Hybrid Inorganic/Organic Systems for Opto-Electronics

Collaborative Research Centre 951

Special Colloquium Announcement

of the Collaborative Research Centre 951
"Hybrid Inorganic/Organic Systems for Opto-Electronics"

Saw-Wai Hla

Ohio University and Argonne National Laboratory, USA

From Synchrotron X-ray Scanning Tunneling Microscopy to Quantum Molecular Machines

Time: Monday, October 22, 2018, 11 a.m. **c.t.**

Place: IRIS Adlershof, Zum Großen Windkanal 6, Room 007 (ground floor).

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From Synchrotron X-ray Scanning Tunneling Microscopy to Quantum Molecular Machines

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Synchrotron X-ray Scanning Tunneling Microscopy (SX-STM) combines two of the most vital material characterization methods of materials science. SX-STM enables simultaneous measurements of topography together with elemental, chemical, and magnetic contrast of materials potentially down to atomic scale. This talk will present our latest results of magnetic thin films and molecules adsorbed on materials surfaces measured by means of XMCD, NEXAFS, and XAS methods with a scanning tunneling microscope tip. At the second part, operation of molecular machines using STM manipulation schemes will be presented. These investigations reveal how charge and energy transfer are taken place within single molecular machines as well as among the molecular machines in the molecular networks. The potential impact and future research directions of SX-STM and molecular machines will also be discussed.