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current events

This section carries events of interest to the synchrotron radiation community. Works intended for this section should be sent direct to the Current-Events Editor (s.s.hasnain@liverpool.ac.uk).

New science funding under the American Recovery and Reinvestment Act benefits synchrotron projects

Energy Secretary Steve Chu announced USD 1.2 billion in new science funding under the American Recovery and Reinvestment Act for major construction, laboratory infrastructure and research efforts sponsored across the nation by the DOE Office of Science. Secretary Chu made the announcement during a recent visit to the Brookhaven National Laboratory.

"Leadership in science remains vital to America's economic prosperity, energy security and global competitiveness", said Secretary Chu. "These projects not only provide critically needed short-term economic relief but also represent a strategic investment in our nation's future. They will create thousands of jobs and breathe new life into many local economies, while helping to accelerate new technology development, renew our scientific and engineering workforce, and modernise our nation's scientific infrastructure."

The DOE Office of Science is the steward of ten national laboratories in eight states across the nation and constructs and operates large-scale scientific facilities such as advanced light sources and nanoscale science research centres that provide the cutting-edge tools of today's advanced energy and physical science research. Many of the Recovery Act projects are focused on these widely used national laboratory facilities. The package also provides substantial support for both university- and national laboratory-based researchers, working on problems in fields ranging from particle and plasma physics to biofuels, solar energy, superconductivity, solid-state lighting, electricity storage and materials science, among others.

The department is poised to move aggressively on these projects, many already existing, some new, to ensure maximum jobs impact and scientific pay-off. One of those to benefit is NSLS II, which was recently granted full approval for construction [*J. Synchrotron Rad.* (2009), **16**, 314–315]. It will receive another USD 150 million to accelerate ongoing construction of NSLS II at Brookhaven National Laboratory (BNL). This new, state-of-the-art, high-intensity light source is expected to facilitate major breakthroughs in next-generation energy technologies, materials science and biotechnology. BNL will also share another USD 123 million with Oak Ridge National Laboratory (ORNL), in Oak Ridge, Tennessee, and Lawrence Berkeley National Laboratory, in Berkeley, California, for major construction, modernization and needed decommissioning of laboratory facilities.

A major fraction of the new investment totalling USD 330 million has gone on operations and equipment at the Office of Science major scientific user facilities, used annually by over 20000 researchers. Facilities supported by Recovery Act funding include, among others, the Spallation Neutron Source at ORNL, the world's most intense pulsed accelerator-based neutron source, used in advanced materials science, chemistry and biology research; the Nanoscale Science Research Centers, located at five national laboratories nationwide, which provide world-leading nanotechnology instrumentation; the ARM Climate Research Facility, a collection of climate measurement facilities located around the globe that gather atmospheric data needed to reduce uncertainty about climate change; the Environmental Molecular Sciences Laboratory, at Pacific Northwest National Laboratory, which provides unique instrumentation and computational capabilities for environmental science; and the Linac Coherent Light Source, currently under construction at the SLAC National Accelerator Laboratory in Menlo Park, California, which will enable scientists for the first time to observe chemical reactions at the molecular level in real time [*J. Synchrotron Rad.* (2008), **15**, 539–541].

Government of Canada invests in new research facilities at the Canadian Light Source

The Canadian Light Source (CLS) will benefit from the construction of two new research facilities that will further Canada's reputation as a world leader in synchrotron technology. 'New ideas and new investments in research are crucial to achieving a better future for all Canadians so we can build a strong competitive economy', said Minister of State Lynne Yelich. "With today's funding, our Government is investing in Canada's only synchrotron facility that will support Canadian researchers and innovators."

"We are grateful for Western Economic Diversification Canada's investments at the Canadian Light Source and appreciate the federal government's commitment to furthering scientific and technological advancement'', said CLS Executive Director Josef Hormes. ''Today's announcement ensures our place among the world's best synchrotrons, providing researchers from across this country and around the world with the finest tools to advance knowledge and benefit Canadian industry and the quality of life of people everywhere."

Western Economic Diversification Canada is committing just over CAD 3.8 million in support of the Quantum Materials Spectroscopy Centre Facility undertaken by the University of British Columbia, and the BioXAS Beamline Facility led by the University of Saskatchewan.

The University of Saskatchewan's BioXAS Beamline Facility is a proposed suite of three new beamlines and ancillary facilities at the CLS. The facility will be tailored for life science studies of metals in living systems using X-ray absorption spectroscopy and imaging. The development of BioXAS complements existing commitments by the CLS and its funding partners to meet the needs of medical and biological research. The addition of a strong BioXAS stands to advance the CLS as a global centre of excellence for biological and health research using synchrotron light.

The University of British Columbia's Quantum Materials Spectroscopy Centre is a state-of-the-art beamline dedicated to performing spin- and angle-resolved photoemission spectroscopy at the CLS. "The University of British Columbia is committed to supporting the enormous potential of the Quantum Materials Spectroscopy Centre at the Canadian Light Source's synchrotron", said Dr Don Brooks, Associate Vice President of Research at the University of British Columbia. 'This important investment by Western Economic Diversification will help propel Canada into the forefront of research to reveal the remarkable electronic properties of a wide range of new materials.'

The CLS is Canada's national centre for synchrotron research [*J. Synchrotron Rad.* (2008), **15**, 423–424]. Located on the University of Saskatchewan campus in Saskatoon, the CLS is building up to be a

strong international synchrotron radiation centre attracting leading projects in environmental sciences, natural resources and energy, health and life sciences, and information and communications technology. Western Economic Diversification Canada works with the provinces, industry associations and communities and promotes the development and diversification of the western economy, coordinates federal economic activities in the West and represents the interests of western Canadians in national decision-making.

First undulator installed in PETRA III

The world's largest and most brilliant storage ring is nearing its completion in Hamburg at DESY. Recently, the first of the fourteen undulator magnets that will generate the brilliant X-ray light for PETRA III was installed in the 300 m-long experimental hall. The few remaining open sectors of the 2.3 km particle accelerator are closing one by one.

The undulator magnets are the central components of the PETRA III facility. Strong permanent magnets, fitted together in alternating polarities, force the electron beam travelling at almost the speed of light on a zigzag course. The electrons then emit synchrotron light of very high energy and intensity that is used for research at the experimental stations. With a variety of construction forms and length of the undulator magnet array, PETRA III will produce light with different individual properties at 14 independent beamlines.

The 5.8 ton PETRA III undulator is lifted into place.