

Thursday, 31 May

- 9:00 Current-driven domain wall propagation along strips with high perpendicular anisotropy: A micromagnetic analysis of the Rashba field in asymmetric stacks
Dr. Eduardo Martinez, University of Salamanca, Spain
- 9:30 Joule heating in nanowires, and domain wall motion in PMA nanowires with edge roughness
Prof. Dr. Hans Fangohr, University of Southampton, UK
- 10:00 Current-induced magnetization dynamics in nanostructures probed by time-resolved XMCD-PEEM
Dr. Stefania Pizzini, CNRS Grenoble, France
- 10:30 Coffee break
- 11:00 Temperature-dependent dynamics of stochastic domain-wall depinning in ferromagnetic nanowires
Dipl.-Phys. Clemens Wuth, University of Hamburg, Germany
- 11:30 Imaging domain walls with magnetic soft X-ray microscopy
PD Dr. Peter Fischer, CXRO, LBNL, Berkeley, USA
- 12:00 Novel methods and new materials for current-induced domain-wall motion
Prof. Dr. Rembert Duine, University of Utrecht, Netherlands
- 12:30 Lunch (Bucerius Law School)
- 14:00 Microscopic theory of current-spin interaction in ferromagnets with Rashba-type spin-orbit coupling
Dr. Hiroshi Kohno, Osaka University, Japan
- 14:30 Dependence of the direction of current induced domain wall motion on the structure of perpendicularly magnetized Co/Ni multilayers
Dr. Stuart Parkin, IBM Almaden, USA
- 15:00 Fast Domain-Wall Generation in Nanowires and Spin-Wave Confinement in Domain Walls
Dr. Lars Bocklage, University of Hamburg, Germany
- 15:30 Coffee break
- 16:00 Electrical domain morphologies in compositionally graded ferroelectric films
Prof. Dr. Nagy Valanoor, University of New South Wales, Australia
- 16:30 In-Situ Monitoring of Switching Dynamics in FIB-cut Ferroelectrics
Prof. Dr. Marty Gregg, University of Belfast, UK
- 17:00 Superlensing with Spin Waves
Dr. Stefan Mendach, University of Hamburg, Germany
- 20:00 Symposium dinner

Friday, 01 June

- 9:00 Controlled pinning and depinning of domain walls in nanowires with perpendicular magnetic anisotropy
Dipl.-Phys. Theo Gerhardt, University of Hamburg, Germany
- 9:30 Roles of field and current in thermally activated domain wall motion in a submicrometer magnetic strip with perpendicular magnetic anisotropy
Prof. Dr. Geoffrey Beach, MIT Cambridge, USA
- 10:00 Efficient, controlled current-induced domain wall motion in nanowires with perpendicular magnetic anisotropy and a Rashba effective field
Dr. Thomas Moore, University of Leeds, UK
- 10:30 Coffee break
- 11:00 Novel concepts of the manipulation of magnetic domain walls
PD Dr. Elena Vedmedenko, University of Hamburg, Germany
- 11:30 Spatially asymmetric domain wall propagation in a multilayered nano-wire with oscillating interlayer exchange coupling
Dr. Akinobu Yamaguchi, AIST Tsukuba, Japan
- 12:00 Emergent Electrodynamics of Skyrmions in Chiral Magnets
Prof. Dr. Christian Pfleiderer, TU Munich, Germany
- 12:30 Lunch (Bucerius Law School)
- 14:00 Current driven domain wall motion in perpendicularly magnetized CoFeB nanostructures
Dr. Masamitsu Hayashi, NIMS, Tsukuba, Japan
- 14:30 Domain wall investigations in thin film nanowires by Lorentz microscopy
Dr. Steve McVitie, University of Glasgow, UK
- 15:00 Towards fully 3-dimensional MRAM
Prof. Dr. Russell Cowburn, University of Cambridge, UK
- 15:30 Closing remarks



International Symposium on the
Dynamics of Domain Walls 2012

Hamburg
30 May – 01 June 2012

University of Hamburg
Institute of Applied Physics
Jungiusstrasse 11, 20355 Hamburg
Germany



Graduiertenkolleg 1286

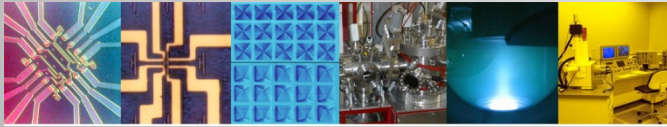
Maßgeschneiderte Metall-Halbleiter-Hybridssysteme
Functional Metal-Semiconductor Hybrid Systems



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Maßgeschneiderte Metall-Halbleiter-Hybridssysteme
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Dear colleague,

Welcome to the “International Symposium on the Dynamics of Domain Walls 2012” in Hamburg. Research on the dynamics of domain walls is motivated not only by the wish to increase our insight into these micromagnetic phenomena, but also by the prospect of novel concepts for memory and logic applications. Current-induced domain wall motion pioneered more than a quarter of a century ago, has blossomed in the last few years into one of the most vibrant areas of research in spintronics. Many important experimental, theoretical, and simulational contributions have recently been made to understand the intricate details of the dynamics of magnetic domain walls, which have in part been published in the Institute of Physics Journal, *Journal of Physics: Condensed Matter* in a Special Issue on “The Dynamics of Domain Walls”. Right now it is important and appropriate to bring together leading groups in this fast evolving field to report the state-of-the-art in domain wall dynamics as well as to extend the topic into other materials such as ferroelectrics. We hope you will have a pleasant and very informative stay in Hamburg!

Kind regards,

Guido Meier
(University of Hamburg)

Christopher Marrows
(University of Leeds)

Conference Organizers:

PD Dr. Guido Meier

Institute of Applied Physics and Microstructure Research Center, University of Hamburg, Germany

Prof. Dr. Christopher Marrows

School of Physics and Astronomy, Faculty of Mathematical and Physical Sciences, University of Leeds, UK

Local Organizing Committee:

Dr. Lars Bocklage, University of Hamburg, Germany
Dipl.-Phys. Andreas Vogel, University of Hamburg, Germany
Dipl.-Phys. Clemens Wuth, University of Hamburg, Germany

Aims of the Symposium:

The aim of this symposium is to bring together world-leading experts to continue the fast progress in this exciting field of research. The prominent role of the collaborative research center SFB 668 “Magnetism from the single atom to the nanostructure” in the field of dynamics of domain walls on the nanoscale shall be underlined. The scientific community that focuses its research on the dynamics of domain walls in confined micro- and nanostructures shall be strengthened and experts in this field will be brought together to share their latest research results with each other. The symposium will facilitate the dissemination of knowledge by combining analytical, experimental, and simulational expertise and identify remaining challenges in the field.



Directions:

By plane: From Hamburg-Fuhlsbüttel International Airport take Metro S1 to Central Station, then change to S11/S21/S31 and exit Dammtor.

By train: Please exit at Hamburg-Dammtor or Central Station (see above).

By car: Follow the signs to Messe and CCH. Parking space is available at the Institute.

Public transport: Metro S11/S21/S31 to Dammtor, Metro U1 to Stephansplatz, Metro U2 to Gänsemarkt as well as Bus 4/5/109/112 to Stephansplatz or Bus 35 to Messe Eingang Ost.

Hotel Information:

Hotel Baseler Hof
Esplanade 11
20354 Hamburg

Schedule:

Tuesday, 29 May

18:00 Informal get together

Wednesday, 30 May

8:30 Welcome

9:00 Specific DW dynamics in field driven application
Dr. Roland Mattheis, IPHT Jena, Germany

9:30 Current-induced domain wall motion in perpendicularly magnetized Co/Ni nanowires
Prof. Dr. Teruo Ono, Kyoto University, Japan

10:00 Spin-transfer torque and magnetization switching in patterned antiferromagnetic coupled bilayers
Dr. Serban Lepadatu, University of Leeds, UK

10:30 Coffee break

11:00 The interaction of transverse domain walls
Dr. Benjamin Krüger, University of Hamburg, Germany

11:30 Spin-current induced domain wall dynamics
Prof. Dr. Mathias Kläui, University of Mainz, Germany

12:00 Electrically detected domain wall resonance in nano and atomic structures
Dr. Michel Viret, CEA Saclay, France

12:30 Lunch (Bucerius Law School)

14:00 Field- and current-induced domain-wall motion in permalloy nanowires with magnetic soft spots
Dipl.-Phys. Andreas Vogel, University of Hamburg, Germany

14:30 Domain wall engineering using focused ion and electron beams
Prof. Dr. Henk Swagten, University of Eindhoven, Netherlands

15:00 Applications of domain walls in magnetic nanowires
Dr. Dan Allwood, University of Sheffield, UK

15:30 Coffee break

16:00 Pulling and pushing domain walls: from wall binding to perpendicular current injection
Dr. Peter Metaxas, CNRS Thales, France

16:30 Enhanced functionality in magnonics by inhomogeneous spin configurations
Prof. Dr. Dirk Grundler, TU Munich, Germany