FOR IMMEDIATE RELEASE

Extensive Market Opportunities for MASTInc Applications Documented by Frost & Sullivan Report

TORONTO & NEW YORK, February 17, 2009 — Micromem Technologies Inc., (OTC BB: MMTIF, CNSX: MRM) through its wholly owned U.S. based subsidiary Micromem Applied Sensor Technologies, Inc. (MASTInc) has validated significant and multiple opportunities to create game-changing applications that address unmet market needs. MASTInc today released the results of a report conducted by Frost & Sullivan (www.frost.com), a leading research and consulting firm. Utilizing magnetic sensor applications, MASTInc (www.mastinc.com) successfully powers the development and implementation of innovative solutions for healthcare/biomedical, natural resource exploration, government/defense, information technology, manufacturing, and other industries.

"Emanating from one of the most prestigious research organizations, this report specifically articulates the potential for MASTInc.'s advanced sensor solutions to meet the needs of geophysical exploration companies and medical/healthcare enterprises," says Steven Van Fleet, President of MASTInc. "This document confirms that partnerships with MASTInc may lead to the development of medical devices that will transform global healthcare delivery as well as improvements in the accuracy, sensitivity and productivity of natural resource exploration. We are catalyzing innovation and advancement across a broad spectrum of industries and sectors -- finding answers to previously unsolvable problems."

Frost and Sullivan reports that specific markets sectors for MASTInc sensors include mineral exploration, hearing aids, cardiac rhythm management devices, glucose sensing, and medical diagnostics. In 2008, these markets held average potential global revenue of $534.6M. During 2008-2015, the potential global market average for MASTInc sensors in just these sectors is projected to reach over $637.6M.

Key Findings
According to the Frost & Sullivan report, MASTInc applications offer significant advantages:

Geophysical Exploration
? Flexibility to arrange the sensors in various directions to obtain field intensity;
? Cost-effective manufacturing;
? Smaller, lighter, low-power solutions for environmental and mineral detection; and
? Sensitivity that exceeds requirements.

"In the geophysical exploration arena, there are clear needs and opportunities for magnetic sensors capable of providing enhanced sensitivity, a very high signal-to-noise ratio, and that are able to very accurately detect the magnetic signature of key target objects or commodities at depth," noted Peter Adrian, Principal Analyst and Research Manager, Technical Insights Division of Frost & Sullivan. "MASTInc's sensor technology has true potential to better address key challenges in magnetic sensors for geophysical exploration and to help spearhead key advancements in highly cost-effective, comprehensive magnetic field sensing in geophysical exploration applications."

Van Fleet emphasizes, "These applications rapidly facilitate high-sensitive, lower cost mineral discovery, exploration and access of mineral deposits, such as gold or diamonds. This superior technology can also replace incumbent magnetometer technologies in airborne, ground or sea applications, representing speed-to-market that translates into high value for our partners."

Medical and Healthcare

? Smaller footprint maintaining high-sensitivity and low power;
? Cost-effective manufacturing through sensor arrays; and
? Lower cost devices with integrated electronics.

Adrian adds, "In medical/healthcare applications, such as hearing aids, cardiac rhythm management devices, medical diagnostics, and blood measurement applications (such as glucose monitoring) MASTInc's sensors have keen potential to address palpable needs for sensors with improved reliability, sensitivity, accuracy, low power consumption, and small form factor, environmental immunity, rapid response time, and immunity to failure or false alarms. Moreover, MASTInc's sensors have key potential to provide exquisite magnetic field detection sensitivity that is considerably greater than that of conventional Hall Effect sensors, which can drive both new and expanding applications for such sensors."

Van Fleet concludes, "Our magnetic sensor applications point to lucrative and valuable collaborative opportunities with multiple product development and supply companies. We anticipate the creation of higher performing products, and are exploring every imaginable need for magnetic sensors to directly impact and enhance individual care."

About Micromem Technologies Inc., and MASTInc

MASTInc is a wholly owned U.S.-based subsidiary of Micromem Technologies Inc., a publicly traded (OTC: MMTIF, CNSX: MRM) company. MASTInc responsibly analyzes the specific industry sectors to create intelligent game-changing applications that address unmet market needs. By leveraging its expertise and experience with sophisticated magnetic sensor applications, MASTInc successfully powers the development and implementation of innovative solutions for healthcare/biomedical, natural resource exploration, government, information technology, manufacturing, and other industries. Visit www.micromeminc.com or www.mastinc.com.

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.

The CNSX or any other securities regulatory authority has not reviewed and does not accept responsibility for the adequacy or accuracy of this press release that has been prepared by management.

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