

NANOTECHNOLOGY FOUNDATION FOR EMERGING TECHNOLOGIES

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Abstract

The unifying vision of nanotechnology formulated about 2000 has inspired the U.S. National Nanotechnology Initiative (NNI) and other national programs. NNI involves over thirty U.S. research and regulatory federal agencies with a cumulative public R&D investment by 2023 of about \$40B. The presentation will outline current research trends after twenty-two years of NNI investments, and underline convergence of nanotechnology with other foundational technologies.

Nanotechnology progress has inspired and enabled novel emerging science and technology fields. Nanotechnology has provided a foundation for semiconductors, quantum information systems, wireless communication, and advanced manufacturing. A current NNI challenge is nano4EARTH addressing sustainability, climate change and clean energy. Convergence of nanotechnology with modern biology, information, cognition, and artificial intelligence systems are envisioned to generate novel science and technology platforms supporting the economy of the future.