

NEW INDUSTRY GATEWAY TO BES USER FACILITIES Improves access to BES synchrotron and neutron facilities for industrial users

The BES-supported synchrotron and neutron scientific user facilities provide unique characterization capabilities that span the spectrum from discovery and use-inspired basic research all the way through to technology maturation and development. Although industry does make use of these facilities, it is clear that their impact could be greatly magnified through targeted industry access modes. A working group from the user facilities and industry has been formed to develop a consortium approach in which an industrial user can access the capabilities of all the facilities through a single online gateway.



The Advanced Light Source (ALS) at Lawrence Berkeley National Laboratory generates light at wavelengths required to see into the world of atoms and electrons, establishing the scientific foundations for the breakthroughs needed for 21st century naterials technologies



The Advanced Photon Source (APS) at Argonne National Laboratory is the brightest storage-ring source of x-rays in the western hemisphere; it is an invaluable aid for researchers trying to solve difficult, challenging, and complex high-tech problems



The National Synchrotron Light Source (NSLS) at Brookhaven National Laboratory is devoted to production and utilization of synchrotron radiation, supporting research in energy sciences, life sciences, materials and chemical sciences, geosciences and ecology, and applied science and engineering



Stanford Synchrotron Lightsource (SSRL) at SLAC Accelerator Laboratory produces extremely bright x-rays to study our world at the atomic and molecular level. advances in energy



ENERGY Office of Science

Radiation National leading to major production nanotechnology, new materials and medicine



The Spallation Neutron Source (SNS) at Oak Ridge National Laboratory provides the world's most intense neutron beams for research on the structure and dynamics of materials in fields such as physics, chemistry, materials science and biology

Engaging Industry

- · Help industry learn about tools and resources.
- · User facilities take a consortium approach, with each supplying beam lines that can be made available and appropriately supported.
- Make available high-throughput workhorse instruments that meet most industrial research needs.
- · Legal and administrative issues that are being addressed:
- DOE indemnification policies
- · Intellectual property agreements
- Advance payment requirements
- Access policies/proposal review criteria
- · For an example of how some of these issues are starting to be addressed, see: J. Wang, et al., "Industrial research enhancement program at the National Synchrotron Light Source," Nuclear Instr. and Meth. in Phys. Res. A 649 (2011) pp. 19-21.

Working Group Formed in 2011

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A recent Basic Energy Sciences Advisory Committee (BESAC) report states that "BES-supported user facilities should seek to increase the level of industrial participation and use by:

•Refining access policies, proposal selection criteria, and time allocations to more fully engage industry-based clean energy research

•Investigating how beam lines and instrumentation could be adapted to the priority research directions and needs of industry

•Engaging beam-line scientists and support staff to provide greater assistance to industrial users solving critical challenges in development and deployment of clean energy technologies."

Improving Outreach to Industry

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Unified Industry Gateway

The facility consortium plans a unified web page that

quides industrial users to the most appropriate beam

line for their research. Industrial users would come to

the web site with a problem or need for a technique and

be led to description of available beam lines and contact

In the area of energy storage, relevant beamlines could

include x-ray and neutron powder diffraction and small-

angle scattering; high energy x-ray diffraction; x-ray

absorption and neutron imaging; and soft x-ray photon

information to obtain beam time.

Website Under Development:

Industry

ron Facilities and Industry

in/out and photoelectron spectroscopies.

Targeted Workshops

Goals:

- Identify key materials and processing problems facing targeted areas.
- · Identify unique tools at all BES synchrotron and neutron facilities that can be used to address critical materials issues.
- · Highlight developments in the facilities for energy related research.
- · Bridge the gap between practical problems and advanced tools and discoveries.

First Planned Workshop Will Focus on Energy Storage and Target:

- Industrial scientists interested in utilizing advanced characterization tools in solving technical problems.
- .Scientists interested in seeing how their curiosityinspired science could lead from science to technology.
- •Industrial mangers interested in learning how their companies could benefit from the access to advanced xray and neutron characterization techniques.
- •Industrial, facility and government lawyers who are willing to work together in breaking down barriers for seamless access of users facility in a timely manner.

