

Novel in situ techniques for studies of model catalysts

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Invité par Alessandro COATI

Lundi 16 juin à 14h00

Grand Amphi SOLEIL

Séminaires

Motivated mainly by catalysis, gas-surface interaction between single crystal surfaces and molecules has been studied for decades. Most of these studies have been performed in well-controlled environments, and has been instrumental for the present day understanding of catalysis. We have in recent years explored the possibilities to perform experiments at conditions closer to those of a technical catalyst, in particular at increased pressures. In this contribution, results from catalytic CO oxidation over Pd single crystal surfaces using High Pressure X-ray Photo emission Spectroscopy (HPXPS) [1], Planar Laser Induced Fluorescence (PLIF), and High Energy Surface X-Ray Diffraction (HESXRD) [2] will be presented. Armed with structural knowledge from ultra-high vacuum experiments, the presence of adsorbed molecules and gas-phase induced structures can be identified, and related to changes in the reactivity and/or to reaction induced gas-flow limitations. The strength and weaknesses of the experimental techniques will be discussed.

[1] *In situ X-ray Photoelectron Spectroscopy of model catalysts: At the edge of the gap*

S. Blomberg, M.J. Hoffmann, J. Gustafson, N. M. Martin, V. R. Fernandes, A. Borg, Z. Liu, R. Chang, S. Matera, K. Reuter, and E. Lundgren
Phys. Rev. Lett. **110** (2013) 117601.

[2] *High-energy surface X-ray diffraction for fast surface structure determination*

J. Gustafson, M. Shipilin, C. Zhang, A. Stierle, U. Hejral, U. Ruett, O. Gutowski, P. A. Carlsson, M. Skoglundh and E. Lundgren
Science **343** (2014) 758.



Ce séminaire sera suivi d'une pause-café



Formalités d'entrée : accès libre dans l'amphi du Pavillon d'Accueil. Si la manifestation a lieu dans le Grand Amphi SOLEIL du Bâtiment Central, merci de vous munir d'une pièce d'identité (à échanger à l'accueil contre un badge d'accès).

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