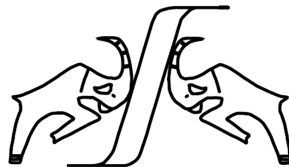


Proceedings  
of the European Conference  
PHYSICS OF MAGNETISM 2008

Poznań, Poland, June 24–27, 2008

*Dedicated to the Memory of Professor Kazumi Maki*



*Editors of the Proceedings*

B. Idzikowski, J. Barnaś  
F. Stobiecki, R. Micnas  
A. Szajek, R.J. Wojciechowski

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## Preface

The European Conference PHYSICS OF MAGNETISM 2008 (PM'08) was the twelfth of the series organised jointly by the Institute of Molecular Physics of the Polish Academy of Sciences and the Faculty of Physics of the Adam Mickiewicz University every three years since 1975 in Poznań. From the early beginning, the conferences were meant as an international forum for the presentation and discussion of novel scientific ideas in a field of broadly understood magnetic phenomena (including experimental results and new materials) with special emphasis on strongly correlated electrons, spintronics, thin films, and nanostructures.

All conferences from this series were held in Poznań, the capital of Wielkopolska (Greater Poland), which for a long time has been known by our regular visitors as a place for frequent meetings of Polish and international “magnetic” community.

As for the earlier conferences of this series, the venue of the twelfth PM'08 conference held on June 24–27, 2008 was again Poznań, in the modern buildings of A. Mickiewicz University, offering excellent conference facilities.

The Conference PM'08 was divided into several sessions chaired by scientists from the conference Programme Committee. Three sessions were organised by Professor Józef Spalek and the Management Committee of European Community action COST P16–ECOM (“Emergent Behaviour in Correlated Matter”). Moreover, a special session took place to honor Professor Leon Kowalewski's 80-th birthday.

The programme of the Conference consisted of 33 invited talks was presented by distinguished physicists from Europe, USA and Japan.

The invited speakers (in alphabetical order) included:

J. Barnaś (Poland)	<i>Switching of Molecular Magnets</i>
E. Bauer (Austria)	<i>Occurrence of Two Quantum Critical Points in <math>\text{Yb}_2\text{Pd}_2\text{Sn}</math> or, Yb Systems do not Behave Mirror-Like to Ce Compounds</i>
M. Brando (Germany)	<i>Quantum Criticality in Slightly Ir- and Co-Doped <math>\text{YbRh}_2\text{Si}_2</math></i>
K. Byczuk (Poland)	<i>Ferromagnetism and Metal–Insulator Transitions in Correlated Electron Systems with Alloy Disorder</i>
B. Coqblin (France)	<i>Kondo Lattice and Magnetic Properties in Strongly Correlated Electron Systems</i>
R.A. Cowley (United Kingdom)	<i>Dynamics of the Two-Dimensional Heisenberg Model: Experiment, Computation and Theory</i>
V. Cros (France)	<i>Microwave Generation in Nanopillars Induced by a Spin Transfer Torque: a New Paradigm of High Frequency Oscillators</i>
O. Eriksson (Sweden)	<i>First Principles Spin-Dynamics Simulations, Theory and Applications</i>
M. Farle (Germany)	<i>Magnetic Nanohybrids: Status and Challenges</i>
M. Fiebig (Germany)	<i>Magnetoelectric Interaction Phenomena in Multiferroics and the Role of Space-Time Symmetry Violation</i>
J.C. Gómez-Sal (Spain)	<i>Overview on the Physics of the Complex Phase Diagram of <math>\text{CeNi}_{1-x}\text{Cu}_x</math></i>
C. Van Haesendonck (Belgium)	<i>Resistance of Domain Walls Induced by Spatial Modulation of Exchange Bias and Surface Roughness</i>
B. Heinrich (Canada)	<i>Spin Dynamics in Nanoscale Systems</i>
V. Janiš (Czech Republic)	<i>Magnetic Properties of Metallic Impurities with Strongly Correlated Electrons</i>
D. Kaczorowski (Poland)	<i>On the Search for Quantum Criticality in a Ferromagnetic System <math>\text{UNi}_{1-x}\text{Co}_x\text{Si}_2</math></i>
D. Khomskii (Germany)	<i>Spin-Driven Spontaneous Currents and Polarization in Mott Insulators: Are Electrons Really Localized?</i>
M. Kläui (Germany)	<i>Interactions between Domain Walls and Spin-Polarized Currents</i>
T. Mito (Japan)	<i>High Pressure Studies on Yb Based Strongly Correlated Electron Systems</i>
M.C. Muñoz (Spain)	<i>Ferromagnetic States at the O Surfaces of ZnO and Co-ZnO</i>
A.M. Oleś (Poland)	<i>Spin-Orbital Physics in Transition Metal Oxides</i>
P. Prelovšek (Slovenia)	<i>Anomalous Normal-State and Resonant Magnetic Response in Cuprates</i>

M. Reiffers (Slovakia)	<i>Heat Capacity of the Melt-Spun Cubic RECu<sub>5</sub> Compounds (RE – Heavy Rare Earths)</i>
B. Rellinghaus (Germany)	<i>Tailoring the Properties of Magnetic Nanoparticles from the Gas Phase</i>
S. Sanvito (Ireland)	<i>Density Functional Theory for Spin-Transport</i>
T. Ślęzak (Poland)	<i>Magnetism of Ultra-Thin Iron Films Seen by the Nuclear Resonant Scattering of Synchrotron Radiation</i>
J. Slonczewski (USA)	<i>Electronic Mechanism of Conductance and Spin-Transfer Torque in Magnetic Tunneling Junctions</i>
J. Spałek (Poland)	<i>Fulde–Ferrel–Larkin–Ovchinnikov Superconducting Phase for Paired Quasiparticles with Spin-Dependent Masses and their Distinguishability</i>
P. Thalmeier (Germany)	<i>Frustrated Magnetism in Vanadium Oxides</i>
D. Vollhardt (Germany)	<i>Realistic Modelling of Materials with Strong Electronic Correlations</i>
J. Wróbel (Poland)	<i>Controlling Electron Spin in Non-Magnetic Nanostructures</i>
H. Zabel (Germany)	<i>Ordering and Frustration in Artificial Magnetic Patterns</i>
V. Zlatić (Croatia)	<i>Enhancement of Thermal Transport in the Degenerate Periodic Anderson Model</i>
M. Zwierzycki (Poland)	<i>Spin Polarized Transport from First Principles: from Magnetic Multilayers to Graphene</i>

Besides the above, 251 contributions were presented in either oral (55 short talks) or poster form. Many papers presented were submitted for publication in the conference proceedings.

After regular refereeing procedure 122 papers were accepted for publication. The success of PM'08 was due to the contribution of 250 participants from different countries in the programme. Our proceedings appear in *Acta Physica Polonica A* as a first issue of new journal format. The collaboration with the Editorial Staff of *Acta Physica Polonica A* was efficient and fruitful for both sides. The Guests Editors wish to thank the staff members for their effort and enthusiasm.

It is our sad duty to inform the readers that Professor Kazumi Maki will no longer be with us as he has passed away on 10th of September 2008. This issue of *Acta Physica Polonica A* is dedicated to his memory.

Finally, we would like to take this opportunity again to thank our colleagues from the Programme, Advisory, and Organizing Committees, as well as the referees who have ensured the scientific quality of the conference and of the proceedings. Our special thanks are also due to all the Sponsors of the Conference (see the relevant list).

B. Idzikowski, J. Barnaś,  
F. Stobiecki, R. Micnas,  
A. Szajek, R.J. Wojciechowski  
*Guest Editors*



Participants of the European Conference Physics of Magnetism (PM'08), Poznań, Poland, June 24–27, 2008.