



**Australian Institute of Physics  
NSW Branch (March Public Talk)**

**ITER and Australia: The Journey towards  
Fusion Power**

**Dr Matthew Hole**

**Australian National University**

**Thursday 29<sup>th</sup> March 2007 @ 6.00PM**

**At the**

**Slade Lecture Theatre, School of Physics, University of Sydney**

**Public talk arranged by: The Australian Institute of Physics (NSW Branch)**

***Entrance is FREE***

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***Summary of talk:***

Fusion, the process that powers the sun and the stars, offers a solution to the world's long-term energy needs: providing large scale energy production with zero greenhouse gas emissions, short-lived radio-active waste compared to conventional nuclear fission cycles, and a virtually limitless supply of fuel. Almost three decades of experiments in fusion research has produced spectacular progress. Present-day experiments have a power gain ratio of approximately 1 (ratio of power out to power in), with a power output in the tens of megawatts. ITER will be a pre-prototype power plant, designed to show the viability of fusion as a practical energy source. After two decades of negotiations, the governments of the EU, Japan, USA, Russia, South Korea, China and India formally agreed to establish the ITER Organisation in November 2006. Construction is beginning in Cadarache, in southern France. The Australian ITER Forum has led advocacy of Australian involvement in ITER and is now preparing a strategic plan (<http://www.ainse.edu.au/fusion/strat.html>) to detail what forms such involvement could take. An issues paper was published in December 2006, for comment by mid-February. The development of the plan follows the success of a Commonwealth-supported workshop, "Towards an Australian involvement in ITER", which was held in October 2006.





It was opened by the Chief Scientist of Australia and attended by delegations from five of the seven ITER partners. The Forum has also gained momentum from a parliamentary report which was tabled in December that advocated Australian involvement in ITER, and other government reports that have supported Australian engagement in such activities. In this talk Dr Hole will outline possible Australian activities related to ITER and fusion, and explain how AIP members can support the strategic plan.

***Brief Biography of the Speaker:***

Dr Hole holds degrees in Physics, Mathematics and Electrical Engineering, and completed a PhD on plasma centrifuge physics at the University of Sydney. During 2001-2002 Dr Hole worked for the U.K. Atomic Energy Authority on fusion power in the innovative spherical tokamak. From 2003-2004 Dr Hole worked on space plasma physics in the School of Physics, at the University of Sydney. He is presently employed in the Dep. of Theoretical Physics, Research School of Physical Sciences and Engineering at the Australian National University. His research interests include plasma and fusion physics, electrical and power engineering, and theoretical physics. Dr M. J. Hole is also the inaugural Chair of the Australian ITER Forum, a group of over 130 scientists and engineers supporting an Australian involvement in the ITER project.

***Detailed Schedule for Thursday, 29<sup>th</sup> May 2007:***

- 6:00-6.30 pm **REFRESHMENTS, Slade Lecture Theatre.**
- 6.35-7.30 pm **LECTURE by Dr Matthew Hole.**
- 8.00 pm **DINNER with the Speaker at Buon Gusto (Italian), 368 Abercrombie Street, Chippendale.**  
*E-mail Dr Fred Osman ([fred\\_osman@exemail.com.au](mailto:fred_osman@exemail.com.au)) if you will be able to join us for dinner.*

***Travel Directions:***

- Train to Redfern station and walk to the **School of Physics.**
- Buses 422, 423, 426, 428, 448, and 450 from Circular Quay to City Road / King, or 412, 435, 438, 470, 483 etc. along Parramatta Road from Circular Quay.
- Drive and park in various parking lots. You will need to pay for parking (**\$6 flat-rate after 4 pm**) and display the ticket in your car. You may also find parking places on public roads outside the Uni.

***Event sponsored by:***



***The Australian Institute of Physics – NSW Branch  
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