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The National Nanotechnology Initiative in the International Context

Mihail C. Roco

National Science Foundation and National Nanotechnology Initiative

Abstract

The twenty year outlook for nanotechnology development was formulated about 2000 (NNI), with the promise to create basic understanding and a general purpose technology with mass and sustainable use by 2020 (“Nanotechnology Research Directions” Springer 2000; “*Nanotechnology Research Directions for Societal Needs in 2020*” Springer 2011, www.wtec.org/nano2/). NNI outcomes including the number of paper publications, patents and their citations are presented in comparison to other regions and global results. NNI priorities are funded under several ‘Signature initiatives’ since 2011: (a) Nanoelectronics for 2020 and Beyond; (b) Sustainable Nanomanufacturing; (c) Nanotechnology for Solar Energy; (d) Nanotechnology Knowledge Infrastructure, and (e) Nanosensors. A current focus is on the third generation of nanotechnology products including nanosystems, self-powered nanodevices, and nano-bio assemblies. There is an increased focus on nanoscale science and engineering integration with other knowledge and technology domains and their applications (“*Converging Knowledge, Technology and Society: Beyond Nano-Bio-Info-Cognitive Technologies*”, Springer 2013, www.wtec.org/NBIC2-Report/). The global nanotechnology labor and markets are estimated to double each three years, reaching a \$3 trillion market encompassing 6 million jobs by 2020. The collaboration and interdependence among the U.S. and S. Korean programs will be discussed.