PURDUE UNIVERSITY SCHOOL OF AERONAUTICS AND ASTRONAUTICS

The AAE Spring 2016 Colloquium Series
presents

"Surface Analysis Research Capabilities at Birck Nanotechnology Center"

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Abstract

Material characterization is an important aspect for various applications. In particularly, for 2D materials and nano-materials, the surface characterization becomes crucial for smart material design, functionalization and micro/nanofabrication. Surface Analysis Facility at Birck Nanotechnology Center, Purdue University, equipped with state-of-art analytical equipment, which can greatly benefit many researchers from Schools of Engineering and College of Science. I would like to demonstrate examples of the studies using X-ray photoelectron spectroscopy (XPS), scanning tunneling microscopy/spectroscopy (STM), high–resolution electron energy loss spectroscopy (HREELS), low energy electron diffraction (LEED). The applications of these techniques will be represented for the studies of 2D materials and thin films (graphene, phosphorene, BN, MoS_2), atomic layer deposition and biologically-inspired surfaces (briefly).

Bio

Dmitry Zemlyanov received his Ph.D. in Physics and Mathematics from the Novosibirsk State University, Russia, in 1995. He is currently a Senior Research Scientist - Surface Science Application at Birck Nanotechnology Center, Purdue University. He held research and teaching positions in premier scientific organizations in Russia, Ireland and Germany prior to joining Purdue and published over 115 journal papers in the areas of surface science, catalysis and materials science. At Purdue, he collaborates with a wide variety of research groups from College of Science and College of Engineering enabling them to develop and apply advanced scientific instrumentation in the area of surface characterization.