

Characterization of functionalized silicon surfaces and graphenes using synchrotron radiation PES

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Employing synchrotron radiation based photoemission spectroscopy (PES) and scanning tunneling microscopy (STM), our group have investigated Si surfaces, various graphenes and molecular nanolayers. In this talk, I introduce recent results on the surface related systems. All experiments have been performed at the surface science beamlines, 3A2 and 7B1, in Pohang Accelerator Laboratory, where high resolution PES (HRPES) and angle resolved PES (ARPES) are available. Metals or molecules are adsorbed and sometimes extreme ultraviolet is irradiated onto surfaces to give them special functions. I show several examples for surface functionalization and how to characterize solid surface using the analysis techniques. In particular, lots of ARPES and STM data are provided from graphenes, a strong candidate for replacing Si and conducting oxide currently used in many electronic and optical devices.