



FOR IMMEDIATE RELEASE

Micromem Subsidiary Introduces Magnetic Sensors for Mining and Mineral Exploration with Potential Market Value of US\$500M Worldwide

Mining instrument reduces time, cost and increases accuracy of mineral pattern analysis in core samples

Toronto, New York, N.Y.—June 9, 2009 — Micromem Technologies Inc., (OTC: BB MMTIF, CNSX: MRM) through its wholly owned U.S. based subsidiary Micromem Applied Sensor Technologies, Inc. (MASTInc) (www.mastinc.com), announced today the successful integration of its patented magnetic sensor in a unique mining application. Designed to rapidly identify mineral constituents in drill core samples as they emerge from the earth, this patent pending instrument provides a significant business opportunity for MASTInc to work with pre-production mineral exploration companies. According to a Frost & Sullivan report this represents a significant market opportunity worth an estimated US\$500M worldwide.

“We expect to transform traditional mineral exploration from an incredibly expensive process and something of a gamble to a more cost-effective and reliable undertaking,” says Steven Van Fleet, president of MASTInc, who anticipates partner discussions to be finalized this summer with plans to deploy field evaluation units within the next 12 months. “Rather than using models, array sensor readings or personal expertise to decide where to make a series of test holes, geologists can now utilize this instrument to rapidly access the mineral makeup of the core samples as soon as they are extracted. We believe we have eliminated the time-consuming and expensive guesswork.”

Traditionally, geologists are forced to visually evaluate core samples removed from the drill rig for signs of mineral patterns that would indicate that the target minerals -- gold, platinum, copper or others – are in the area. Samples are sent to third party certified assaying companies to accurately determine the mineral constituents in the core samples, with information returned in two to four months or in some cases longer. Geologists then decide to either continue the drill program or abandon the targeted area and move the equipment and personnel to the next probable area. Waiting for information and deploying labor and equipment in rugged and sometimes harsh environments adds to the significant expense of each project.

“The MASTInc instrument provides immediate feedback about the presence of a specific mineral or compound constituent in the core samples,” explains Van Fleet. “At the heart of this instrument is the patented Micromem magnetic sensor, which combined with a novel data acquisition strategy makes it possible to not only find the needle in the hay stack, but to also identify what made the needle.”

The highly sensitive, small, and precision-oriented MASTInc sensor design passes over the core sample, injecting magnetic energy into the core and receives back a frequency-rich response that is a combined signature of the mineral/constituent makeup of the core sample and the inevitable signal noise.

MASTInc's patent on the mining sensor includes a unique signal processing strategy that allows geologists to identify, characterize, and compartmentalize the signal noise. More importantly, the instrument identifies and extracts the unique frequency signature of individual mineral/constituents from the full spectrum frequency of the core sample. It is not designed to replicate the level of accuracy regarding constituent analysis as provided by a third party assay company, rather to provide highly accurate, fast and cost effective onsite analysis.

"The development of this instrument is consistent with MASTInc's business plan to remain focused on creating unique magnetic sensors and forging partnerships with companies that have deep domain expertise in a variety of market verticals," says Van Fleet, noting the company's additional applications in computer technology, medical devices, security, defense and oil sensors. "As a result, we are able to drive revenue opportunities associated with these unique applications."

Van Fleet anticipates that this new application will greatly accelerate the exploration process and eliminate hundreds of millions of dollars associated with pre-production mineral exploration.

"MASTInc is now actively working with prospective partners that want to leverage our achievements in magnetic sensor development," says Van Fleet. "With two patented, market-ready innovations -- the sensor array and the signal processing -- we have the tools. Knowledgeable exploration partners will be positioned to leverage these assets and drive successful product development."

About Micromem 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 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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