

ASME Nanotechnology Institute

ASME Nanotechnology Institute

- Advisors
 - Activities
 - Opportunity
 - Role of NI
 - Committee Structure & Function
- nano.asme.org

Advisors

- Arun Majumdar, Mechanical Engineering, U. California, Berkeley (Chair)
- Avram Bar-Cohen, Mechanical Engineering, U. Maryland
- Mildred Dresselhaus, Physics and Electrical Engineering, MIT
- Chih-Ming Ho, Engineering & Applied Science, UCLA
- Mel Human, Mechanical Engineering, North Carolina A&T State U.
- Abe Lee, Mechanical & Biomedical Engineering, U. California, Irvine
- Aric Menon, Microsystems Technology, Tech U. of Denmark
- Al Pisano, Mechanical Engineering, U. California, Berkeley
- Bob Warrington, Mechanical Engineering, Michigan Tech. U.
- Mihail Roco, National Science Foundation
- Michael Roukes, Physics, Caltech
- Raj Manchanda, ASME
- Jack Lloyd, ME, Michigan State - ASME Board of Governors

Advanced Technology Programs

Advanced Technology Programs

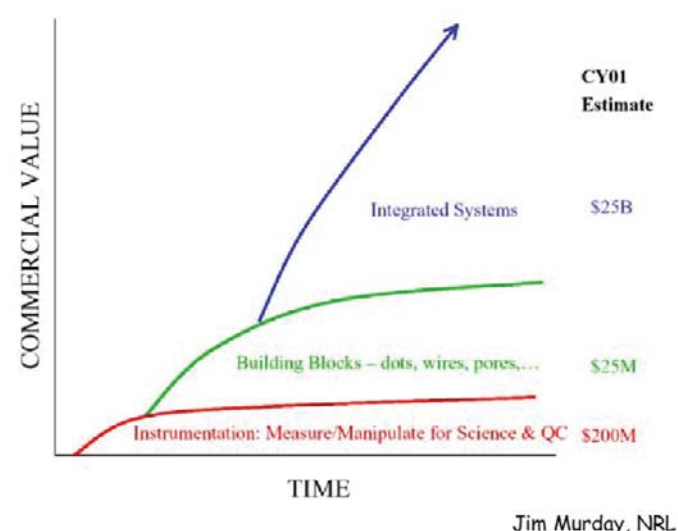
- Biomedicine Miniaturization 2005**
3rd Nano Growth Opportunities for Biotech & Medical Device Sectors Impact Forum and 3rd Bioengineering Technology Seminar
■ April 5-8, 2005 ■ Irvine, California
- Nanomechanics: Sensors & Actuators**
■ May 16-18, 2005 ■ Knoxville, Tennessee
- 3rd International Conference on Fuel Cell Science, Engineering and Technology**
■ May 23-25, 2005 ■ Ypsilanti, Michigan
- 3rd International Conference on Microchannels & Minichannels**
■ June 13-15, 2005 ■ Toronto, Canada
- 3rd Nano Training Bootcamp**
■ July 12-15, 2005 ■ Washington, D.C.
- 4th Integrated Nanosystems - Design, Synthesis & Applications Conference**
■ September 14-16, 2005 ■ Berkeley, California
- European Fuel Cell Technology & Applications Conference**
■ December 14-16, 2005 ■ Rome, Italy

► For information and to register go to: nano.asme.org

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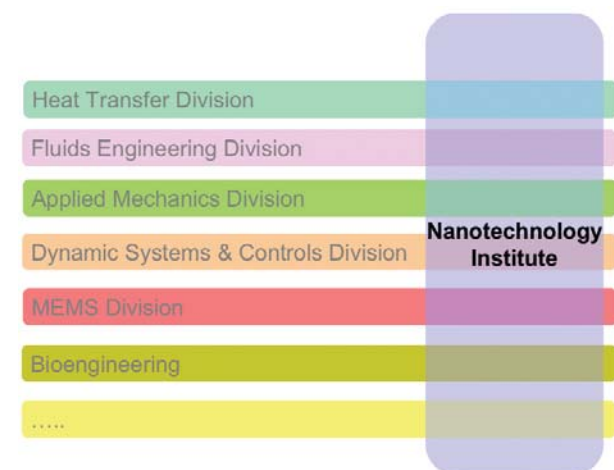
Evolution of Commercial Impact



Role

- What can ME do for nanotechnology?
To facilitate the development of nanotechnology and identify role of ME
- What can nanotechnology do for ME?
To use this opportunity to modernize ME so that it reflects the
 - interdisciplinary nature of modern science and engineering
 - current and future needs as well as diversity of society

Nanotechnology Institute & ASME



| Education | Nanomanufacturing | Devices & Systems |
|---|--|---|
| Chair: Pamela Norris, ME, U. Virginia CoCh: Gang Bao, BioE Georgia Tech. U. Vinayak David, Matl. Sci, Northwestern U. | Chair: Margaret Blohm, GE CoCh: Steve Girshick, ME U. Minnesota S. V. Sreenivasan, ME UT Austin/ Molecular Imprints Vanita Mani, GE | Chair: CJ Kim, ME, UCLA CoCh: Mark Shannon, ME UIUC Ken Goodson, ME, Stanford Cooligy |
| Develop educational infrastructure and delivery in the area of nanoscale science, engineering and technology. <ul style="list-style-type: none"> • Nano Training Bootcamp • Courses | Foster the growth of manufacturing techniques related to nanotechnology such as synthesis and integration. <ul style="list-style-type: none"> • Integrated Nanosystems • IMECE • Divisional Conf • Focused Workshops | Focus on functional devices and systems that exploit nanoscale phenomena. Systems of interest: energy, information, and biomedical technologies <ul style="list-style-type: none"> • Integrated Nanosystems • IMECE • Divisional Conf • Focused Workshops |

| Nanoscale Phenomena | Govt/Venture/ Social Impact |
|---|--|
| Chair: Gang Chen, ME, MIT CoCh: Zhigang Suo, ME Harvard U. Kenny Breuer, ME, Brown U. | Chair: Tom Kalil, Chanc's Office, UC Berkeley CoCh: Tom Mackin, ME UIUC Rosalyn Berne, Ethics & Religious Studies, U. Virginia Kitu Bindra, Burns Doane |
| Focus on fundamental understanding of nanoscale science that could have relevance in engineering: solid/fluid mechanics; heat transfer; thermodynamics; materials, etc. <ul style="list-style-type: none"> • Integrated Nanosystems • IMECE • Divisional Conf • Focused Workshops | Foster dialogue and interactions between the sci/engr communities and govt, private investment and media <ul style="list-style-type: none"> • Integrated Nanosystems • Focused Workshops |

Bootcamp Topics

- | | |
|---|---|
| Foundation <ul style="list-style-type: none"> • Quantum Mechanics • Statistical Mechanics • Molecular/Cell Biology Nanostructure Properties <ul style="list-style-type: none"> • Mechanical • Electronic and Optical • Thermal • Magnetic • Polymeric Nanodevices <ul style="list-style-type: none"> • Electronic • Optical • Thermolectric • Mechanical | Synthesis <ul style="list-style-type: none"> • Self Assembly • Nanoparticles & Nanowires • Microfabrication/Integration • Microfluidic/Bioanalytical • Soft & Imprint Lithography • Lab Practical Characterization <ul style="list-style-type: none"> • Scanning Probe Microscopy • Electron Microscopy/Spectroscopy • Lab Practical |
|---|---|

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