

## OFFICIAL OPENING

Senator Kay Patterson officially opened the Centre for Green Chemistry at Monash University on Monday 9<sup>th</sup> July. More than 80 guests from government, industry and academia attended, including Prof. Colin Raston, whose enthusiasm led to the establishment of the Centre but who has since moved to the Chair of Inorganic Chemistry at Leeds University, U.K. Distinguished international chemists from more than seven different countries were also present, including Dr Dennis Hjeresen, Director of the American Green Chemistry Institute and Dr Pietro Tundo, who is Director of the European based Inter-University Consortium for Chemistry and the Environment.



Mr. Jerry Ellis, Chancellor, of Monash University

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The Chancellor of Monash University, Mr. Jerry Ellis congratulated those involved in the establishment of the Centre and wished it every success in its future operations. He commented on Monash University's support of the Centre as part of its growing commitment to science and technology as demonstrated by the plans to build a Science and Technology Precinct and accommodate the Victorian Synchrotron.



From left: Professor W. Roy Jackson, Director, Centre for Green Chemistry; Dr Geoff Knights, Chair, Centre for Green Chemistry Advisory Board; The Hon Kay Patterson, Senator for Victoria; Mr. Jerry Ellis, Chancellor, Monash University.

In her address, Senator Patterson acknowledged the need for initiatives such as the Centre for Green Chemistry to "assert Australia as a world leader in environmental best practice". Senator Patterson recognised that "the Centre for Green Chemistry was an excellent example of strong and vibrant research collaboration and observed that it "represents an exciting step forward for the future of chemistry, and indeed, research in Australia".



The Hon. Kay Patterson, Senator for Victoria

The laboratories were open for inspection and visitors had an opportunity to discuss projects with research staff and students. The Opening attracted a significant amount of media attention with Channel Ten News filming an interview in the Centre laboratories and the Director, Roy Jackson, being involved in about fifteen radio interviews. Even the BBC found out about our opening and carried out an interview though it was probably only heard by night owls!

Perhaps as a direct consequence of the successful opening the Centre is currently involved in discussions with three additional companies with the aim of developing new collaborative projects. Since returning to Italy Professor Tundo has contacted us with a view to participation in an international collaborative project.



Senator Patterson discusses Green Chemistry with Prof. Pietro Tundo, is Director of the European based Inter-University Consortium for Chemistry and the Environment and Dr Nicola Sasanelli, Scientific Attaché, Embassy of Italy

# RESEARCH SEMINAR

## *Highlights of Green Chemistry*

The Official Opening was followed in the afternoon by a Seminar, *Highlights of Green Chemistry*. This was an opportunity for the Centre to disclose to international scientists and Australian industry some of the groundbreaking work being undertaken at the Centre. It was also an opportunity to hear about Green Chemistry on the world stage from one of the international guests, Dr Dennis Hjeresen, Director, Green Chemistry Institute, USA.

### *International Green Chemistry*

#### **Dr Dennis Hjeresen,**



Dr Hjeresen gave an overview of the current status of Green Chemistry on an international basis. He spoke of science policy, especially with regard to American industry and Green Chemistry. He summarised the outcomes from the recent CHEMRAWN (Chemistry

Research Addressing World Needs) Meeting in Colorado, which assessed the current state of the art in Green Chemistry and the role of chemical research and science policy in advancing global environmental protection and sustainable development.

### *Green Mineral Processing Methods*

#### **Dr D.C. 'Bear' McPhail**



Environmentally sustainable and economically viable mineral processing methods are necessary for Australia to remain at the forefront of the minerals industry, a major contributor to the Australian economy. Dr

McPhail discussed how, in an innovative, multidisciplinary program, his research team is integrating new experimental and modelling techniques to understand the fundamental chemistry involved in the processing of gold and nickel ores, and how the results will be used to design environmentally benign alternatives to cyanide leaching of gold and extracting nickel from laterite ore.

### *Boron Containing Compounds*

#### **Dr Peter Duggan**



Boron containing compounds have several 'green' applications. Dr Duggan spoke of how his research team is in the process of developing boron containing, environmentally friendly wood preservatives to replace the widely used arsenic-based preservatives. He also spoke of the development of a boron-based technique for industrial sugar production processes, which will result in greatly reduced greenhouse gas emissions. (*For further information on this project, see Issue 1 of Green Chemistry Downunder available on our web site – see below*)

### *Cleaner Processing at High Temperatures*

#### **Dr Chris Strauss**



An increase of 10°C in reaction temperature can lead to a halving of the requisite reaction time. If a reaction taking 16 hours at 100°C could be performed at 200°C, the time expected would be about 1 minute *i.e.* in the order of 2<sup>10</sup> faster! Higher temperatures than normal offer opportunities for efficiencies in time and energy and the application of microwave technology and alternative solvents including water was discussed by Dr Strauss. (*For further information on this project, see Issue 3 of Green Chemistry Downunder available on our web site – see below*)

### *Alternative 'Greener' Reaction Media*

#### **Dr Janet Scott**



Dr Scott spoke about the development of alternative 'greener' reaction media such as solvent-free systems or ionic liquid solvents. Such systems provide advantages, which extend beyond merely replacing the organic solvent but a clear understanding of the system is required to allow for optimisation of reaction conditions and isolation methods. A brief overview of the current and planned teaching activities of the Centre was also presented.