



FOR IMMEDIATE RELEASE

December 20, 2007

Micromem Technologies Inc. First Foundry MRAM Manufactured

TORONTO, ONTARIO, December 20, 2007 – Micromem Technologies Inc. [OTC BB: MMTIF] (“the Company” or “Micromem”) is pleased to announce that it has successfully manufactured foundry grade fully functioning MRAM cells. This culminates an intensive three-year research and development proof of concept phase followed by a foundry phase focused on manufacturability and scalability of our MRAM product. The first phase of the foundry process will be completed in January 2008. Our development team at Strategic Solutions is to be applauded for working closely with the California-based foundry Global Communication Services (“GCS”) to meet the aggressive schedule that the Company initiated in the fall of 2007.

Reference is made to the September 17, 2007 press release wherein the Company described the Reticle Design and Test Plan. The initial foundry phase has generated an extensive amount of statistically validated MRAM performance data in accordance with the scheduled Test Plan. During January 2008 the Company will be analyzing this large data set. Initial data review indicates that the Test Plan was successful and the data set is rich with scalable data that indicates a clear path to an optimized MRAM cell design.

“The positive results of this initial foundry phase are a further validation of the work protected by our patent applications” Joe Fuda, Chief Executive Officer of Micromem Technologies Inc. noted. “Our engagement with the University of Toronto since 2003 has resulted in numerous patent submissions to date. Whenever you can validate the claims of your patents, particularly those of manufacturing process steps and product scaling, you are significantly increasing the value of the Company’s assets”.

“One additional positive outcome of this initial foundry phase is the market opportunity afforded Micromem Technologies Inc. resulting from the high sensitivity performance of our thin film Hall Cross Sensor component of our MRAM cell structure” says Steven Van Fleet, Program Director. “This has afforded the Company an opportunity to increase our product portfolio with a high sensitivity, low cost Hall Cross Sensor”. The February 2006 Frost & Sullivan Report on Extremely Sensitive Magnetic Sensors indicates a 2010 market size projection of \$2 billion with Hall sensors potentially representing about 80% of the market. In 2005 the total world magnetic sensor markets was approximately \$1 billion.

The Company has completed preliminary market discussions with targeted clients and there appears to be a good revenue opportunity for Micromem for the supply of stand alone Hall Cross Sensors to be incorporated into the various applications by others. In January 2008 the Company will be delivering Hall Cross Sensor evaluation packaging to several clients who have agreed to test and provide performance and cost/benefit feedback.

In January 2008, the Company will also be delivering functioning MRAM cells in specific packaging formats to others for third party radiation hard testing. This testing will focus on medical device sterilization radiation requirements, galactic radiation test protocol for space-based applications and weapons radiation protocols. The Company is confident that its MRAM will pass all three radiation hard protocol tests.

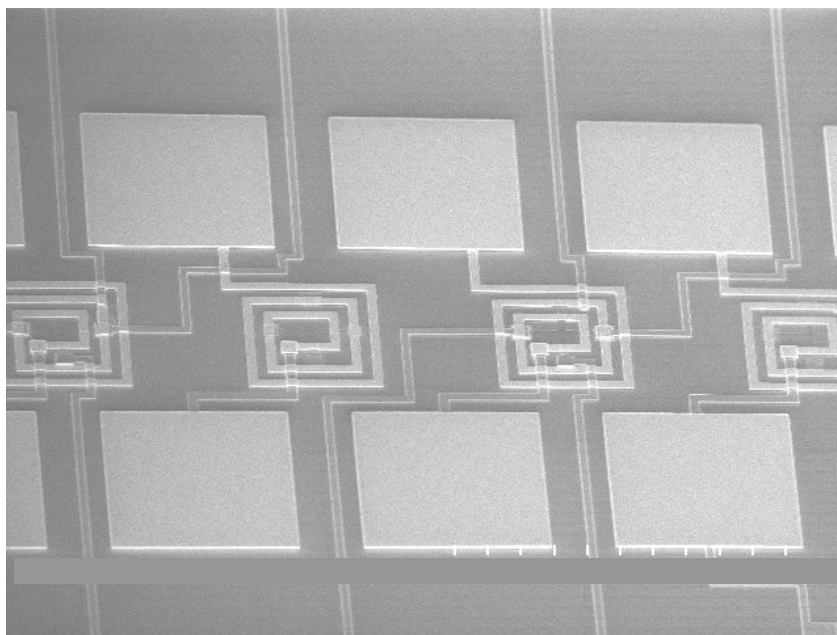
Micromem Technologies Inc. has now contracted Strategic Solutions to begin to design a Reticle Design and Test Plan for a 64 bit MRAM cell. These arrays will be transistorized and packaged so as to allow third parties to test and validate standard memory test protocols, including power, speed and robustness. In that same foundry run the Company will take the necessary steps to further optimize the fundamental MRAM bit cell architecture. These optimization steps will be driven from the Phase One Test Plan data set. It is anticipated that 64 bit MRAM arrays will be available for client testing in 3-4 months.

With this successful Phase One Foundry activity, the availability of foundry grade MRAM cells packaged for third party testing and the release of the 64 bit MRAM array into the next foundry phase, Micromem is now equipped to engage clients with targeted product development and integration requirements. These steps were mandatory to have discussions in earnest with clients who have expressed interest in partnering. When compared to competitive MRAM cell architectures with multiple thin film layers Phase One has proven to Micromem and to our potential partners that our memory is simple to manufacture and is robust in its design.

Joe Fuda states, "I am extremely pleased with these most recent advancements in Micromem. The next few months are going to be exciting and the best in the company's history. The Company is now focused on its client capture strategy that will proceed in three parallel market pursuits:

- Secure a developmental and market development partner for GaAs-based MRAM. This focus will primarily be military, health-care and automotive.
- Secure end user clients for Hall Cross Sensor applications requiring high sensitivity in thin film solutions.
- Secure a developmental and market development partner for Silicon Germanium conversion of our GaAs memory. This focus will allow the Company to participate in the larger silicon-based memory space. This market focus is on lower cost, higher density memory requirements."

Micromem Technologies Inc. plans to communicate the results of the Phase One Test Plan and release MRAM performance data in early February 2008.



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About Micromem Technologies Inc.

Micromem Technologies, Inc. (www.micromeminc.com) is focused on the development of magnetic random access memory (MRAM) technology.

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