

I. Science & Technology for Interfacing to the Nanoscale

(A) Interface Science & Phenomenology at the Nanoscale

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This session will focus on the physical/chemical/structural/optical/electronic properties of interfaces in the context of nano-devices. Important questions to be addressed include such aspects as: how does one define an interface in a nano device; and what are the unique properties and the effects of interfaces which are themselves of the same scale as the device feature size.

Specific Areas of Emphasis:

- Structure/chemistry/properties and functional responses of nanomaterials interfaces or nanostructured interfaces.
- Included are different types of interfaces in nanostructures (e.g., metal-metal, metal-semiconductor, semiconductor-insulator, metal-insulator).
- Novel probes and techniques for interrogating interface phenomena at a fundamental level to shed light on key bottlenecks, challenges and approaches.
- Nanostructure-thin film interface structure-chemistry-device property relationships.
- Surface/interface specific nanoscale properties and phenomena.
- Interfacial properties of bilayers/multilayers, hybrid particles and nanostructures.