAAP hierarchy should reside in the accounting literature established by the FASB and is issuing this statement to achieve that result. The new standard is effective 60 days following the Securities and Exchange Commission’s approval of the Public Company Accounting Oversight Board amendments to AU Section 411, “The Meaning of Present Fairly in Conformity With Generally Accepted Accounting Principles”, and it is not expected that this Statement will result in a change in our current practice.

In September 2006, the FASB issued Statement of Financial Accounting Standards (“SFAS”) No. 157, “Fair Value Measurements.” This new standard provides guidance for using fair value to measure assets and liabilities. The FASB believes SFAS No. 157 also responds to investors’ requests for expanded information about the extent to which companies measure assets and liabilities at fair value, the information used to measure fair value, and the effect of fair value measurements on earnings. SFAS No. 157 applies whenever other standards require (or permit) assets or liabilities to be measured at fair value but does not expand the use of fair value in any new circumstances. SFAS No. 157 is effective for fiscal years beginning after November 15, 2007

In February 2007, the FASB issued SFAS No. 159, “The Fair Value Option for Financial Assets and Financial Liabilities,” which provides companies with an option to report selected financial assets and liabilities at fair value. The objective of SFAS No. 159 is to reduce both complexity in accounting for financial instruments and the volatility in earnings caused by measuring related assets and liabilities differently. SFAS No. 159 establishes presentation and disclosure requirements designed to facilitate comparisons between companies that choose different measurement attributes for similar types of assets and liabilities and to more easily understand the effect of the company’s choice to use fair value on its earnings. SFAS No. 159 also requires entities to display the fair value of the selected assets and liabilities on the face of the balance sheet. SFAS No. 159 does not eliminate disclosure requirements of other accounting standards, including fair value measurement disclosures in SFAS No. 157. This Statement is effective as of the beginning of an entity’s first fiscal year beginning after November 15, 2007.

On January 1, 2008, we adopted both SFAS No. 157 and SFAS No. 159, neither of which had any material impact on our results of operations or financial position.

In December 2007, the FASB issued SFAS No. 160, “Noncontrolling Interests in Consolidated Financial Statements” (“SFAS No. 160”). SFAS No. 160 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. SFAS No. 160 is effective for fiscal years beginning after December 15, 2008. We expect to adopt SFAS No. 160 on January 1, 2009, and we do not expect it to have a material effect on operations.

## 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. We do not have significant exposure to fluctuations in foreign exchange rates.

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

Item 8. Financial Statements and Supplementary Data

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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 subsidiaries (formerly MFIC Corporation) as of December 31, 2008 and 2007 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years ended December 31, 2008. 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, 2008 and 2007 and the consolidated results of their operations and their cash flows for the three years ended December 31, 2008 in conformity with accounting principles generally accepted in the United States of America.

/S/ UHY LLP

Boston, Massachusetts  
March 30, 2009

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

	December 31,	
	2008	2007
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 1,895	\$ 756
Accounts receivable, net of allowance of \$44 and \$41 as of December 31, 2008 and 2007, respectively	2,181	2,582
Inventories	2,723	2,353
Prepaid and other current assets	320	281
<b>Total current assets</b>	<b>7,119</b>	<b>5,972</b>
Property and equipment, net	1,121	325
Other non-current assets	480	60
<b>Total assets</b>	<b>\$ 8,720</b>	<b>\$ 6,357</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Current maturities of long-term debt	\$ -	\$ 327
Accounts payable	986	129
Accrued expenses	1,233	725
Customer advances	436	409
<b>Total current liabilities</b>	<b>2,655</b>	<b>1,590</b>
Long-term liabilities:		
Convertible debt	4,625	-
<b>Total liabilities</b>	<b>7,280</b>	<b>1,590</b>
Stockholders' equity:		
Common stock; \$.01 par value; 20,000,000 shares authorized; 10,592,228 and 10,517,178 shares issued; 10,356,782 and 10,256,732 shares outstanding as of December 31, 2008 and 2007, respectively	106	105
Additional paid-in capital	18,042	17,378
Accumulated deficit	(16,039)	(12,028)
Treasury stock, 235,446 and 260,446 shares, at cost, as of December 31, 2008 and 2007, respectively.	(669)	(688)
<b>Total stockholders' equity</b>	<b>1,440</b>	<b>4,767</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$ 8,720</b>	<b>\$ 6,357</b>

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

## MICROFLUIDICS INTERNATIONAL CORPORATION

## Consolidated Statements of Operations

(in thousands, except share and per share amounts)

Years Ended December 31,

	2008	2007	2006
Revenues	\$ 14,871	\$ 12,992	\$ 15,654
Cost of sales	7,298	5,646	7,001
Gross profit	7,573	7,346	8,653
Operating expenses:			
Research and development	2,116	1,863	1,763
Selling	4,844	3,584	2,985
General and administrative	4,495	3,081	2,701
Total operating expenses	11,455	8,528	7,449
(Loss) income from operations	(3,882)	(1,182)	1,204
Interest expense	(154)	(20)	(35)
Interest income	25	64	50
(Loss) income before income tax provision	(4,011)	(1,138)	1,219
Income tax provision (benefit)	-	369	(58)
Net (loss) income	\$ (4,011)	\$ (1,507)	\$ 1,277
Net (loss) income per common share:			
Basic	\$ (0.39)	\$ (0.15)	\$ 0.13
Diluted	\$ (0.39)	\$ (0.15)	\$ 0.12
Weighted average number of common and common equivalent shares outstanding:			
Basic	10,296,296	10,183,376	10,012,685
Diluted	10,296,296	10,183,376	10,611,635

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

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

	Years Ended December 31,		
	2008	2007	2006
Cash flows from operating activities:			
Net (loss) income	\$ (4,011)	\$ (1,507)	\$ 1,277
Adjustments to reconcile net (loss) income to net cash flows:			
Income tax provision (benefit)	-	369	(68)
Depreciation and amortization	403	170	174
Allowance for doubtful accounts	3	3	(5)
Provision for obsolete inventory	(12)	8	9
Share-based compensation	252	218	141
Changes in assets and liabilities:			
Accounts receivable	398	668	(1,383)
Other current assets	-	-	(116)
Inventories	(358)	(335)	(185)
Prepaid expenses	(626)	56	61
Accounts payable	857	(118)	131
Accrued expenses	508	(128)	376
Customer advances	27	(444)	237
Net cash flows (used in ) provided by operating activities	(2,559)	(1,040)	649
Cash flows from investing activities:			
Purchase of property, plant and equipment	(1,030)	(176)	(57)
Net cash flows used in investing activities	(1,030)	(176)	(57)
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)	(288)
Payments on bank loan	(2,261)	-	-
Proceeds from issuance of convertible debt			
	5,000	-	-
Net proceeds from issuance of common stock	55	109	104
Net cash flows provided by (used in ) financing activities	4,728	112	(184)
Net change in cash and cash equivalents	1,139	(1,104)	408
Cash and cash equivalents at beginning of period	756	1,860	1,452
Cash and cash equivalents at end of period	\$ 1,895	\$ 756	\$ 1,860

Supplemental Disclosure of Cash Flow  
Information:

Interest received	\$	25	\$	63	\$	50
Interest paid		95		20		34
Taxes paid, net of refund		89		-		10
Non-cash item						
Issuance of warrants	\$	382	\$	-	\$	-

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

Microfluidics International Corporation  
Consolidated Statements of Changes in Stockholders' Equity

(in thousands)

(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	10,166	\$ 102	\$ 16,809	\$ (11,798)	260	\$ (688)	\$ 4,425
Issuance of common stock in connection with exercise of stock options	144	2	69				71
Issuance of common stock under employee stock purchase plan	29		33				33
Compensation expense related to stock options			130				130
Compensation expense related to director stock options	11		5				5
Compensation expense related to employee purchase plan			6				6
Net income				1,277			1,277
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)

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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

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

Microfluidics International Corporation  
Notes to Consolidated Financial Statements

1. Organization and Summary of Significant Accounting Policies

Organization

Microfluidics International Corporation (the “Company”), through its wholly-owned subsidiary, Microfluidics Corporation (“Microfluidics”), its operating division, operates in one segment, specializing in producing and marketing a broad line of proprietary fluid materials processing systems used for a variety of fluid grinding, mixing, milling, and blending applications across a variety of industries and for use in numerous applications within those industries. Microfluidizer materials processor systems are produced at Microfluidics.

Management's Plans

For the year ended December 31, 2008, the Company incurred net losses of \$4.0 million and generated negative cash flow from operations of \$2.6 million. 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 \$1.9 million of cash and cash equivalents and \$5 million of long-term debt as of December 31, 2008. 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, when required, the issuance of various debt and equity instruments. 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 become 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 subsidiaries. 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.

Reclassification

Certain prior years account balances have been reclassified to be consistent with the current year's presentation.

Revenue Recognition

The company recognizes revenue in accordance with Staff Accounting Bulletin (“SAB” No. 104, “Revenue Recognition in Financial Statements”). 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 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 accumulated depreciation are removed from the accounts and any resulting gain, or loss is credited or charged to operations.

Microfluidics International Corporation  
Notes to Consolidated Financial Statements

Long-Lived Assets

In accordance with Statements of Financial Accounting Standards (“SFAS”) No.144, “Accounting for the Impairment or Disposal of 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.

Other Non-Current Assets

Other long term assets include financing costs associated with the issuance of our convertible debenture 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 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, in accordance with APB Opinion No. 14, Accounting for Convertible Debt and Debt Issued with Stock Purchase Warrant (“APB 14”). 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 “Debenture”), management determined that the conversion feature of the 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 SFAS 133, Accounting for Derivative Instruments and Hedging Activities (as amended) and therefore the conversion feature will 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 of the sale. Commencing in May of 2006, the Company amended its warranty by limiting to a period of 90 days its warranty coverage on certain critical wear items. We believe the reserve balances in the amount of \$71,000 and \$54,000 as of December 31, 2008 and December 31, 2007, respectively, to be adequate.

Research and Development Expenses

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

### Earnings (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 1,284,682, 1,585,427, and 1,561,086 shares of common stock were outstanding for the years ended December 31, 2008, 2007, and 2006, respectively. Basic and diluted net loss per share is \$.39 and \$.15, for the years ended December 31, 2008 and 2007, respectively. Basic and diluted net income per share is \$.13 and \$.12 respectively for the year ended December 31, 2006.

### 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's bank debt, because it carries a variable interest rate, is stated at its approximate fair market value.

### 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 FAS Interpretation No. 48, "Accounting for Uncertainty in Income Taxes" (FIN 48), which supplements SFAS No. 109, by defining the confidence level that a tax position must meet in order to be recognized in the financial statements. FIN 48 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 FIN 48, the Company is required to adjust their financial statements to reflect only those tax positions that are "more likely than not" to be sustained.

The Company has incurred a three year cumulative year loss for the period ended December 31, 2008, and in accordance with 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 has not recorded a tax provision or benefit. 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 in prior years. For the year ended December 31, 2006, we recognized a tax benefit of approximately \$58,000, based upon changes in the valuation reserve for deferred tax asset accounts.

Stock-Based Compensation

Effective January 1, 2006, the Company adopted the fair value recognition provisions of SFAS No. 123R. For the years ended December 31, 2008, and 2007, the Company recognized stock-based employee compensation expense of approximately \$233,000 and \$215,000 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.

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The Company has a 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, 2008.

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.

The fair value of each option granted during the years ended December 31, 2008, 2007 and 2006 is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	Years Ended December 31,		
	2008	2007	2006
Dividend yield	None	None	None
Expected volatility	230%	104%	116%
Risk-free interest rate	1.55%	3.62%	4.85%
Expected life	5 years	5 years	5 years
Fair value of options granted	\$ 0.84	\$ 1.16	\$ 1.25

**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.

**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 \$680,800 at December 31, 2008.

#### Recent Accounting Pronouncements

In May 2008, the Financial Accounting Standards Board (“FASB”) issued Statement of Financial Accounting Standards (“SFAS”) No. 162, “The Hierarchy of Generally Accepted Accounting Principles”. This new standard identifies the sources of accounting principles and framework for selecting the principles to be used in the preparation of financial statements of nongovernmental entities that are presented in conformity with generally accepted accounting principles (“GAAP”) in the United States (“the GAAP hierarchy”).

The Financial Accounting Standards Board (“FASB”) believes the GAAP hierarchy should be directed to entities because it is the entity (not the auditor) that is responsible for selecting accounting principles for financial statement that are presented in conformity with GAAP. Accordingly, the FASB concluded that the GAAP hierarchy should reside in the accounting literature established by the FASB and is issuing this statement to achieve that result. The new standard is effective 60 days following the Securities and Exchange Commission’s approval of the Public Company Accounting Oversight Board amendments to AU Section 411, “The Meaning of Present Fairly in conformity With Generally Accepted Accounting Principles”, and it is not expected that this Statement will result in a change in our current practice.

In September 2006, the FASB issued Statement of Financial Accounting Standards (“SFAS”) No. 157, “Fair Value Measurements.” This new standard provides guidance for using fair value to measure assets and liabilities. The FASB believes SFAS No. 157 also responds to investors’ requests for expanded information about the extent to which companies measure assets and liabilities at fair value, the information used to measure fair value, and the effect of fair value measurements on earnings. SFAS No. 157 applies whenever other standards require (or permit) assets or liabilities to be measured at fair value but does not expand the use of fair value in any new circumstances. SFAS No. 157 is effective for fiscal years beginning after November 15, 2007

In February 2007, the FASB issued SFAS No. 159, “The Fair Value Option for Financial Assets and Financial Liabilities,” which provides companies with an option to report selected financial assets and liabilities at fair value. The objective of SFAS No. 159 is to reduce both complexity in accounting for financial instruments and the volatility in earnings caused by measuring related assets and liabilities differently. SFAS No. 159 establishes presentation and disclosure requirements designed to facilitate comparisons between companies that choose different measurement attributes for similar types of assets and liabilities and to more easily understand the effect of the company’s choice to use fair value on its earnings. SFAS No. 159 also requires entities to display the fair value of the selected assets and liabilities on the face of the balance sheet. SFAS No. 159 does not eliminate disclosure requirements of other accounting standards, including fair value measurement disclosures in SFAS No. 157. This Statement is effective as of the beginning of an entity’s first fiscal year beginning after November 15, 2007.

On January 1, 2008, we adopted both SFAS No. 157 and SFAS No. 159, neither of which had any material impact on our results of operations or financial position.

In December 2007, the FASB issued SFAS No. 160, “Noncontrolling Interests in consolidated Financial Statements” (“SFAS No. 160”). SFAS No. 160 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. SFAS No. 160 is effective for fiscal years beginning after December 15, 2008. We expect to adopt SFAS No. 160 on January 1, 2009, and we do not expect it to have a material effect on operations.



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Notes to Consolidated Financial Statements

## 2. Industry Segment, Geographic and Enterprise-Wide Reporting

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 SFAS No. 131, 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 chemical, pharmaceutical, food, cosmetic, and biotechnology 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:

	Years Ended December 31,		
(in thousands)	2008	2007	2006
North America	\$ 7,423	\$ 7,848	\$ 8,636
Asia	2,478	2,800	3,525
Europe	4,970	2,344	3,493
	\$ 14,871	\$ 12,992	\$ 15,654

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

In 2008, sales to one of 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. In 2006, sales to the same two customers were \$1,494,000 and \$2,345,000, which accounted for 9.6% and 15.2% 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 2008, 2007 and 2006. 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 49.9% of our revenues in 2008; 60.4% of our revenues in 2007; and 55.2% of our revenues in 2006 with almost all of those sales coming from the United States and Canada. Sales to the rest of the world accounted for approximately 50.1% of our revenues in 2008; 39.6% of our revenues in 2007; and 44.8% of our revenues in 2006.

## 3. Inventories

Inventories consist of the following:

(in thousands)	December 31,	
	2008	2007
Raw materials	\$ 2,485	\$ 2,140
Work-in progress	63	63
Finished goods	371	358
	2,919	2,561
Less: provision for excess inventory	(196)	(208)
Inventories, net	\$ 2,723	\$ 2,353

#### 4. Property and Equipment

Property and equipment consist of the following:

(in thousands)	December 31,	
	2008	2007
Furniture, fixtures and office equipment	\$ 893	\$ 686
Machinery, equipment and tooling	505	455
Leasehold improvements	869	96
	2,267	1,237
Less: accumulated depreciation and amortization	(1,146)	(912)
Property and equipment, net	\$ 1,121	\$ 325

Depreciation expense for property and equipment for the years ended December 31, 2008, 2007 and 2006 was approximately \$174,000, \$154,000, and \$160,000, respectively.

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5. Other Non-Current Assets

Costs incurred in connection with the financing of the convertible debenture and issuance of common stock warrants on November 14, 2008, totaling \$428,000, are being amortized over the life of the debenture, which is seven years. 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, \$10,000 and \$8,000 for the years ended December 31, 2008, 2007 and 2006, 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, 2008, 2007 and 2006 was approximately \$6,000 each year.

6. Accrued Expenses

Accrued expenses consist of the following:

(in thousands)	December 31,	
	2008	2007
Accrued expenses	\$ 549	\$ 273
Accrued wages and vacation pay	360	164
Accrued commissions	253	234
Accrued warranty	71	54
	\$ 1,233	\$ 725

7. Long-term Debt and Obligations Under Capital Lease

Long-term debt and obligations under capital lease consist of the following:

(in thousands)	December 31,	
	2008	2007
Convertible debt, (net of discount of \$375,156)	\$ 4,625	\$ -
Term loan	-	62
Obligations under capital lease	-	3
	4,625	65
Less: current portion	-	(65)
Long-term debt, net of current portion	\$ 4,625	\$ -

On November 14, 2008, the Company issued the Debenture to GSP, which will be convertible into the Company's common stock, par value \$0.01 per share. The principal of the Debenture will mature and be payable on November 14, 2015. Interest on the Debenture is payable quarterly. Upon occurrence of certain events of default, as defined in the Debenture, all amounts will be immediately due and payable. The Debenture is secured by all assets, property rights and interests of the Company. It shall be senior to all other indebtedness of the Company, except for certain bank guarantees as defined in the Debenture.

On March 1, 2004, the Company and its Microfluidics Corporation subsidiary, as co-borrowers, entered into a revolving credit and term loan agreement with Banknorth N.A. (the "Lender"), providing the Company with a \$2,000,000 demand revolving credit and four year term loan facility (the "Credit Facility"). The Credit Facility was comprised of (i) a \$1,000,000 demand revolving line of credit (the "Revolving Credit Line"), and (ii) a \$1,000,000 four year term promissory note (the "Term Loan").

At December 31, 2007, the Company was not in compliance with the debt coverage ratio, and required a waiver from the Lender, which was granted on March 5, 2008.

Due to the subjective acceleration clause and the lock-box arrangement with the Lender, the Revolving Credit Line is classified as a current liability, as of December 31, 2007, in the consolidated balance sheet.

On June 30, 2008, the Company repaid 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 June 30, 2008, the Company entered into a Loan and Security Agreement with a new lender, Silicon Valley Bank ("SVB"). On July 2, 2008, the Company and SVB entered into an Export-Import Bank Loan and Security Agreement and together with the Domestic Loan Agreement, created the "SVB Loan Agreement". The SVB Loan Agreement provided the Company with a revolving line of credit.

In connection with the Convertible Debenture 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.

## 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 \$21,000 for the year ended December 31, 2008. The Company made no matching contributions during the years ended December 31, 2007 and 2006. The Company also instituted a cafeteria plan in 1992, giving the employees certain pre-tax advantages on specific payroll deductions.

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9. Income Taxes

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

(in thousands)	Years Ended December 31,			
	2008	2007	2006	2005
<b>Current:</b>				
Federal	\$ -	\$ -	\$ 21	\$ -
State	-	-	10	-
Foreign	-	-	15	-
	\$ -	\$ -	\$ 46	\$ -
<b>Deferred:</b>				
Federal	\$ -	\$ 312	\$ (88)	\$ (345)
State	-	57	(16)	(105)
Foreign	-	-	-	-
	\$ -	\$ 369	\$ (104)	\$ (450)

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. The amount reported as an income tax benefit for the year ended December 31, 2006 is the result of a decrease to the valuation allowance reserve that was recorded against the Company's deferred tax assets.

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,		
	2008	2007	2006
Federal income tax at statutory rate	34.0%	34.0%	34.0%
State income taxes, net of federal benefits	5.8%	5.3%	6.3%
Foreign	-2.4%	-2.0%	0.0%
Permanent adjustments	-2.4%	-5.4%	4.2%
Net research and development and other tax credits	-0.4%	-5.0%	0.0%
Valuation allowance	-34.8%	-58.7%	-50.9%
Other	0.2%	-0.6%	1.6%
Effective tax rate	0.0%	-32.4%	-4.8%

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

(in thousands)	December 31,	
	2008	2007
<b>Deferred tax assets:</b>		
Net operating loss carry forwards	\$ 4,388	\$ 3,384

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Research and development and other credits	50	66
Accruals and allowances not currently deductible for tax purposes	211	168
Depreciation and other	111	103
Valuation allowance	(4,760)	(3,721)
Total deferred tax assets	\$ -	\$ -

As of December 31, 2008, the Company has available federal net operating loss carry forwards for income tax purposes of approximately \$10,772,000 and state net operating loss carry forwards of approximately \$4,025,000, which expire at various dates through 2028, federal research and development credit carry forwards of approximately \$50,000 expiring in varying amounts during the period through 2021. 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.

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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, 2008. In accordance with SFAS 109, a three year 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, 2008.

## 10. Stockholders' Equity

### Warrants

On November 14, 2008, pursuant to the Agreement, the Company issued the Debenture to GSP, which will be convertible into the Company's common stock, par value \$0.01 per share. The principal of the Debenture will mature and be payable on November 14, 2015. Interest on the Debenture is payable quarterly. Upon occurrence of certain events of default, as defined in the Debenture, all amounts will be immediately due and payable. The Debenture is secured by all assets, property rights and interests of the Company. It shall be senior to all other indebtedness of the Company, except for certain bank guarantees as defined in the Debenture.

GSP has the right to convert all or part of the outstanding principal and interest amount of the Debenture into shares of the Company's common stock on any of the maturity date, the date that any interest payment is due, or the date on which a change of control occurs. The conversion price will be \$1.25 per share as adjusted with certain anti-dilution adjustments. Upon conversion of the Debenture, the related accrued and unpaid interest, if any, shall become immediately due and payable.

In addition, the Company granted to GSP the Warrant, giving GSP the right to purchase shares of the Company's common stock constituting up to 50% of the Company's outstanding common stock on a fully diluted basis at exercise prices ranging from \$2.00 - \$3.00. The Warrant has a term of the earlier to occur of: (i) the seventh anniversary of the date of the Agreement, (ii) the Third Anniversary or (iii) such time as GSP has acquired fifty percent (50%) of the total number of shares of the Company's common stock then outstanding on a fully diluted basis.

In accordance with APB 14, the Company allocated the proceeds of the Debenture to the 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 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:

Face amount of Notes	\$ 5,000,000
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Less unamortized discount	375,156
Carrying value at December 31, 2008	\$ 4,624,844

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

#### 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 ½ 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 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.

#### 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 20,409, 27,864, and 29,183 in 2008, 2007 and 2006, respectively.



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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, increased by the number of shares of common stock underlying unexercised options issued under either the 1988 Plan or the 1989 Plan (together, the “Prior Plans”) that expired after June 20, 2006, and decreased by the number of shares of common stock issued and issuable pursuant to options outstanding under 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, 2008, approximately 836,000 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, 2008, the Company issued approximately 433,000 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 679,000 shares were forfeited and approximately 56,000 shares were vested during the year ended December 31, 2008.

Although the Stock Option Plans do not provide for cashless exercise, the administrator of the Stock Option Plan allowed the former Chairman and Chief Executive Officer during the three months ended June 30, 2007 and a former director during the nine months ended September 30, 2006, to transact a cashless exercise of stock options granted. The cashless exercise allows the former employee/director to not tender any cash or shares in an option exercise. Rather, the employer withholds the number of shares with a fair value equal to the option exercise price from the shares that would otherwise be issued upon exercise.

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. Also, during the year ended December 31, 2006, the Company issued 10,548 shares of common stock pursuant to cashless exercise of options granted of 15,000 shares on the Company’s common stock. Since the stock Option Plans do not 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 and a former director. Accordingly, for the years ended December 31, 2007, and 2006, the Company recorded compensation expenses of approximately \$61,000, and \$5,000, respectively. These amounts were charged to General and Administrative expenses in the consolidated statements of operations.

Activity under the Plans is as follows:

Years Ended December 31,		
2008	2007	2006

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	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	1,585,427	\$ 1.35	1,561,086	\$ 1.45	1,718,925	\$ 1.37
Granted	432,577	1.06	376,982	1.16	58,412	1.24
Cancelled	(678,681)	1.21	(213,139)	2.18	(62,052)	2.03
Exercised	(54,641)	0.42	(139,502)	0.66	(154,199)	0.49
Outstanding at end of period	1,284,682	\$ 1.37	1,585,427	\$ 1.35	1,561,086	\$ 1.45
Exercisable at end of period	550,646	\$ 1.59	1,134,678	\$ 1.35	1,321,735	\$ 1.32

Summarized information about stock options outstanding as of December 31, 2008 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 - \$ \$0.95	195,555	4.1	\$ 0.96	182,825	\$ 0.46
1.00 - \$1.95	910,865	8	1.74	192,271	1.81
2.06 - \$4.25	178,262	4.7	4.63	175,550	2.51
0.30 - \$4.25	1,284,682	5.6	1.37	550,646	1.59

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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, 2008 are:

Years Ended December 31	(in thousands)
2009	\$ 489
2010	473
2011	400
2012	24
2013	-
Thereafter	-
Total lease payments	\$ 1,386

Rent expense for the years ended December 31, 2008, 2007, and 2006, was approximately \$509,000, \$498,000 and \$415,000, respectively. A portion of the Newton, Massachusetts rented 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

On December 20, 1999 the Company signed an agreement in principle (the "Agreement") with the former owners (the "Sellers"); including entities controlled by the Sellers, of the Epworth Mill and Morehouse-COWLES businesses (the "Sellers"). The Agreement set forth the understandings among the parties concerning a restructuring of the Company's subordinated debt and resolution of various disputes at that time. On January 17, 2000, a definitive settlement agreement incorporating these subject matters was executed between the parties (the "Settlement Agreement"). In connection with the Settlement Agreement, a \$300,000 subordinated note was replaced with a new \$300,000 subordinated promissory note dated February 28, 2000 (the "2000 Subordinated Note"). The 2000 Subordinated Note had a maturity date of February 28, 2005, bearing interest at a rate of ten percent (10%) per annum. The final principal payment on the 2000 Subordinated Note was made on January 25, 2005 in the approximate amount of \$6,000, including accrued interest.

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.

(in thousands, except share and per share data)	Year Ended December 31, 2008			
	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4

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Revenues	\$	3,522	\$	4,374	\$	3,511	\$	3,464
Gross profit		1,913		2,149		1,803		1,708
Loss before income tax provision		(445)		(790)		(1,061)		(1,715)
Income tax provision		-		-		-		-
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)

Year Ended December 31, 2007

	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Revenues	\$ 2,801	\$ 3,557	\$ 2,311	\$ 4,323
Gross profit	1,608	2,104	1,193	2,441
(Loss) income before income tax provision	(417)	(107)	(859)	245
Income tax provision	-	-	-	369
Net loss	(417)	(107)	(859)	(124)
Net loss per share:				
Basic loss per share	\$ (0.04)	\$ (0.01)	\$ (0.08)	\$ (0.02)
Diluted loss per share	\$ (0.04)	\$ (0.01)	\$ (0.08)	\$ (0.02)

Microfluidics International Corporation  
Notes to Consolidated Financial Statements

15. Valuation and Qualifying Accounts:

(in thousands)	Balance at Beginning of Period	Additions Charged to Costs and Expenses	Deductions and Adjustments	Balance at End of Period
<b>Allowance for Doubtful Accounts:</b>				
For the year ended December 31, 2008	\$ 41	\$ 3	\$ -	\$ 44
For the year ended December 31, 2007	38	6	(3)	41
For the year ended December 31, 2006	43	9	(14)	38
<b>Inventory Reserve:</b>				
For the year ended December 31, 2008	\$ 208	\$ -	\$ (12)	\$ 196
For the year ended December 31, 2007	200	8	-	208
For the year ended December 31, 2006	185	15	-	200
<b>Warranty Reserve:</b>				
For the year ended December 31, 2008	\$ 54	\$ 17	\$ -	\$ 71
For the year ended December 31, 2007	74	14	(34)	54
For the year ended December 31, 2006	58	16	-	74

Microfluidics International Corporation  
Notes to Consolidated Financial Statements

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 chief financial 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, chief financial officer and controller, evaluated the effectiveness of the Company's disclosure controls and procedures as of December 31, 2008. 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, chief financial officer and controller, 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, 2008, the Company's chief executive officer, chief financial officer, and controller 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 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, chief financial officer and controller, conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2008 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, 2008, 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, 2008 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

#### Item 9B. Other Information

None.

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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 or will be filed as an amendment to our Form 10-K 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 or will be filed as an amendment to our Form 10-K 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 or will be filed as an amendment to our Form 10-K 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 or will be filed as an amendment to our Form 10-K within 120 days of our fiscal year end.

Item 14. Principal Accounting Fees and Services

Audit Fees

During the years ended December 31, 2008 and 2007, UHY LLP (“UHY”), was paid approximately \$110,000 and \$101,000, respectively for services rendered for the audit of our annual financial statements and review of financial statements included in our reports on Form 10-Q or services that are normally provided by UHY in connection with statutory and regulatory filings or engagements for those fiscal years. All services were approved by the Audit Committee.

Audit Related Fees

During the years ended December 31, 2008 and 2007, UHY Advisors was paid approximately \$24,000 and \$26,000, respectively, for assurance and related services that are reasonably related to the performance of audit or review of our financial statements and are not reported under Item 9(e)(1) of our definitive proxy statement. All services were approved by the Audit Committee.

Tax Fees

During the years ended December 31, 2008 and 2007, UHY was paid approximately \$ 26,000 and \$11,000, respectively, for tax compliance, tax advice and tax planning services. The tax fees were related to the preparation of the corporate tax returns. All tax services were approved by the Audit Committee.

All Other Fees

During the years ended December 31, 2008 and 2007, UHY received no payments for non-audit services.

The Audit Committee pre-approves audit and non-audit services provided to us by the independent auditors (or subsequently approves non-audit services in those circumstances where a subsequent approval is necessary and permissible).

The Audit Committee has considered whether the provision of non-core audit services to us by our principal auditor is compatible with maintaining independence, and has affirmed, in each instance, that the provision of such service was compatible with the principal auditor's independent role.

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Notes to Consolidated Financial Statements

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Financial Statements

The following Consolidated Financial Statements are included in Item 8:

	Page
Report of Independent Registered Public Accounting Firm	21
Consolidated Balance Sheets as of December 31, 2008 and 2007	22
Consolidated Statements of Operations for the Three Years Ended December 31, 2008	23
Consolidated Statements of Cash Flows for the Three Years Ended December 31, 2008	24
Consolidated Statements of Changes in Stockholders' Equity for the Three Years Ended December 31, 2008	25
Notes to Consolidated Financial Statements	26-35

Microfluidics International Corporation  
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(b) Exhibit Index

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)	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).
4.1	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).
4.2	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).
10.19	Asset Purchase Agreement, dated as of June 19, 1998, by and among the Company, Epworth Manufacturing Company and Morehouse-COWLES, Inc. (filed as Exhibit 2.1 to Schedule 13D of Bret A. Lewis, File No. 005-35850, and incorporated herein by Reference).
10.20	Stockholders Agreement, dated August 14, 1998, by and among the Company and J.B. Jennings and Bret A. Lewis (filed as Exhibit 2.2 to Schedule 13D of Bret A.

- Lewis, File No. 005-35850, and incorporated herein by reference).
- 10.21 \$500,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, and incorporated herein by reference).
- 10.22 \$300,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, 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 JLJ 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.)
- 10.42 Lease for 30 Ossipee Road, Newton, Massachusetts dated October 19, 2001, between Microfluidics International 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 10.47 to the Company's Annual Report on Form 10-K for the fiscal year ended December 21, 2001, 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.)
- 10.49 Third Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank N.A. dated February 19, 2003. (Filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002, and incorporated herein by reference)
- 10.50 Fourth Amendment and Waiver to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated February 6, 2004 (filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.51 Asset Purchase Agreement dated February 5, 2004, by and among MFIC Corporation and Morehouse Cowles, Inc. (filed as Exhibit 2 to the Company's Form 8K dated February 13, 2004, 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).
- 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).
- 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).
- 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).
- 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 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 Debenture and Warrant Purchase Agreement and Amendment No. 1 to 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 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).
- 14 Code of Ethics, as adopted by the Company (Filed as Exhibit 14 to the Company's Form 10-K dated December 31, 2006, 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.

Microfluidics International Corporation  
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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Newton, Commonwealth of Massachusetts, on the 30th day of March, 2009.

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
/s/ Michael C. Ferrara Michael C. Ferrara	President, Chief Executive Officer & Director (principal executive officer)	March 30, 2009
/s/ Brian E. LeClair Brian E. LeClair	Executive Vice-President and Chief Financial Officer (principal financial and accounting officer)	March 30, 2009

/s/ James N. Little

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James N. Little	Director	March 30, 2009
	Chairman of the Board of Directors	
/s/ Leo Pierre Roy Leo Pierre Roy	Director	March 30, 2009
/s/ George Uveges George Uveges	Director	March 30, 2009
/s/ Eric G. Walters Eric G. Walters	Director	March 30, 2009

