

In situ Characterization of Catalyst Activity and Selectivity in Energy Systems

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The field of catalysis research has progressed to the point where spectroscopic characterization of systems under realistic conditions is a requirement. Many tools have been developed to provide a fundamental understanding of reaction mechanisms and catalyst deactivation. X-ray Adsorption Spectroscopy (XAS) has developed as one of the most important tools of these tools since it can reveal data on electronic structure of a catalyst under working conditions (T, P, reacting gasses). This talk will show how we are using in situ (operando) XAS techniques to understand the workings of heterogeneous catalysts for energy conversion.