

**Tuesday, June 23, 2009**

**Time: 2pm**

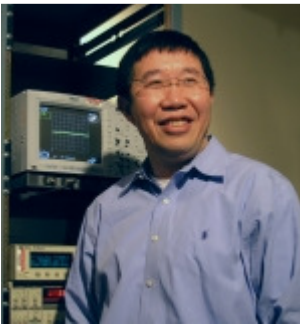
**Location: UCB**

**MRAM: A NEW SPIN**

**Prof. Jimmy Zhu**

**Data Storage Systems Center, Carnegie Mellon University**

Although dubbed as the future universal memory, magnetoresistive random access memory (MRAM) has had limited commercial success, partly because the field-driven magnetic state switching requires relatively high power consumption. New designs utilizing spin transfer torque (STT) might greatly expand storage capacity since the required power for switching a single bit is substantially reduced. STT-MRAM with perpendicular magnetic electrodes is particularly promising since it could provide critically needed scalability such that a single memory chip could be capable of storing billions of bits. The talk will provide an in-depth review on the development path of MRAM technology over the past decade and a prospective of the near future.



**Dr. Jian-Gang (Jimmy) Zhu** is the Director of the Data Storage Systems Center at Carnegie Mellon University. He is a full Professor in the Department of Electrical and Computer Engineering and holds the endowed chair of ABB Professorship in the College of Engineering. Dr. Zhu is also a Cheung Kong Chair Professor at Huazhong University of Science and Technology, China. He is an elected IEEE Fellow.

Professor Zhu received his B.S. degree in Physics from Huazhong University of Science and Technology in China in 1982, M.S. degree and Ph.D. degrees, both in Physics, from the University of California at San Diego in 1983 and 1989, respectively. Prior coming to Carnegie Mellon University, Professor Zhu was a faculty member in the Department of Electrical and Computer Engineering at University of Minnesota from 1990 to 1996 and was granted the McKnight-Land Grant professorship in 1993. He has authored and co-authored over 250 publications in various major technical journals and has presented over 50 invited papers in various major international technical conferences. He was a recipient of the 1993 NSF Presidential Young Investigator Award. He had been on the Advisory Editorial Board for the Journal of Magnetism and Magnetic Materials, North-Holland, Elsevier from 1998 to 2008. He was IEEE Distinguished Lecturer in 2004.

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