

Guest Editorial

This issue of *Pramana – J. Phys.* consists of some of the papers presented in the International Workshop on the Physics of Mesoscopic and Disordered Materials (MESODIS–2006) held at the Indian Institute of Technology (IIT) Kanpur during 4–8 December 2006. The aim of the workshop was to review the recent progress in the areas of Mesoscopic Physics and Disordered Materials, and explore emerging directions in both basic physics and technological applications of the materials. The lectures covered a wide variety of topics such as nanomaterials, mesoscopic physics, disordered materials, superconductivity, computational and simulation methods etc. The workshop was intended to bring theorists and experimentalists to a common platform to foster multidisciplinary research and cross-fertilization of ideas.

New emerging areas such as spintronics, new ideas in the study of nonequilibrium statistical properties of mesoscopic systems and new materials such as graphene and photonic metamaterials were also discussed in the workshop. Novel nanoscale fabrication and characterization techniques as well as the tremendous enhancement of computational power have made possible accurate comparison between experiments and theory. The enhanced computational power has made it possible to include electron–electron interaction effects in the study of disordered materials. New theoretical and computational approaches have been evolved to study strongly correlated electronic systems and there have been great advances in the areas of electronic structure calculations and density functional theory. The discussions in the workshop explored connections between these varied areas and indicated future directions of research likely to emerge. The twenty papers contained in these proceedings, consisting of both invited papers and contributed papers, represent these discussions.

It gives us great pleasure to bring out the proceedings of this workshop in this issue. We would like to thank the people and organizations who have made it possible to organize the workshop and the publication of the proceedings. We thank the members of the international advisory committee for their help in the selection of speakers and for their cooperation. We are grateful to the members of the local organizing committee, and many other colleagues and students who put in great efforts to make it a successful event. We thank all the participants for their deliberations in the workshop and contributions which made it possible to bring out the proceedings in this issue.

The organizers of the workshop acknowledge the generous support received from the Abdus Salam International Center for Theoretical Physics, Trieste (Italy), Asian Office of Aerospace Research and Development (USA), Board

of Research in Nuclear Sciences, Council of Scientific and Industrial Research, Department of Science and Technology, IEEE UP Section, IIT Kanpur, Indian National Science Academy, Indo-US Science and Technology Forum, S.N. Bose National Center for Basic Sciences, Excell Instruments, Icon Analytical, JK Cement, Specialise Instruments and Toshinwal Brothers.

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(Guest Editors)

25 November 2007