

*Holcombe Department of Electrical and Computer Engineering
Lecturer Presentation*

Nanotechnology: From Atoms to Systems

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Abstract

Over the course of human civilization, we have witnessed various technological eras. These long and distant periods of history are remembered today based on the materials that were used, e.g. stone age, copper age, iron age, and more recently silicon age. We are now witnessing a new technological age of nanotechnology, which would be remembered by how we use the materials by engineering them at the atomic and the molecular scale. This atomic and molecular engineering at the nanoscale distinguishes the nanotechnology era from the previous ones. Exploring this wonderful and exciting world of nanotechnology is what this talk is all about. My objective is to introduce the newcomers to what I would like to call the greatest intellectual journey human mind has ever ventured. I will start the discussion from a single atom and lead the audience to system level design enabled by the bottom up approach towards nanotechnology in various engineering and scientific disciplines.

Biography of Speaker



Hassan Raza is currently a visiting faculty at Georgia Southern University, Statesboro, GA. He is also affiliated with the International Centre for Theoretical Physics (ICTP) Trieste Italy as an Associate member. He has received “Magoon Award for Excellence in Teaching” from Purdue University in 2004. He is also the recipient of “Presidential Faculty Fellowship” in 2010 and “Old Gold Fellowship” in 2011 from the University of Iowa. He has served as an editor of a book on Graphene Nanoelectronics published by Springer in 2012. He has also published a freshman level textbook on Nanotechnology and a senior undergraduate/graduate textbook on Nanoelectronics in 2019. His research is focused on “anything that is small” for solving the complex problems from theoretical, experimental and computational approaches. He has had the pleasure of teaching undergraduate and graduate students at the University of Iowa,

Rowan University, Georgia Southern University, Quaid-e-Azam University, University of Engineering and Technology, and University of the Punjab. He was a postdoctoral associate at Cornell University in 2007-09. He received his PhD (ECE) in 2007 and MS (ECE) in 2002 from Purdue University, MS (Operations Management) in 2016 from the University of Arkansas and BS in 2001 from the University of Engineering and Technology, Lahore.