International Conference on New Diamond Science and Technology (ICNDST) and Applied Diamond Conference (ADC) to Be Held Jointly in North Carolina in 2006

www.mrs.org/meetings/workshops/2006/icndst

The **International Conference on New Diamond Science and Technology (ICNDST)** and the **Applied Diamond Conference (ADC)** have a tradition of presenting high-impact scientific and technological advances along with critical developments to enable the application of diamond, carbon nanostructures, and related materials in a diverse range of products and technologies.

The joint conference will be held May 15–18, 2006, at the Embassy Suites Hotel and Conference Center in the Research Triangle Park, North Carolina. The Research Triangle Park area is home to Duke University, North Carolina State University, the University of North Carolina at Chapel Hill and leading research corporations and institutions including the Research Triangle Institute.

The four-day conference will include invited and contributed talks as well as poster presentations, a conference reception, and an optional banquet. A special session on technology transfer is planned, and an equipment and manufacturer exhibit area will display the latest approaches in film growth, characterization, and applications. The conference proceedings will be published in *Diamond and Related Materials*.

The conference will address the following materials: diamond, nanocrystalline and diamond-like films, synthetic high-pressure, high-temperature diamond, nanodiamond, nanotubes, nanostructures and nanostructured carbon films, B–C–N films and nanostructures, and related materials. The conference will stress the most forward-looking science, technology, and applications with particular emphasis on the synergistic aspects that connect them. The following topics will be emphasized:

- **Film and Bulk-Growth Science and Technology:** substrate technologies; nucleation and growth; defect, doping and impurity control; high-pressure, high-temperature synthesis for substrates; and large-area deposition.
- **Nanoscale Science and Technology:** growth mechanisms; control of diameter, doping, chirality, functionalization and properties of carbon nanotubes; nanodiamond formation; adamantine molecular structures; self-assembly; and nanostructure integration.
- **Processing and Device Fabrication:** surface processing, materials integration, nanoscale control, and precision nanofabrication approaches.
- **Phenomena and Characterization:** characterization specifically directed toward critical materials properties and phenomena.
- **Electrochemical and Chemical-Sensing Applications:** electrode sensitivity and range, specific analyte sensitivity, electrode stability, and sensor device structures.
- **Biological and Medical Applications:** biofunctionalization, nonspecific binding, protein adsorption, biosensors, cell adsorption, biocompatibility, toxicity, combinatorial approaches, and biomedical applications.
- **Electronics and UV Optoelectronics:** homoepitaxial growth and defect reduction, doping and high-mobility diamond, power electronics, UV detectors, superconductivity, and superconducting device structures.
- **Particle Detector Applications:** charge collection efficiency, priming and pumping, and thick-film growth processes.
- **Electron Emission Applications:** field-enhancing structures, thermionic emission, field emission, integrated vacuum microelectronics, displays, lighting, and microwave tube applications.
- **Mechanical Properties and Hard Coatings:** friction and wear, nanotribology, superhard and high-pressure materials, and superflat materials.
- **Micro/Nanoelectromechanical Systems and Micro/Nanofluidic Device Structures:** strain control, fabrication approaches, precision nanostructure formation, diamond film microfluidics, and nanotube fluidics.
- **Thermal Management and Energy Materials:** integrated Si-on-diamond wafers, thermionic/thermoelectric energy conversion, nanostructure heat transfer and cooling, fuel cell membranes, and thermo-photovoltaic structures.

The abstract submission deadline is December 8, 2005.

The program will be announced in January 2006. Additional information on abstract submission and all other aspects of the conference is available on the conference Web site at www.mrs.org/meetings/workshops/2006/icndst.

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