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National Centre for Synchrotron Science



Ansto



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Synchrotron Industry Case Studies over 20+ years

Friday, 25 November 2016 11:45 (15 minutes)

This presentation will provide an overview of industrial studies using synchrotron-based techniques undertaken over the past 20+ years by the presenter. The objective is to provide perspective on the wide scope of possible applications and motivations for industry participation. These applications focus mainly on minerals and materials studies and have included:

- wax crystallisation from diesel fuels using in situ energy dispersive diffraction and powder diffraction at Daresbury Laboratory;
- doping of titania pigments using XAS at Daresbury Laboratory and Hasylab;
- gibbsite precipitation using in situ diffraction at the Photon Factory,
- Cu activation of sulfide minerals using XAS at the Photon Factory,
- analysis of glass lenses at the Photon Factory,
- Pt speciation during refining using XAS at Anka,
- Ni and U mineralogy using microprobe analyses at the Advanced Light Source and Advanced Photon Source,
- Ni laterite leach residues using XAS at Anka,
- analysis of Ni alloys using microdiffraction at the Advanced Photon Source;
- cryogenic treatments of steels using microdiffraction at the Advanced Photon Source,
- chalcopryrite and pyrite leaching using SPEM at Electra and the Advanced Light Source,
- scaling in Bayer refineries using XAS at the Australian Synchrotron,

A wide range of companies have provided support of these studies including Exxon, QAL, Comalco, Alcoa, Worsley, Nabalco, Biliton, Rio Tinto, BHP Billiton, Amplats, Anglo America, Cytec, State Governments and Tiwest. Examples from these studies will be presented. How to involve companies in projects involving synchrotron studies will also be discussed as will the issues limiting greater industry participation.

Keywords or phrases (comma separated)

Bayer refinery; XANES, single stream; scale; aluminosilicate, titanate; amorphous

Are you a student?

No

Do you wish to take part in the Student Poster Slam?

No

Are you an ECR? (<5 yrs since PhD/Masters)

No

What is your gender?

Female

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