

The 2nd RIEC International Workshop on Spintronics

–MgO-based Magnetic Tunnel Junctions–

Date: February 15th (Thu.) – 16th (Fri.), 2007

Venue: Laboratory for Nanoelectronics and Spintronics, RIEC Tohoku University

Program (tentative)

Feb. 15th (Thu.)

- 9:10 **Opening address**
 H. Ohno (Organizer, Tohoku University, Japan)
- 9:20 **Opening remark**
 T. Miyazaki (Tohoku University, Japan)
- 9:30 **Theory of spin-dependent tunneling in MgO-based junctions**
 J. Mathon (City University London, UK)
- 10:10 **Theoretical study on coherent tunneling in half-metallic Heusler alloys/MgO junctions**
 M. Shirai (Tohoku University, Japan)
- 10:40 *Coffee break*
- 11:10 **Recent progress in fully epitaxial Mg-O based MTJs**
 S. Yuasa (Advanced Industrial Science and Technology, Japan)
- 11:50 **Giant tunnel magnetoresistance for exchange biased- and pseudo-spin valve CoFeB/MgO/CoFeB magnetic tunnel junctions**
 Y. M. Lee (Tohoku University, Japan)
- 12:20 *Lunch*
- 14:00 **Characterizations on the polycrystalline CoFeB/MgO/CoFeB-based magnetic tunnel junctions**
 Y. S. Choi (Canon Anelva, Co., Japan)
- 14:40 **XPS, STS and STEM studies on MgO tunnel barrier layers in MTJ (tentative)**
 J. Read (Cornell University, USA)
- 15:10 **Crystallographic structure and giant TMR of CoFeB/MgO/CoFeB-MTJs**
 M. Tsunoda (Tohoku University, Japan)
- 15:40 *Coffee break*
- 16:10 **MgO double tunnel junctions**
 M. Coey (University of Dublin, Ireland)
- 16:50 **How to play with the fastidious MgO applicable to STT-MRAM**
(-17:20) K. H. Shin (Korea Institute of Science and Technology, Korea)
- 18:00 *Banquet* —Sendai Kokusai Hotel; “Steakery Thirty”—
- 19:30 (SS30 Bldg. 2-6-1 Chuo, Aoba-ku, Sendai phone: 022-267-8830)

Feb. 16th (Fri.)

- 9:30 **Spin-torque-switchable nano-structured MgO magnetic tunnel junctions**
 J. Sun (Thomas J. Watson Research Center, IBM, USA)
- 10:10 **Spin Transfer Switching in MTJ with Nano-Second Pulse Widths**
 Y. Huai (Grandis Inc., USA)
- 10:50 *Coffee break*
- 11:10 **Current-induced magnetization switching and thermal stability in nano-scale MgO based magnetic tunnel junctions**
 J. Hayakawa (Hitachi Ltd., Japan)
- 11:40 **Large power microwave excitations induced by spin-transfer in MgO-based magnetic tunnel junctions**
 A. Deac (Osaka University, Japan)
- 12:10 *Lunch*
- 14:00 **Spin polarized tunneling in MgO based magnetic tunnel junctions**
 S. Parkin (Almaden Research Center, IBM, USA)
- 14:40 **Giant TMR at room temperature using Co-based Heusler alloy electrodes and a MgO barrier**
 K. Inomata (National Institute for Materials Science, Japan)
- 15:10 **Spin-dependent tunneling in fully epitaxial magnetic tunnel junctions with a Heusler alloy thin film and a MgO tunnel barrier**
 M. Yamamoto (Hokkaido University, Japan)
- 15:40 *Coffee break*
- 16:10 **Tunnel magnetoresistance in MTJs with Co₂MnSi electrode and MgO barrier**
 M. Oogane (Tohoku University, Japan)
- 16:40 **Thermal stability of exchange-couple trilayers for high density magnetic random access memory**
 S. H. Lim (Korea University, Korea)
- 17:10 **Closing address**
- 17:20 H. Ohno (Tohoku University, Japan)