

Lecture Title	X-ray Photoelectron and Absorption Spectroscopy Investigations on Molecule Surface Interactions
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Abstract	In this lecture, an overview of the applications of X-ray Photoelectron Spectroscopy (XPS) and X-ray Absorption Spectroscopy (XAS) on catalytically active surfaces will be provided. The identification of surface elemental composition, chemical state, and the nature of surface chemical bonding using XPS and XAS will be demonstrated.
Keywords	X-ray Photoelectron Spectroscopy, X-ray Absorption Spectroscopy, Adsorption, Catalysis, Surface characterization
Level of the audience	Beginners and Experts
Language	English
Contents	1. Chemical Shift: Graphene functionalization 2. CO adsorption on Pt(111) surfaces 3. Molecular adsorption and dissociation of O₂ on Pt surfaces 4. Surface oxide formation, surface reconstruction 5. Acetic acid adsorption and decomposition on Cu₂O surface 6. Identification O-Pt chemical bond in strained Pt overlayer on Cu(111)