

Physics Colloquium

Michigan Technological University

Thursday, September 17, 2009

4:00 pm

Room 139 Fisher Hall

Carbon and Non-Carbon Nanotubes: Controlled Growth and Applications



Yoke Khin Yap

**Physics Department
Michigan Technological University**

Inorganic nanotubes represent a unique class of nanomaterials in which all atoms are located near the surface. Since electron flows on nanotubes are confined near the surface, nanotubes are especially attractive for electronics and sensing applications. In this seminar, controlled growth of a series of inorganic nanotubes and the possible growth mechanisms will be reviewed, in particular, vertically-aligned carbon nanotubes (CNTs), boron nitride nanotubes (BNNTs), ZnO nanotubes (ZnO NTs), and Si nanotubes (SiNTs). Structural, optical, and electronic properties of these nanotubes as well as their potential applications will also be discussed.

Yoke Khin Yap acknowledges supports from NSF *CAREER* Award (DMR# 0447555), DARPA/Army Research Lab. (#DAAD17-03-C-0115), DOE (# DE-FG02-06ER46294), USDA (#2007-35603-17740), DOA (W911NF-04-1-0029 through CCNY), NSF *MRI* (DMR 0820884), NSF *CMMI* (CMMI 0926819), CNMS at Oak Ridge NL, CINT at Sandia NL, and EMC at Argonne NL.

Professor Yoke Khin Yap received his Ph.D. in 1999 from Osaka University as a “*Monbusho*” scholar. He was a fellow of the *Japan Society for the Promotion of Science (JSPS)* before joining Michigan Tech in 2002. Professor Yap received the National Science Foundation *CAREER* Award in 2005. He has published more than 150 articles including book and encyclopedia chapters, review papers, peer-reviewed articles, and conference proceedings. His research program at Michigan tech is supported by DOA, NSF, DARPA, DOE, USDA, *Argonne National Laboratory*, and multiple DOE Nanoscale Science Research Centers. Professor Yap is also serving multiple scientific groups. He is the first elected Chair of the user group of the *Center for Nanophase Materials Sciences* at *Oak Ridge National Laboratory*.