

# Sustainability Symposium

Sustainable materials, processes & technologies:  
Future pathways for reducing greenhouse gas impacts of materials

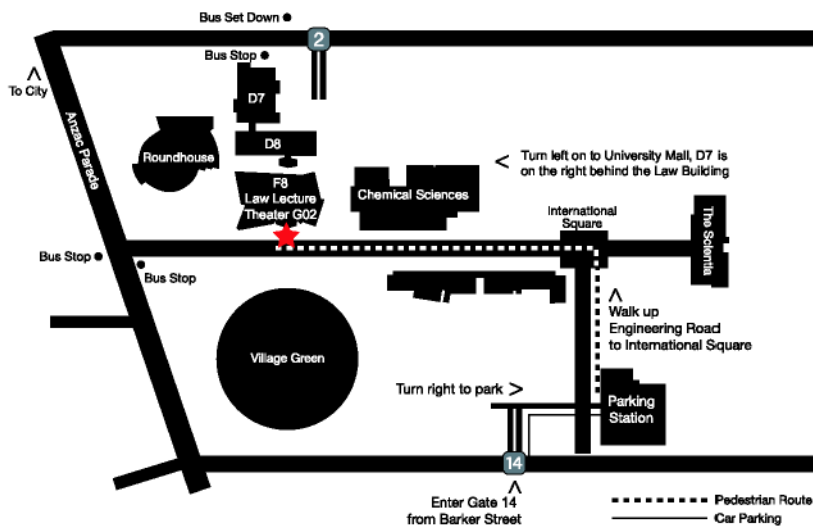
Join Scientia Professor Veena Sahajwalla, Director of SMaRT@UNSW for the Symposium on:

## Sustainable materials, processes & technologies:

Future pathways for reducing greenhouse gas impacts of materials.  
9-10 September 2009

Lecture Theatre G02, Building F8, UNSW Kensington lower campus

RSVP by Monday 7 September 2009. Bookings essential.  
Information and bookings to Susan Lundy E:  
[s.lundy@unsw.edu.au](mailto:s.lundy@unsw.edu.au) T: 02 9385 4426



Metered parking available via Gate 14, Barker Street, Kensington

The Centre for Sustainable Materials Research and Technology (SMaRT@UNSW) brings together researchers from the Faculties of Science, Engineering, Built Environment and ADFA to work with industry on the development of innovative, sustainable materials and manufacturing processes.

The overall aim of the Centre is to develop innovative, sustainable materials and processes through world-class research, with strong emphasis on environmental and economic benefits.

Celebrating **60** YEARS of extraordinary achievement



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# Sustainability Symposium

Wednesday, 9 September



## Plenary Session

- 9.00 – 9.05am **Welcome: Scientia Professor Veena Sahajwalla, Director of SMaRT@UNSW**
- 9.05 – 9.20 **Opening Address: Professor Les Field, Deputy Vice-Chancellor (Research), UNSW**
- 9.20 – 10.00 **Keynote Address: Professor Hae-Geon Lee, Dean and Professor Graduate Institute of Ferrous Technology (GIFT)**  
Director, Technology Innovation Center for Metals and Materials  
**Pohang University of Science & Technology, Korea**  
*Some considerations on alternative routes of current steelmaking processes in view of environmental impact:*  
*Jin Kwan Kim, Seong-Woo Kim, Sung-Mo Jung and Hae-Geon Lee*
- 10.00 – 10.40 **Keynote Address: Mats Hallin, General Manager, Metallurgy, Technology & Business Development, LKAB, Sweden**  
*Projects at LKAB for sustainable raw materials production and the importance of global networking with institutes, universities and industries*
- 10.40 – 11.00 Break

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## Theme: Sustainable Processes and Technologies

- 11.00 – 11.30 **Paul O'Kane, Technology & Development Mgr, OneSteel,**  
**Magdalena Zaharia, Catherine Skidmore, David Knights, Rita Khanna, Narendra Saha-Chaudhury and Veena Sahajwalla**  
*Recycling rubber tyres in EAF Steelmaking*
- 11.30 – 12.00pm **SiHyung Lee, Senior Researcher, Ironmaking Research Group POSCO, Korea** Sihyung Lee, Jonghwun Jung, Kihyun Kim and Sungman Kim. *Effect of Hydrogen on the reduction and melting behaviours of Iron Oxide*
- 12.00 – 12.30 **Harry Brunger, Michiel Freislich, Steve Gale, Tooraj Arvajeh, HATCH,**  
*Syngas DRI vs Blast Furnace: Choosing the Right Ironmaking Process*
- 12.30 – 1.00 **Bo Lindblom, Metallurgical Research Mgr, Technology & Business Development, LKAB, Sweden**  
*Process Integration in Mining Industry, a Potential Tool for Improving Energy Use and Environmental Performance*
- 1.00 – 3.00 Lunch
- Professor Fred Hilmer AO, President and Vice-Chancellor, UNSW**  
**Vice-Chancellor Address: UNSW and Industry Research Collaboration**
- 3.00 – 3.20 **Steve Foster and Y L Voo, Civil and Environmental Engineering, UNSW**  
*Reducing Carbon Emissions in Concrete Construction through Smart Technology*
- 3.20 – 3.40 **Sushil Gupta, Senior Research Fellow, SMaRT@UNSW**  
*Role of Recent Advances of Coal and Coke Science on Sustainable Steel Production*
- 3.40 – 4.00 **Guangqing Zhang, Lecturer, Oleg Ostrovski, Professor, Materials Science & Eng, UNSW**  
*Alternative Technologies of Metal Extraction by Gas Solid Reactions: Guangqing Zhang and Oleg Ostrovski*
- 4.00 – 4.20 **Ian Watson, Ganga Prusty, John Olsen and Dave Farrell, Mechanical & Manufacturing Engineering, UNSW**  
*Developing a global parametric model for the Thompson Couplings*
- 4.20 – 4.40 **Sean Li, Materials Science & Eng, UNSW** *Stoichiometric Ratio Dependence of thermal performance in  $Na_xCo_2O_{4.5}$*
- 4.40 – 5.00 **Panel Discussion (Sustainable Processes and Technologies)**
- 7.00 – 10.00 Symposium dinner

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## Thursday, 10 September

### Theme: Sustainable Materials

- 8.45 - 8.50am **Welcome: Scientia Professor Veena Sahajwalla, Director of SMaRT@UNSW**
- 8.50 – 9.20 **Anthony Ng, OneSteel, Steel designed to reduce GHG**
- 9.20 – 9.40 **Alan Crosky, Materials Science & Eng, UNSW** *A Sustainable Fibreglass Replacement*
- 9.40 – 10.00 **Sami Kara, Mechanical and Manufacturing Engineering, UNSW. Implementing Environmental Requirements into Product Development: The Gold Coast City Council Case**
- 10.00 – 10.20 **Tian Sing Ng and Steve Foster, Civil Engineering, UNSW. Advancements in the development of High Performance Geopolymer Concrete**
- 10.20 – 10.40 **Sri Bandyopadhyay, Materials Science & Eng, UNSW**

*Recycling of Fly Ash as Filler in Polymer, and Modifying Colour of Fly Ash from Grey Black to Near White*

10.40 – 11.00

**Obada Kayali**, Australian Defence Force Academy (ADFA), **UNSW**. *Towards Sustainable Materials in the concrete construction industry*

11.00 – 11.30

Break

11.30 – 12.00pm

**Anthony Honeyfield**, Design Director, **Design + Industry**, *Sustainable Solutions in Product Design*

12.00 – 12.20

**Mariano Ramirez & Andrea Wechsler**, Industrial Design, Built Environment, **UNSW**

*Sustainable Materials for Furniture Panel Applications in Latin America*

12.20 – 12.40

**Kirsty Mate**, Interior Architecture, Built Environment, **UNSW**. *Designing SMaRT Interiors with SMaRT Materials*

12.40 – 1.00

**Nigel Howard**, Managing Director, **Edge Environment**, *BPIC/ICIP Project*

1.00 – 1.10

**Panel Discussion (Sustainable Materials)**

1.15 – 3.00

Lunch

**Closing Address: Professor Richard Henry, Deputy Vice-Chancellor (Academic), UNSW**