

Program

Advances in Magnetic Nanostructures

October 4 - 9, 2009

Vail, Colorado, USA

Conference Chair

Amanda K. Petford-Long, Argonne National Lab, USA

Conference Co-Chairs

Chris Binns, University of Leicester, UK
Olle G. Heinonen, Seagate Technology, USA
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Sunday, October 4, 2009

16:00 - 18:00	Registration
18:00 – 19:00	Reception
19:00 – 20:30	Dinner

NOTES

- Audiotaping, videotaping and photography of presentations are prohibited.
- Speakers – Please leave at least 5 minutes for questions and discussion.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- Be sure to make any corrections to your name/contact information on the Master Participant List or confirm that the listing is correct. A corrected copy will be sent to all participants after the conference.

Monday, October 5, 2009

07:00 – 08:15 Breakfast

08:15 – 08:30 **Welcome and Announcements**

Session I: Spin Dynamics

Session Chair: Burkhard Hillebrands

08:30 – 09:20 *Driven dynamic mode-splitting of the magnetic vortex translational resonance*
Kristen Buchanan, Colorado State University, USA

09:20 – 10:10 *Spin transfer switching in magnetic tunnel junctions: time-resolved observation and related eigen excitations*
Thibaut Devolder, University of Paris, France

10:10 – 10:40 Coffee Break

Session II: Spin Dynamics / Magnetic Imaging

Session Chair: Kristen Buchanan

10:40 – 11:30 *Current induced spin-wave emission from ferromagnetic nanostructures*
Burkhard Hillebrands, Kaiserslautern University, Germany

11:30 – 12:20 *Generation of localized ferromagnetic resonance modes for scanned probe imaging*
Chris Hammel, Ohio State University, USA

12:30 – 13:30 Lunch

13:30 – 16:00 *ad hoc* discussions / Free time

16:00 – 18:00 **Poster Session** with coffee

18:10 – 19:30 Dinner

Session III: Spin Dynamics / Magnetic Imaging

Session Chair: Amanda Petford-Long

19:40 – 20:30 *Magnetic soft X-ray microscopy - imaging nanoscale magnetic structures and their fast spin dynamics*
Peter Fischer, Advanced Light Source, USA

20:30 – 21:20 *Recent progress in quantitative Lorentz microscopy*
Marc De Graef, Carnegie Mellon University

Tuesday, October 6, 2009

- 07:00 – 08:30 Breakfast
- Session IV: Spin Injection and Spin Torque**
Session Chair: Shufeng Zhang
- 08:30 – 09:20 *MBE growth and spin transport in epitaxial ferromagnetic metal / compound semiconductor heterostructures*
Chris Palmstrøm, University of California – Santa Barbara
- 09:20 – 10:10 *Silicon spintronics: spin injection, manipulation and electrical detection in lateral devices*
Berry Jonker, Naval Research Laboratory, USA
- 10:10 – 10:40 Coffee Break
- Session IV contd: Spin Injection and Spin Torque**
Session Chair: Daichi Chiba
- 10:40 – 11:30 *Spin torque oscillators*
Johan Akerman, Royal Institute of Technology, Sweden
- 11:30 – 12:20 *Theory of spin torques and related phenomena in conducting ferromagnets*
Shufeng Zhang, University of Arizona, USA
- 12:30 – 16:00 Lunch on your own / Free afternoon
- 16:00 – 18:00 **Poster Session** with coffee
- 18:10 – 19:30 Dinner
- Session V: Organic Magnetotransport**
Session Chair: Berry Jonker
- 19:40 – 20:30 *Organic spin-valve: the first organic spintronics devices*
Tho Nguyen, University of Utah, USA
- 20:30 – 21:20 *Organic spintronic structures*
Luis Hueso, University of Leeds/CIC NanoGUNE, UK

Wednesday, October 7, 2009

07:00 – 08:30 Breakfast

Session VI: Magnetic Nanoparticles and Nanostructures

Session Chair: Benjamin Yellen

08:30 – 09:20 *2D and 3D correlations in self-assembled arrays of magnetic nanoparticles*
Sara Majetich, Carnegie Mellon University, USA

09:20 – 10:10 *A new class of magnetic nanoparticles for medical diagnosis and therapy*
Chris Binns, University of Leicester, UK

10:10 – 10:40 Coffee Break

Session VI contd: Magnetic Nanoparticles and nanostructures

Session Chairs: Chris Binns

10:40 – 11:30 *Applications of magnetic nanoparticles*
Benjamin Yellen, Duke University, USA

11:30 – 12:20 *Switching behavior and applications of thin film magnetic rings*
Caroline Ross, Massachusetts Institute of Technology, USA

12:30 – 13:30 Lunch

13:30 – 15:30 *ad hoc* discussions / Free time

15:30 – 16:00 Coffee Break

Session VI: Technological Applications

Chair: Johan Akerman

16:00 – 16:50 TBA
Jie Zou, Seagate, USA

16:50 – 17:40 *Electric-field manipulation of magnetic anisotropy in (Ga,Mn)As*
Daichi Chiba, Kyoto University, Japan

Dinner on your own / Free evening

Thursday, October 8, 2009

- 07:00 – 08:30 Breakfast
- Session VII: Magnetic Tunnel Junctions**
Session Chair: Terunobi Miyazaki
- 08:30 – 09:20 A MOS/MTJ-hybrid circuit with *non-volatile circuits logic-in-memory architecture*
Takahiro Hanyu, Tohoku University, Japan
- 09:20 – 10:10 *Functional interfacial phenomena in magnetic oxide heterostructures and devices*
Yuri Suzuki, University of California – Berkeley, USA
- 10:10 – 10:40 Coffee Break
- Session VII contd: Magnetic Tunnel Junctions**
Session Chair: Yuri Suzuki
- 10:40 – 11:30 *Heusler alloy electrode tunnel junctions*
Terunobi Miyazaki, Tohoku University, Japan
- 11:30 – 12:20 *The role of interfaces in the behavior of magnetic tunnel junction structures*
Amanda Petford-Long, Argonne National Laboratory
- 12:30 – 13:30 Lunch
- 13:30 – 15:30 *ad hoc* discussions / Free time
- 15:30 – 17:30 **Poster Session** with coffee
- Session VIII: Spin Dynamics II**
Session Chair: Chris Hammel
- 17:30 – 18:20 *Spin transfer dynamics in perpendicularly magnetized CoNi nanodots*
William Rippard, NIST, Boulder
- 18:20 – 19:10 *Vortex-Antivortex Assisted Vortex Core Reversal*
Hermann Stoll, Max Planck Institute, Stuttgart, Germany
- 19:30 – 21:30 Conference Dinner

Friday, October 9, 2009

- 07:00 – 08:30 Breakfast
- 8:30 - 12:00 **Session IX: Contributed Talks (= 15 minute talk + 5 minutes QA)**
Session Chair: Amanda Petford-Long
A T Hindmarch (Leeds Univ) *Interface induced uniaxial magnetic anisotropy in amorphous CoFeB films on AlGaAs(001)*
L T Tryputen (Ukraine National Acad. Sci) *Spin-vortex-like states in magnetic point contacts*
M Franchin (Univ of Southampton) *Current-driven dynamics of domain walls constrained in ferromagnetic nanopillars*
O Tretiakov (New York Univ) *AC and DC driven colored noise and magnetization dynamics in magnetic nanostructures*
I Barsukov (Univ of Duisberg-Essen) *Tailoring spin relaxation by nanostructuring thin films*
- 10:10 – 10:40 Coffee Break
- D H Kim (Argonne National Lab) *Multifunctional magnetic micelles for cancer treatment*
R Dhunna (Univ of Rajasthan) *Irradiation effects on magnetic properties of binary nitrides*
I Lee (Ohio State Univ) *Quantitative characterization of a thin ferromagnetic film by PI-MFM and FMRFM. Experimental Characterization of (Ga, Mn)As thin film*
- 11:40 – 12:10 Closing Remarks / Conclusions
- 12:10 – 13:30 Lunch and departures

List of Posters

- 1. Ferromagnetic resonance imaging using a submicron localized spin wave mode**
Inhee Lee, Ohio State University, USA
- 2. High resolution imaging of magnetic vortices using scanning electron microscopy with polarization analysis (SEMPA)**
John Unguris, NIST, USA
- 3. Room temperature magnetic stabilization of buried cobalt nanoclusters within a ferromagnetic matrix studied by soft X-ray magnetic circular dichroism**
Aidan Hindmarch, University of Leeds, UK
- 4. Irradiation effects on magnetic properties of binary nitrides**
Renu Dhunna, University of Rajasthan, India
- 5. Controlled Motion Of Barcode Nanowires For Biosensing Applications**
Vishnubhotla Sudha Rhani, Chungnam University, India
- 6. Novel magnetic tunnel junctions in the extreme thin barrier limit**
Joshua Pomeroy, NIST, USA
- 7. Tailoring of the Neel and interlayer exchange coupling of Fe/Cr/Fe trilayers using rippled substrates**
Kilian Lenz, Forschungszentrum Dresden-Rossendorf E.V., Germany
- 8. Determination of the saturation magnetization from perpendicular magnetic anisotropy measurements**
Kilian Lenz, Forschungszentrum Dresden-Rossendorf E.V., Germany
- 9. Tailoring spin relaxation by nanostructuring thin films**
Igor Barsukov, University Duisburg-Essen, Germany
- 10. Spin-vortex-like states in magnetic point contacts**
Larysa Tryputen, National Academy of Sciences, Ukraine
- 11. Inverse spin Hall effect measurements in patterned Ni₈₀Fe₂₀/normal metal bilayers**
Oleksandr Mosendz, Argonne National Laboratory, USA
- 12. AC and DC driven colored noise and magnetization dynamics in magnetic nanostructures**
Oleg Tretiakov, New York University, USA
- 13. Energy Thresholds In Current-Induced Vortex Core Switching Processes**
Sebastian Gliga, Institute of Solid State Research (IFF-9), Research Center Jülich, Germany
- 14. Current dependent magnetoresistance in dual spin valves**
Atif Aziz, University of Cambridge, UK
- 15. Current-driven dynamics of domain walls constrained in ferromagnetic nanopillars**
Matteo Franchin, University of Southampton, UK