



Contribution ID: 67

Type: **Oral contribution**

## Identifying dynamic structural changes in catalysts with time and energy-resolved XAS and XES

*Thursday, 5 July 2012 10:10 (20 minutes)*

The directed development of new catalysts necessitates an understanding of the structure - performance relation. Two continuous developments at the SuperXAS beam line of the Swiss Light Source, sub second XAS and XES, allow determining the dynamic electronic and geometric structures of catalysts under in situ conditions. When combined with a quadrupole mass spectrometer or gas chromatograph, direct structure-performance relationships can be determined. Identifying the relevant catalytic structure, e.g. that of the reactive intermediate and / or active site, poses a real challenge. In this talk, I will show how sub-second XAS and XES enable to identify the relevant structure of a catalyst. To come

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**Session Classification:** Catalysis Session 2

**Track Classification:** Catalysis