

## **Program Sessions April 24-28, 2011**

### **Panel Session1: Nanotechnology initiative**

- 1.1 Initiating nanoscience and nanotechnology program in academia, private sector and government institutions
- 1.2 Ingredients of nanoscience and nanotechnology initiative
- 1.3 Funding strategies in a nano initiative
- 1.4 Key player consideration in nano initiative
- 1.5 Ethical issues in nano program
- 1.6 Planning and management of resources

### **Session 2: Nanoenergy**

- 2.1 Organic nanophotovoltaics, current trends
- 2.2 Inorganic nanophotovoltaics, developments and roadmaps
- 2.3 Fuel cell synthesis, current issues
- 2.4 Architectures and nanostructures consideration in solar cell
- 2.5 Increasing efficiencies of nanosolar cell
- 2.6 Applications of nanosolar and nano fuel cells
- 2.7 Nanocomposites techniques and nanoenergy

### **Session 3: Nanomedicine**

- 3.1 Synthetic consideration in nanomedicine
- 3.2 Nanodrug delivery for HIV/AIDS, tumor, cancer, malaria, tuberculosis, etc
- 3.3 Vaccines for HIV/AIDS, malaria, tuberculosis, cholera; synthetic considerations
- 3.4 Stereoselective synthesis in nanovaccines and nanodrug deliveries
- 3.5 Single molecule and their applications in nanomedicine
- 3.6 Nanoemulsion in HIV/AIDS Vaccine synthesis
- 3.7 Approaches to nasal nanodrug deliveries
- 3.8 Nanoparticle approaches in nanomedicine

### **Session 4: Nanofiltration**

- 4.1 Nanofiltration; synthesis and application
- 4.2 Nanofibers and synthetic consideration
- 4.3 Affordable clean water for the poor, the nano option
- 4.4 Nanocomposites and nanofiltration synthesis
- 4.5 Lowering energy consumption in nanofiber synthesis
- 4.6 Problems and solutions in synthesis of nanofilters

### **Session 5: Nanoeducation**

- 5.1 K-12 nanoeducational approaches
- 5.2 Nanoeducation in tertiary institutions
- 5.3 Nanoeducation; private and government institution considerations
- 5.4 Demands in funding nanoeducation
- 5.5 Government and private sector contributions
- 5.6 Linking the academia to policy makers

### **Session 6: Nanosensors**

- 6.1 Chemical and material considerations in the synthesis of nanosensors
- 6.2 Increasing the sensitivities of nanosensors
- 6.3 Nanostructures and supramolecular
- 6.4 Analytical consideration in nanosensors
- 6.5 Applications of nanosensors
- 6.6 Portability in nanosensors

### **Session 7: Nanotech strategies and policies**

- 7.1 Formulation of nanotech strategies
- 7.2 Guiding principles of a nanotechnology policies
- 7.3 Global nanotech policies and strategies
- 7.4 International nano collaboration
- 7.5 Bridging the nanodivide
- 7.6 Responsibilities toward developing nations

### **Session 8: Industrial development**

- 8.1 Business plan for nanoindustries
- 8.2 Research and discovery and nanopatenting
- 8.3 Recruiting nanoexperts
- 8.4 Nanofinancing
- 8.5 Marketing nanoproducts
- 8.6 Creating the appropriate networks of nanoinvestors

### **Sessions 9: Nanoagriculture**

- 9.1 Healthy crops through nanogene technology
- 9.2 Nanoparticles and their applications in nanoagriculture
- 9.3 Synthetic biology and the options for nanoagriculture
- 9.4 Affordable nanotechniques to increasing food production
- 9.5 Creating relationships between farmers and nanoexperts
- 9.6 Harvesting nanocrops

### **Session 10: Nanocomposites and nanoparticle**

- 10.1 Nanocomposite and nanoparticle synthesis, general principles
- 10.2 Surface synthesis and control
- 10.3 Analysis of nanoparticles and nanocomposites
- 10.4 Increasing strengths of nanocomposites
- 10.5 Tailoring nanoparticles for various applications
- 10.6 Intricate problems in nanoparticle and nanocomposite synthesis and solutions

### **Session 11: Nanoelectronics and nanofilms**

- 10.1 Nanofilms and SAMS
- 10.2 Langmuir-Blodgett Films, application in nanoscience and nanotechnology
- 10.3 Increasing the efficiency of computer; miniaturization
- 10.4 Polymeric nanofilms as dielectrics
- 10.5 Giant magnetoresistance