THE INSTITUTE FOR MOLECULAR ENGINEERING

THE UNIVERSITY OF CHICAGO

Supratik Guha

PROFESSOR IN MOLECULAR ENGINEERING

Director, Nanosciences and Technology Division, Argonne National Laboratory

Director, Physical Sciences, IBM Research (2010-2015)

EDUCATION

PhD, Materials Science, University of Southern California

B. Tech, Metallurgical Engineering, Indian Institute of Technology, Kharagpur

Supratik Guha is a materials scientist whose interests lie in new materials and devices for non-Boolean computing architectures, cyberphysical sensing systems, and energy conversion technologies. He is also the Director of the Nanoscience and Technology Division at Argonne National Laboratory. He has extensive industrial research and development experience, having spent twenty years at IBM Research where he was the Director of Physical Sciences between 2010-1015.

Supratik pioneered the materials research that led to IBM's high-k metal gate transistor technology, one of the most significant developments in silicon CMOS technology. The processor chips in over fifty percent of smart phones and tablets sold today use nanoscale dielectrics and processes developed by Supratik. His research interests lie in transitioning materials from their initial discovery and fundamental study phase to exploiting them to build useful electronic and optical devices that can be parts of useful systems. Working in this mode he has many important contributions to solar cell research, silicon microelectronics and nitride semiconductors. His more recent research has been in sensor-based studies for geo-spatial applications such as high-resolution agriculture and the tracking of pollutants in rivers.

Supratik began his career as a post-doc in the Esaki-Chang group at the IBM T.J. Watson Research Center in 1991. After a brief stint at 3M Corporate Research Labs from 1992 to 1995, he returned to IBM in 1995 and stayed there till 2015. Supratik was awarded the 2015 Industrial Applications in Physics Prize from the American Physical Society and the 2013 IBM Corporate Award for his work on high-□ metal gate technology. He is a Fellow of the Materials Research Society and the American Physical Society. He was elected to the National Academy of Engineering in 2014.