

PRESS RELEASE

For Immediate Release

GRANDIS WAS AWARDED PRESTIGIOUS DARPA CONTRACT BY DEPARTMENT OF DEFENSE TO DEVELOP STT-RAM (SPIN TRANSFER TORQUE RANDOM ACCESS MEMORY)

MILPITAS, Calif., June 18, 2010 — Grandis, Inc., today announced that it has been awarded \$8.6 million from the Defense Advanced Research Projects Agency (DARPA) for the second phase of a research project developing spin-transfer torque random access memory (STT-RAM) chips. STT-RAM is a next-generation, solid-state memory technology that is dense, fast, non-volatile and radiation-hard, making it ideally suited for defense applications. The first phase, supported by an award amount of \$6.0 million, began in October of 2008 and was scheduled to last two years.

The program is being carried out by a world-class collaboration between Grandis, the Universities of Virginia and Alabama, and the College of William and Mary. Additional support has been provided by the National Institute of Standards and Technology and the Naval Research Laboratory. Under the direction of Principal Investigator Dr. Eugene Chen of Grandis, development work has covered STT-RAM materials and processes, as well as STT-RAM architecture and circuit blocks. During Phase II, work will ultimately include test and verification of STT-RAM integrated memory arrays. Professor Stuart A. Wolf of the University of Virginia and Professor William H. Butler of the University of Alabama are both noted for their substantial contributions to the development of the field of Spintronics, and their extensive research capabilities in fundamental physics, first-principles modeling and combinatorial materials science provide a valuable complement to the efforts at Grandis in this program. "The success of this DARPA program is dependent on this exceptional and well-knit team consisting of industry and university partners," according to the DARPA/MTO program manager for the STT-RAM program, Dr. Dev Shenoy.

"STT-RAM has huge potential as the only non-volatile Random Access memory which scales beyond 10nm. It is also the only technology fast enough to replace the existing DRAMs. It can replace embedded SRAM and flash at 45-nm, DRAM at 32-nm, and ultimately can replace NAND," stated Farhad Tabrizi, CEO and President of Grandis. "We are proud of the very significant and rapid progress made by Grandis and our partners during the first phase of this project."

Dr. Eugene Chen, Principal Investigator for the project, explained that "Approval of funding for the second phase of this project required reaching stringent goals for Phase I, a milestone we reached in March of this year, over six months ahead of schedule. These goals included demonstrating STT-RAM write energy of less than 0.25 pJ, read and write speeds of 5 nanoseconds and thermal stability greater than 60 kT, all on the same bits, plus projected endurance of greater than 1E16 cycles. In fact, we demonstrated these challenging metrics not just at 5 ns but also over a wide range of write speeds from 1 ns to 20 ns."

Grandis has been the world leader in the development of STT-RAM, which is also known as STT-MRAM or SpinRAM, since 2002. It has pioneered the development of innovative materials and structures to enhance spin-transfer efficiency and reduce STT write current while maintaining thermal stability. It has established a comprehensive patent portfolio in Spintronics and STT-RAM technology and a strong technical team with extensive expertise in magnetic thin film and semiconductor memory technology. The successful outcome of this DARPA program will lead to a revolution in military and space electronics by delivering sophisticated solid-state memory devices for mission-critical applications.

About Grandis, Inc.

Grandis is the pioneer in the development of spin-transfer torque RAM (STT-RAM), a non-volatile and scalable RAM memory solution. Grandis licenses its technology to companies that are developing a variety of products incorporating stand-alone and embedded STT-RAM memory. It offers its licensees a complete range of support services from process installation through qualification. By combining non-volatility and high performance with low-power consumption and low cost, STT-RAM can revolutionize the performance of electronic products in many areas. Grandis was established in 2002, and is headquartered in Silicon Valley, California. Investors include Matrix Partners, Sevin Rosen Funds, Applied Ventures LLC, Incubic and Concept Ventures. Additional information about the company is available on the Internet at www.grandisinc.com

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