Synchrotron Catalysis Consortium at BNL : Dedicated Beamline Facilities for Catalysis Research

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SEMINAIRE

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Amphithéâtre SOLEIL

Despite their unique advantages for in situ catalytic studies, synchrotron techniques are often under-utilized or under-explored by the catalysis community because of various perceived and real barriers. For members of catalysis community, participation in synchrotron research would require access to beamline facilities, fabrication of in situ reactors, and knowledge of beamline operations and data analysis, among other things. These requirements present significant hurdles for research groups lacking previous synchrotron experience. Coordinated efforts are needed to assist new users, as well as to develop new capabilities for experienced users. One successful example is the Synchrotron Catalysis Consortium (SCC) consisting of catalysis researchers from academic, national, and industrial laboratories and funded by a grant from U.S. Department of Energy. Since its establishment in 2005 at the National Synchrotron Light Source at Brookhaven National Laboratory, the SCC team has coordinated significant efforts to promote the utilization of cutting-edge catalytic research through the following concerted efforts :

- Dedicated beamlines for XAS and XRD measurements,
- Dedicated gas handling systems and in situ/operando reactors for a variety of catalytic and electrocatalytic studies,
- Dedicated staff to assist with experimental setup and data analysis,
- Training courses and help sessions provided by the SCC team members,
- Assistance in idea development and proposal-writing for potential XAFS users from the catalysis community,
- Development of new in situ/operando techniques for catalytic and electrocatalytic research.

In my talk, I will illustrate scientific accomplishments of our users with a few examples of SCC-enabled research [1] and discuss organizational aspects that may help SOLEIL to set up a consortium in catalysis-related field.

[1]. A. I. Frenkel, J. A. Rodriguez, J. G. Chen. *Synchrotron techniques for in situ catalytic studies: Capabilities, challenges and opportunities,* Perspective, ACS Catalysis **2**, 2269-2280 (2012)

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 piece d'identité
(à échanger à l'accueil contre un badge d'accès)

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