

The 20th International Conference on X-ray and Inner-shell Processes
Melbourne, Australia
4-8 July, 2005

The 20th international conference, X05, in the series X-ray and Inner-shell Processes is to be held in Melbourne, Australia, 4-8 July 2005. The meeting coincides with the construction of the 3 GeV Australian Synchrotron. Development of this major new national facility is led by the State Government of Victoria in partnership with the academic, technological and industrial communities of Australia.

The meeting will be held in Melbourne within the Parkville campus of The University of Melbourne. This venue is able to accommodate up to 350 participants, possesses excellent facilities, and is situated within the historical and cultural heart of the City of Melbourne. It is well-served with public transport within the city, and offers convenient access to Melbourne International Airport.

The aim of X05 is to provide a forum for the discussion of fundamental processes associated with X-ray and inner-shell phenomena, including their application in applied science and technology. The major focus will be on new directions using synchrotron X-ray sources in both the physical and biological sciences. This includes imaging, optics, XAFS, scattering and related areas. Delegates will learn about the latest developments from international science leaders and participate in stimulating discussions on groundbreaking research. The meeting will include plenary talks, progress reports, hot topics and poster presentations. Keynote lectures will be delivered by international experts who are the recognized leaders in their fields. Oral and poster presentations will be published as a special issue of Radiation Physics and Chemistry.

X05 Outline Programme

Keynote lectures will be delivered by international experts who are the recognised leaders in their fields.

X-ray sources and techniques

- ultrafast processes
- developments in detector technologies
- high powered lasers
- synchrotron sources
- free electron lasers

X-ray Optics

- multilayer gratings
- asymmetrical crystals
- spatial and temporal coherence
- imaging and tomography

Photoionization Processes and Highly Charged Ions

- correlation in multiple electron transitions
- studies using EBIT devices and storage rings
- non-dipole photoionization
- photodetachment of negative ions

Atomic, Molecular, Cluster and Nuclear X-ray and Inner-Shell

Processes

- synchrotron radiation-induced nuclear transitions
- nuclear excitation involving inner-shell electrons
- Auger electron spectroscopy
- momentum imaging of molecules
- Vacuum ultraviolet spectroscopy
- two-photon decay
- hollow atoms
- relativistic, QED and parity violating effects

X-ray Scattering

- magnetic circular dichroism
- design of recording media
- studies of thermal motion and point defects

X-ray Processes in Solids and on Surfaces

- EXAFS, NEXAFS, XANES, PES, XAS and EMS
- low-dimensional surface structures
- soft X-ray emission in materials
- lattice fluctuations
- exchange-biased thin films
- power semiconductor devices

Biological Applications

- X-ray imaging of small animal functions
- X-ray fluorescence
- dynamics of heme-based molecules
- coincidence spectroscopy and soft matter dynamics

A tour of the state of the art 3 GeV Australian Synchrotron development will be part of X05. This major new national facility, due to open in 2007, will have long-term capacity for 30 beamlines. The project is led by the State Government of Victoria in partnership with the academic, technological and industrial communities of Australia. Follow the progress of the Australian Synchrotron by visiting www.synchrotron.vic.gov.au.

A local social program will be organized for participants and accompanying persons that will enhance their visit to Victoria. Melbourne is recognized as "one of the world's most liveable cities," and you are invited to share in the rich and diverse culture during your visit. Participants may also choose to take the opportunity to visit other regions in Australia before or after the scientific program, including the other capital and major coastal cities, the Great Barrier Reef, the World Heritage Rainforest area, and Central Australia.

The Abstract submission deadline is 18 March 2005 and the Earlybird registration deadline is 15 April 2005: The final registration deadline is 20 May 2005 and registration is possible at the conference web site at <http://www.chemistry.unimelb.edu.au/news/X05/X05.html>.