



FOR IMMEDIATE RELEASE

December 9, 2008

## **Micromem Technologies Inc. Provides Technology Update**

*Company Surpasses Several Tech Milestones As It Enters Revenue Phase*

**Highlights Include: BAE Completion of Manufacturer of Wafers; TAOS Third Party Validation of Magnetic Sensors; and 3-D Manufacturing “Paper Printing” Process**

TORONTO, NEW YORK December 9, 2008 - [Micromem Technologies Inc.](#) (OTCBB: MMTIF), and its wholly owned U.S. subsidiary, Micromem Applied Sensor Technologies, Inc. (MASTInc), issues a technology update, focusing on recent product innovation, life cycle testing, and client contract support.

### **I. Product Innovation**

1. Micromem recently announced an industry-first design of an 80 x 80 dense array of its patented magnetic sensors, which the company believes to be the largest array of its kind ever developed. The sensor’s small footprint and very low cost per element enables Micromem to produce such a large array. The company responded to many of the applications that clients are requesting, which require customized dense arrays of magnetic sensors that dramatically enhance the limits of today’s generation of device sensitivity, at a lower cost per pixel for data acquisition. This array will be made available to Micromem’s current evaluation clients for performance evaluation testing starting January 2009.
2. [Global Communications Semiconductor, Inc.](#) has manufactured Micromem’s first array of MRAM. Full performance memory testing is ongoing and memory samples will be available to clients in late December 2008.
3. [BAE Systems](#), one of the largest defense companies in the world, has completed manufacturing of Micromem’s wafers and will deliver its initial products for third party validation and testing in December 2008. The BAE Systems wafers include both memory arrays and magnetic sensors. These wafers include Micromem’s patented technology manufactured on Department of Defense grade gallium arsenide substrate.

### **II. Life Cycle Testing**

1. [Texas Advanced Optical Systems](#) (TAOS), leading developers, manufacturers, and marketers of integrated optoelectronic product, has completed third party

validation testing of Micromem's patented magnetic sensors. TAOS has validated that the sensor performs as well as or better than Micromem's published product data sheet. The partnership could bring a significant distribution opportunity to Micromem, as TAOS has a large-scale global network of clients. As the relationship matures, Micromem intends on using TAOS as its distribution partner to deliver product worldwide.

## **II. Client Contract Support**

1. Norwegian EM Technology AS of Norway has begun testing of Micromem's magnetic sensors for integration into an application that involves natural resource exploration of minerals and oils. The company plans to map the small perturbations in the earth's magnetic field.
2. MASTInc, has completed an agreement with Nth Degree of Arizona to investigate integration of its disruptive next generation electronics manufacturing technology. Nth-Degree has developed a statistical manufacturing printing process for rendering electronics using printing technologies with conductive inks. MASTInc plans to further reduce its product feature size and incorporate Micromem's magnetic sensors into Nth Degree's electronic inks, which will then be integrated into mass production applications for producing electronic circuits via a printing process. MASTInc considers this technology as an innovative way to reliably mass-produce extremely dense sensor arrays at very low cost with very high accuracy. One of the problems facing arrayed electronics is to interconnect the massive number of electronic elements within a solution. With Nth Degree's technology, Micromem's solution will be printed, not placed, not unlike a conventional paper machine operation. This statistical 3-D manufacturing process will allow Micromem to produce extremely high density low cost customized sensor arrays that will provide many customers with a highly reliable solution for current unmet and outstanding application needs in the military, homeland security, and medical diagnostic fields.

"As the company moves into its revenue phase, our client commitment has accelerated the technological timeline resulting in these very positive milestones," said Steven Van Fleet, MASTInc President. "Given the developments outlined here, this is a very exciting time for the company. We are pleased to offer these updates and look forward to making further updates available to our shareholders as we continue along our technology roadmap."

### **About Micromem and MASTInc**

MASTInc is a wholly owned U.S.-based subsidiary of Micromem Technologies Inc., a publicly traded (OTC: MMTIF) fabless semiconductor company with headquarters in Toronto, Canada and an office in New York City. Micromem holds and continues to develop a broad-based patent portfolio of Magnetoresistive Random Access Memory (MRAM) and magnetic sensor technologies. Micromem's MRAM patents create a

solution for performance driven, radiation hard, non-volatile memory applications. MASTInc is focused on business development efforts and is working on the launch of sensory products for use in both defense and consumer applications. Its first product, GC-0301, is far superior to the competition with over 200 V/T, making it one of the most sensitive hall sensors on the market without the need for external amplification. MASTInc is working with companies that have large-scale capabilities and expects to sign contracts in the coming quarters.

### **Safe Harbor Statement**

This press release contains forward-looking statements. Such forward-looking statements are subject to a number of risks, assumptions and uncertainties that could cause the Company's actual results to differ materially from those projected in such forward-looking statements. In particular, factors that could cause actual results to differ materially from those in forward looking statements include, our inability to obtain additional financing on acceptable terms, risk that our products and services will not gain widespread market acceptance; continued consumer adoption of digital technology, inability to compete with others who provide comparable products, the failure of our technology, inability to respond to consumer and technological demands, inability to replace significant customers; seasonal nature of our business and other risks detailed in our filings with the Securities and Exchange Commission. Forward-looking statements speak only as of the date made and are not guarantees of future performance. We undertake no obligation to publicly update or revise any forward-looking statements. When used in this document, the words "believe," "expect," "anticipate," "estimate," "project," "plan," "should," "intend," "may," "will," "would," "potential," and similar expressions may be used to identify forward-looking statements.

### **Listing: NASD OTC-Bulletin Board - Symbol: MMTIF**

Shares issued: 83,186,667

SEC File No: 0-26005

### **Contact:**

The Investor Relations Group, Inc.

(212) 825-3210

Adam Holdsworth – James Carbonara

or

Public Relations

Susan Morgenbesser – Andrew Conn