

**Jaewu Choi, Wayne State University**

Title of Talk: [Dancing Nanostructures and Their Applications](#)

**Abstract:**

Over two hundred types of nanostructures have been developed in the last two decades. Among them, carbon nanotubes play the central role in accelerating and promoting nanotechnology. Based on carbon nanotubes, many new sciences have been identified and potential technologies have been demonstrated. However, with the recent advance in nanoscience and nanotechnology, the implementation of nanotechnology to the real world is still far from reality. Among the huddles, the lack of controlled nanofabrication is the most significant one. In this presentation, I would like to present the recent research activity of my research group toward overcoming these huddles. This includes the unusual nanofabrication of carbon nanotubes and silicon nanowires as well as their applications. These depend less on the details of nanostructures for advanced sensors, electromechanical devices, energy conversion devices and single molecular nonvolatile memories by incorporating conducting polymers and ferroelectric polymers. The ultimate goal of the research is developing flexible electronics, sensors, displays and power conversion devices.

**Biosketch:**

Dr. Jaewu Choi studied physics for his bachelor degree at Cheonbuk National University, Korea. In 1991 he received a M.S. degree in physics from Cheonbuk National University, Korea. He studied condense matter physics for his Ph.D. degree from the Physics Department at the University of Nebraska-Lincoln. Under the guidance of Prof. Peter A. Dowben, he completed his Ph.D. in surface science in 1998. For his Ph.D. degree, he studied surface ferroelectric transitions using various ultra-high-vacuum surface analytical methodologies. In 1998, he was appointed to a research associate position at the synchrotron radiation center, the Center for Advanced Microstructures and Devices, at Louisiana State University. He developed an ultraviolet photoemission beamline and an end station, and studied the electronic, chemical and structural properties of molecular, polymeric and nano-structural systems. In 2001 he joined the faculty of the Electrical and Computer Engineering, Wayne State University.

His present research focuses on the study of the electrical, structural, and interfacial properties of one-dimensional nonstructural systems including nano-manufacturing of nanotubes and nanowires and the implementation of nano-electronic and mechanical devices and energy conversion devices.