

Opportunities in Catalysis Research Using Synchrotron Radiation

Tuesday 10/8/02

Chair: Lars Pettersson

- 1:30-1:40 **Anders Nilsson**
Welcome
- 1:40-2:30 **Gabor Somorjai** *University of California, Berkeley and LBLN*
Need for New Directions of Research at the Frontiers of Catalysis Science
- 2:30-3:00 **Geoff Thornton** *University of Manchester*
Influence of defects on the reactivity of ZnO
- 3:00-3:30 **Anders Nilsson** *Stanford Synchrotron Radiation Laboratory*
Soft X-ray Spectroscopy of Surfaces and Reactions
- 3:30-3:45 Break

Chair: Anders Nilsson

- 3:45-4:15 **Lars Pettersson** *Stockholm University*
Adsorbate-Substrate Bonding: An Experimental and Theoretical MO Picture
- 4:15-4:45 **Miquel Salmeron** *Lawrence Berkeley National Laboratory*
Photoelectron Spectroscopy studies of surfaces in high pressure gas environments: Applications to environmental and catalysis science
- 4:45-5:00 **Discussion**
How important is model experiments for a fundamental understanding of catalysis. Can synchrotron radiation make an important contribution in the future.
- 5:00 Reception together with participants in other workshops

Wednesday 10/9/02

Chair: Miquel Salmeron (to be confirmed)

9:00-10:00 **Jens Norskov** *Technical University of Denmark*
Heterogeneous Catalysis -- Opportunities and challenges

10:00-10:30 **Robert Madix** *Stanford University*
The Dynamic Surface

10:30-10:45 Break

Chair: Anders Nilsson

10:45-11:15 **Uwe Bergmann** *Lawrence Berkeley National Laboratory*
Application of Novel Hard X-ray Spectroscopy to Transition Metal
Systems

11:15-11:45 **Vittal Yachandra** *Lawrence Berkeley National Laboratory*
How Plants Catalyze the Oxidation of Water to Oxygen

11:45-12:15 **Claus Jacobsen** *Haldor Topsö*
New Catalytic Materials - from active sites to industrial
Processes

12:15-1:30 Lunch

Chair: Uwe Bergmann

1:30-2:00 **Bjerne Clausen** *Haldor Topsö*
Structural Aspects of Industrial Catalysts

2:30-3:00 **Javier Guzman** *University of California, Davies*
X-ray Absorption Spectroscopy Investigation of Highly Dispersed
Supported Gold Catalysts

3:00-3:30 **Russell R. Chianelli** *University of Texas at El Paso*
Advanced Synchrotron and Simulation Techniques Applied to Problems in
Catalytic Materials Science

3:30-3:45 Break

3:45-4:15 **Jim White** *University of Texas, Austin*
DOE Catalysis workshop and report.

4:15-5:00

Discussion

How can synchrotron radiation facilities contribute in fundamental catalytic research? Do we need different instrumentation for model experiments and catalyst characterization? Is it essential to have theoretical support?