

The National Nanotechnology Coordinated Infrastructure Program: From Network-Wide Activities to A Site-Specific Project

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Abstract:

The National Nanotechnology Coordinated Infrastructure (NNCI) is a network of sixteen nanotechnology facility nodes strategically positioned across the nation. Its mission is to make state-of-the-art nanotechnology fabrication and characterization equipment, together with associated research expertise, available to the broader research and education community. The NNCI also provides opportunities for outreach to K-12 and undergraduate students to participate in nanotech activities, with the goal of growing the researcher pipeline and educating the general public about the benefits of nanotechnology. This talk will discuss the NNCI and its mission, including some of the broader network activities that allow for efficient execution of its mission and making the network more than the sum of its parts. By way of example, some key points of the Mid-Atlantic Nanotechnology Hub will also be discussed to illustrate the breadth of equipment and expertise that can be made available. Finally, as a use case, an example of the commercialization of NNCI/MANTH-supported research will be discussed: the nano-enabled production of new materials for ultracompact DC/DC power converters.

Bionote

Mark G. Allen received the B.A. degree in chemistry, the B.S.E. degree in chemical engineering, and the B.S.E. degree in electrical engineering from the University of Pennsylvania, Philadelphia, and the S.M. and Ph.D. degrees from Massachusetts Institute of Technology, Cambridge. In 1989 he joined the faculty of the School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, ultimately holding the rank of Regents' Professor and the J.M. Pettit Professorship in Microelectronics, as well as a joint appointment in the School of Chemical and Biomolecular Engineering. In 2013 he left Georgia Tech to become the Alfred Fitler Moore Professor of Electrical and Systems Engineering and Scientific Director of the Singh Nanotechnology Center at the University of Pennsylvania. His research interests are in the development and the application of new micro- and nanofabrication technologies, as well as MEMS. Dr. Allen has held the posts of Editor-in-Chief of the Journal of Micromechanics and Microengineering, co-chair of the IEEE/ASME MEMS Conference, and co-founder of multiple MEMS companies, including Cardiomems, Axion Biosystems, and Enachip. He is a Fellow of the IEEE, and received the IEEE 2016 Daniel P. Noble Award for contributions to research and development, clinical translation, and commercialization of biomedical microsystems.