Center for Magnetic Recording Research
SEMINAR

TITLE: **Nano-Oxide-Layer with Magnetic Nano-Contacts and its Applications to Microwave/Magnetoelectric Devices**

SPEAKER: **Prof. Masashi Sahashi**
Tohoku University, Sendai, Japan

DATE: Friday, August 12, 2011

TIME: 3:00 pm (2:30pm – Refreshments)

LOCATION: Center for Magnetic Recording Research – Auditorium

HOST: Prof. Young Keun Kim (Visiting Research Scientist)

Metal/oxide spintronic devices based on giant magneto-resistance (GMR) and tunneling magneto-resistance (TMR) are expected to be a key technology in storage/memory areas. Moreover, new scientific and technological fields such as spin torque oscillator (STO) as a microwave device capable of electrical field manipulation or spin switching are attracting much attention because of their potential to create new market where a innovation on low power consumption is required. The nano-oxide-layer (NOL) proposed by our Tohoku-Toshiba research group, composed of magnetic/nonmagnetic ultrathin insulator and magnetic nano-contacts, shows an interesting performance that we could realize a new MR device called NCMR (or domain wall MR) with low resistance-area product and high MR ratio. It features a high-power STO with a narrow linewidth and high Q due to the localized current density.

Biography: Prof. Sahashi received his doctorate in crystalline material science with the development of high performance GMR head material with (111) orientated CoFe and IrMn antiferromagnet at Nagoya University in 2002. After he completed his M.S. degree from Nagoya University in 1974, he joined the R&D Center at Toshiba Corporation in the same year, where he became a project manager for Toshiba's GMR head development project during 1992~2002. After being a Senior Fellow at Toshiba, he joined Tohoku University in 2003. He received the Award of Invention in 2001 and Purple Ribbon Medal in 2002, respectively, from the Japanese government. His research interest includes the development of NCMR-STO for chip to chip communication and oxide spintronic device such as voltage controlled memory.