



Workshop on Recent Trends in Nanomagnetism and Spintronics September 28-30, 2016



Jointly organized by

Kohat University of Science and Technology (KUST), Kohat
&
National Centre for Physics (NCP), Islamabad

Introduction

The Physics department of Kohat University of Science and Technology (KUST) and National Centre for Physics (NCP) is jointly organizing a 3-days workshop on 'Recent trends in nanomagnetism and spintronics' on September 28-30, 2016. This workshop will center around the lecture-series of Prof. Wolfgang Kuch from the Freie Universität Berlin, who is a renowned expert in nanoscopic magnetic systems such as molecules adsorbed on solid surfaces or ultrathin films including multilayers, surfaces, and patterned structures. The fundamental investigation of such kind of systems with new functional properties is important, or may become important, for applications in magnetic data storage technology, magnetic sensors, or magnetoelectronic devices. The workshop would include scientific lectures by Professor Kuch on the latest trends in this area as well as tutorials and discussion on advanced concepts and techniques of magnetic characterization such as magneto-optical Kerr-effect (MOKE), ferromagnetic resonance (FMR), spin polarized scanning tunneling microscopy (SP-STM), photoelectron emission microscopy (PEEM), X-ray absorption spectroscopy (XAS), X-ray magnetic circular dichroism (XMCD), X-ray linear dichroism (XLD), and near edge X-ray absorption fine structure (NEXAFS). Tutorial topics will include magnetism in reduced dimensions including basics of magnetism and magnetic layered systems and magnetic domains. Limited number of oral presentations will also be offered by local experts in the areas of magnetism, multiferroics and nanostructures. This workshop will provide an opportunity for students and young researchers to interact with and gain from local and international experts of the field. Other participants would be expected to participate in poster presentation of their work in the relevant field.

Participation

Research students, post-doctoral researchers, faculty members and research scientists who are actively involved in the related research areas are encouraged to apply for participation and presentation (oral or poster). Selected applicants will be required to pay Rs. 1000/- as registration fee upon arrival at venue. However, there is no registration fee for poster presenters and seminar presenters. The travel expenses of the participants shall be borne by the parent institutes. Partial travel assistance may be provided to selected outstation student participants on merit basis.

How to Apply

Application form should be filled online (<http://www.ncp.edu.pk>) or email the filled registration form to (yaqoobkhattak@hotmail.com; sultan@ncp.edu.pk) before **September 05, 2016**. Selected candidates will be informed through email before September 16, 2016.

Sponsors

- German Academic Exchange Service (DAAD), Germany
- Higher Education Commission (HEC), Islamabad, Pakistan
- National Center for Physics (NCP), QAU Campus, Islamabad, Pakistan
- COMSTECH, Islamabad
- Kohat University of Science and Technology (KUST), Kohat, Pakistan

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Haris Bin Nazar (NCP)
Amjad Khan (KUST)

Keynote Speaker

Dr. Wolfgang Kuch (Frei Universität, Berlin)

Invited Speakers / Lecture Topics

Dr. S. K. Hasanain: *From magneto-resistance to spintronics*

Dr. Shahid Nisar: *Treating cancer magnetically*

Dr. Abdullah Yar: *Memory effects in ac-driven molecular nano-junctions*

Dr. Amin ur Rashid: *Optimizing magnetic anisotropy of $La_{1-x}Sr_xMnO_3$ nanoparticles for hyperthermia applications*

Dr. Gul Rahman: *Electronic and magnetic structures of MoS_2 : Density functional theory calculations*

Dr. Ghulam Hassnain Jaffari: *Exchange bias in hollow nanoparticles*

Dr. M. Yaqoob Khattak: *Pinned magnetic moments in exchange bias: Role of the antiferromagnetic bulk spin structure*

Dr. Muhammad Sultan: *Magnetization dynamics study by femtosecond laser pulses*

Mr. Oliver Sandig: *Movement of magnetic domain wall using femtosecond laser pulses*

Dr. Saifullah Awan: *Physics behind nano-magnetism of permanent magnets*