

International Workshop Nanomagnets by Self-organization



supported by
NanoNet Styria & MNA-Network



October 8 - 11, 2006
Eisenerz, Province of Styria, Austria



1. Objectives and general program

Self-organization of nanomagnets at solid surfaces is a recent field of fundamental research in solid state physics and surface science with growing activity. On the other hand, nanomagnets start being used already in multidisciplinary approaches up to life sciences. The workshop is aimed to bring together experts of the field - including theorists - along with experts from chemistry, biology, and medicine with a view to create a multidisciplinary stimulation, both for exploring new multidisciplinary fabrication approaches and for targeting potential routes for novel applications.

The workshop will gather leading experts, as well as Post-Docs and Ph. D. students in the emerging field of nanomagnetism. Besides invited lectures, contributed talks and poster sessions also round table discussions are planned to evaluate the future potential of the field. It is believed that the vicinity of the Styrian "Erzberg" (Iron ore mountain that has been mined for ages) will inspire lively and fruitful discussions during the four days.

2. Main topics

- a. Magnetism in low-dimensional systems: Experiment & Theory
- b. Advanced Characterization Techniques
- c. Fabrication of nanomagnet arrays utilizing self-organization processes
- d. Fabrication using self-organized templates
- e. Colloidal systems and Molecular Magnetism
- f. Nanomagnets in Biology and Medicine

3. Participants

More than 25 speakers from about 15 European Countries and the US are invited.

A total number of participants ranging between 60 and 70 is expected.

See tentative list of invited speakers at the end.

4. Time, location and venue

Time: The workshop will be held from Sunday, October 8 till Wednesday, October 11. It will start with an evening session on Sunday and will end on Wednesday night with a Styrian Evening. Recommended departure will be in the morning of Thursday, October 12.

Location: Eisenerz, Austria

Eisenerz is a lovely town in the Eastern Alps with a century long mining tradition. Eisenerz is located 35 km north of the town of Leoben with the Montanuniversität Leoben (the Austrian “School of Mines”). Leoben can easily be reached from most of the European cities by train. Nearest airports are Graz and Vienna.

Venue: Jugend- und Familiengästedorf Eisenerz, in A-8790 Eisenerz. Altitude 1040m.

For details see: <http://www.oehv.or.at/quartier/8790/8790.htm>

The modern guesthouse is equipped with high-quality conference and recreation facilities. It is located at the end of the lovely valley “Eisenerzer Ramsau” and offers a magnificent view at the impressive “Erzberg”.

Accommodation: Spacious full comfort rooms for occupancy by two persons. (A few single rooms are available on request.)

5. Organizing Committee

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Tentative list of invited speakers

Dimitri Arvanitis, Uppsala	XMCD on 3d transition metal based thin films and nanostructures
Lucien Besombes, Saint Martin d'Hères	Spin properties of charge tunable single Mn-doped quantum dots
Stefan Blügel, Jülich	The computational view on nanomagnetism
Harald Brune, Lausanne	no title so far
Patrick Bruno, Halle	no title so far
Anna Delin, Stockholm	Magnetism in transition metal nanowires
Tomasz Dietl, Warszawa	Self-organization phenomena in diluted magnetic semiconductors
Klaus Heinz, Erlangen	Self-Organized Nanowires on Ir(100)
Antonio Hernando, Las Rozas – Madrid	not yet confirmed
Jürgen Kirschner, Halle	The concept of mesoscopic mismatch and its consequences
Heinz Krenn, Graz	Magnetic phenomena in Ni/Si-nanowire arrays arranged on 2Dim Archimedian lattices"
Kai Liu, Davis	Magnetic Fingerprints of Sub-100nm Fe Nanodots
Darko Makovec, Ljubljana	Synthesis and properties of spinel-ferrite magnetic nanoparticles
Rodolfo Miranda, Madrid	Nanomagnets by Self-Organisation - An introduction to nanomagnetism
María del Puerto Morales, Madrid	Synthesis and surface modification of magnetic nanoparticles for biomedical applications
Riccardo Moroni, Genova	Ion-induced nanoscale structures: a tool for tuning magnetic anisotropy in ultrathin films
Kornelius Nielsch, Halle	Magnetic Nanostructures based on Self-ordered Al ₂ O ₃ Membranes: From Nanowires towards Multifunctional Nanotubes
Fernando Palacio Parada, Zaragoza	not yet confirmed
Quentin Pankhurst, London	not yet confirmed
Paulo Jorge Peixeiro de Freitas, Lisboa	no title so far
Marie-Paule Pileni, Paris	Self organization of inorganic magnetic nanocrystals: Ordering effect on the mesoscopic structure and magnetic properties
Caroline Ross, Cambridge	not yet confirmed
Sylvie Rousset, Paris	Self-organized Co and Fe nanodots on an Au(111) vicinal template
Sebastiaan van Dijken, Dublin	Scaling of perpendicular exchange bias in [Pt/Co] _n /IrMn structures on polystyrene nanospheres

Elena Vedmedenko, Hamburg

Multipolar ordering and magnetization reversal in two-dimensional nanomagnet arrays

Michael Winklhofer, München

Biological nanomagnets and their function in organisms

Wulf Wulfhekel, Karlsruhe

On the role of atomic steps in magnetism :
A spin-polarized scanning tunneling microscopy study