

Panel 10: Nano-enabled Integrated Systems



2013 NSF Nanoscale Science and Engineering Grantees Conference

Panel 10: Nano-enabled Integrated Systems

- Moderators:
 - Lynnette Madsen, Program Director, Ceramics, Division of Materials Research, NSF
 - Sheryl Ehrman, Keystone Professor and Chair, Chemical and Biomolecular Engineering, University of Maryland, College Park
- Panelists:
 - **Robert Westervelt, Harvard University**, Director of the NSF-funded Nanoscale Science and Engineering Center, Science of Nanoscale Systems and their Device Applications, Mallinckrodt Professor of Applied Physics and of Physics
 - Interests: quantum behavior of electrons inside nanoscale semiconductor structures, and tool development for the manipulation of biological systems
 - **Veena Misra, North Carolina State University**, Professor of Electrical and Computer Engineering
 - Interests: high-k and metal gates for III-V substrates, advanced non-volatile memories, atomic layer deposition of nano-particles, nanostructured organic photovoltaics, GaN devices for power/RF applications and nanomagnetism for beyond CMOS

Questions

- What nano-enabled products are near maturity (near term applications)?
- What are the long-term applications?
- What is the role of nanomanufacturing in applications that utilize nanomaterials but may not have nanoscale features? What are the research gaps?
- What are the challenges in systems integration of nano-enabled systems? Do nano-systems engineers exist? Do they need to exist?



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