

# Nanomanufacturing for Medicine and Energy

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## Abstract

I will first talk about the NSF Nanomanufacturing Program and the grand challenges of nanomanufacturing research. I will then discuss my laboratory's recent research efforts in nanophotonics that use plasmonic effects for nanoscale light manipulation and nanofabrication. I will also present several on-going projects in using such advanced micro/nano-fabrication methods for the development of biomedical micro/nano-devices and energy-on-a-chip systems.

## About the Speaker

Dr. Chen is the Program Director for the Nanomanufacturing Program at the National Science Foundation. He manages the technical and financial aspects of the program. He also leads the efforts in defining the scope and future directions of the Program. Dr. Chen is on leave from The University of Texas at Austin where he is a Professor and Henderson Centennial Endowed Faculty Fellow in the Mechanical Engineering Department. He received a Ph.D. in Mechanical Engineering from the University of California at Berkeley in 1999. His current research interest includes nanophotonics, nanomanufacturing, laser engineering, biomaterials and nanomedicine, and energy nanotechnology.

Dr. Chen received a CAREER Award from the National Science Foundation in 2001, an Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers in 2002, and a Young Investigator Award from the Office of Naval Research in 2004. He received AIAA Best Paper award in 2006. He is a committee member of the ASME Nanotechnology Institute and IEEE Nanotechnology Council. Dr. Chen is an Associate Editor of *ASME Journal of Manufacturing Science and Engineering* and *Journal of Biomedical Nanotechnology*. He is an editor of a book – “*Nanomanufacturing*” (American Scientific Publishers, 2009) and serves on the Editorial Board of *Nanomedicine* and *Biofabrication*. He was a Guest Editor in 2003 for *IEEE Transactions on Advanced Packaging: Special Issue on NEMS/MEMS Packaging*. Dr. Chen is a Fellow of the American Society of Mechanical Engineers (ASME) and a Fellow of the International Society for Optical Engineering (SPIE).