

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Scientific Opportunities at OPAL, the New Australian Research Reactor ROBERT ROBINSON, Bragg Institute, ANSTO — Australian physics is entering a new “golden age,” with the startup of bright new neutron and photon sources in Sydney and Melbourne, in 2006 and 2007 respectively. The OPAL reactor and the Australian Synchrotron can be considered the greatest single investment in scientific infrastructure in Australia’s history. They will essentially be “sister” facilities, with a common open user ethos, and a vision to play a major role in international science. Fuel was loaded into the reactor in August 2006, and full power (20MW) achieved in November 2006. It is our plan to commence the formal user program in mid 2007, but commissioning experiments will have taken place well before then. The first three instruments in operation will be a high-resolution powder diffractometer (for materials discovery), single-crystal diffractometer (for small-molecule crystallography) and a strain scanner (for mechanical engineering and industrial applications). These will be closely followed by four more instruments with broad application in nanoscience, condensed- matter physics and other scientific disciplines. Instrument performance will be competitive with the best research-reactor facilities anywhere. To date there is committed funding for 9 instruments, with a capacity to install a total of ~18 beamlines. An update will be given on the status of OPAL, its thermal and cold neutron sources, its instruments and hopefully the first data.

Robert Robinson
Bragg Institute, ANSTO

Date submitted: 13 Nov 2006

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