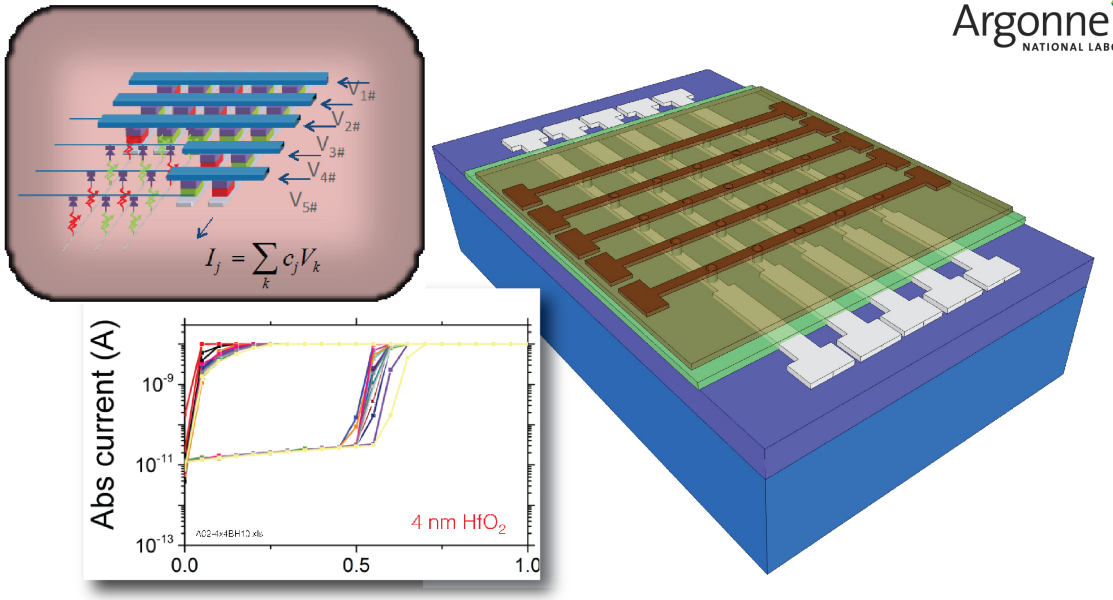

Supratik Guha

Nanomaterials for Practical Applications: Opportunities in Computing and the Internet-of-things

After more than two decades of nanomaterials research, we now have great control over their synthesis, properties, and manipulation. A worthwhile goal for the next decade would be to use these materials for disruptive technologies and products for the public good. This talk will describe work and opportunities in a couple of areas of potential impact for nanomaterials: in computing and the internet-of-things as applied to fields such as agriculture.

Supratik Guha is the Director of the Nanoscience and Technology Division and the Center for Nanoscale Materials at the Argonne National Laboratory, and a Professor at the Institute for Molecular Engineering at The University of Chicago. Dr. Guha came to Argonne in 2015 after spending 20 years at IBM Research where he last served as the Director of Physical Sciences. At IBM, Dr. Guha pioneered the materials research that led to IBM's high dielectric constant metal gate transistor, one of the most significant developments in silicon microelectronics technology. He was also responsible for initiating or significantly expanding IBM's R&D programs in silicon photonics, quantum computing, sensor based cyberphysical systems and photovoltaics. Dr. Guha is a member of the National Academy of Engineering and a Fellow of the Materials Research Society, the American Physical Society, and the recipient of the 2015 Prize for Industrial Applications of Physics. He received his Ph.D. in materials science in 1991 from the University of Southern California, and a B.Tech. in 1985 from the Indian Institute of Technology, Kharagpur. At Argonne, his interests are focused on discovery science in the area of nanoscale materials for energy, sensing, and future information processing, and their translation to applications.

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