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Nanoelectronics Research Initiative: A Partnership for Exploratory Research

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Summary

The Semiconductor Research Association (SIA) in partnership with National Science Foundation (NSF) has established the Nanoelectronics Research Initiative (NRI) in 2004 with ten to twenty years nanoelectronics research goals. NIST has joined this initiative in 2007. The main NRI objective is that to discover and reduce to practice by 2020 novel non-CMOS devices, technology and new manufacturing paradigms, which will extend the historical cost/function reduction, along with increased performance and density for another several orders of magnitude beyond the limits of CMOS. Two components of NRI will be presented: (a) NSF-NRI Graduate Student and Postdoctoral Fellow Supplements to NSF Centers in Nanoelectronics, and (b) A network of four centers working together with the existing NSEC and MRSEC networks in the U.S.

The initial outcomes in research and education of NRI and their integration with other programs as part of the National Nanotechnology Initiative (NNI) will be discussed. The NNI is a long-term program announced in 2000 that coordinates 25 departments and independent agencies with a total budget estimated at about \$1.5 billion in fiscal year 2009.