

# UNH Materials Science Seminar

13:10-14:00, Wednesday, March 2, 2011

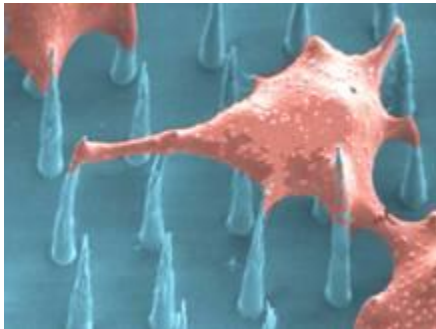
DeMeritt 240

University of New Hampshire

## Evolution of a stick: Vertically aligned carbon nanofibers for cellular interfacing

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The ability to synthesize carbon nanofibres (CNFs) with a high degree of control over their geometry, location and structure via catalytic plasma-enhanced chemical vapor deposition has expanded the possibility of new applications. The nanoscale dimensions and high aspect ratio of vertically aligned carbon nanofibres (VACNFs), along with favorable physical and chemical characteristics, has provided a nanostructured material with properties that are well-suited for interfacing with live cells and tissues. Some of the aspects of synthesis, integration and functionalization of VACNFs, followed by examples of how VACNFs have been used to interface with live systems for a variety of advanced nanoscale biological applications will be described.

**Dr. Anatoli Melechko** is an associate professor in the Department of Materials Science and Engineering, North Carolina State University. His research interests lie in synthesis of functional nanomaterials, which include vertically aligned carbon nanofibers and metal nanoparticles, as well as their integration in devices with nanoscale elements. His special focus is on utilization of nanofiber arrays for gene delivery and neuronal interfacing. Dr. Melechko received his M.S. in Physics from Novosibirsk State University, Novosibirsk, Russia in 1992 and Ph.D. in Physics from University of Tennessee, Knoxville in 2001. He came to North Carolina State University in 2008 from Oak Ridge National Lab, where he worked as staff scientist at the Center for Nanophase Materials Sciences and Materials Science and Technology Division.

Host: Prof. Karsten Pohl, x4197