



SA JOINT CHEMICAL ENGINEERING COMMITTEE NEWSLETTER – April 2009

Volume 21.1

JCEC TECHNICAL PROGRAM 2009

MAY: Overcoming Barriers to the Utilisation of South Australian Low Rank Coals

Date: Wednesday, 6th May 2009

Venue: Level 12 Santos Centre, 60 Flinders St, Adelaide (meet in Foyer)

About the speaker:

Peter Mullinger
Technical Director of Hybrid Energy
Visiting Researcher at the University of Adelaide

About the event:

South Australia has extensive deposits of low rank coal that remain unexploited despite serious attempts in the 1980s to utilise these resources. This presentation reviews the reasons for the failures of the 1980s, especially the contribution of sodium, sulphur and water to these failures and charts the pathways to achieve successful utilisation of these potentially valuable resources.

Work by The Cooperative Research Centre for New Technologies for Power Generation from Low Rank Coal and the CRC for Clean Power from Lignite added greatly to the understanding of the cause of the problems, allowing the development of potential solutions. This work is now being continued by the South Australian Coal Research Laboratory (SACRL) on behalf of Strike Oil's wholly owned subsidiary, Hybrid Energy, in an endeavour to optimise the potential utilisation of Kingston coal for the FuturGas project.

Program: Drinks and nibbles from 5:30pm with the presentation starting at 6:00pm

Registration/RSVP: 1st May to Mary Barrow mhbarrow@chemeng.adelaide.edu.au or 8303 5446

Cost: Nil

Desalination Pilot Plant – March Site Visit

On Wednesday, 18th March, Con Pelekani of SA Water hosted our tour of the Adelaide Desalination Pilot Plant at Port Stanvac. The pilot plant is being used to investigate the local sea water quality, and to test various treatment options, so as to minimise problems such as fouling of membranes and optimise power demands of the process.

The tour provided a fascinating insight into the facilities for testing pre-screening and pre-treatment options, including conventional media filters (gravel, sand etc.), Baleen filters and ultrafiltration modules, and of course the reverse osmosis system at the heart of the desalination process. Information obtained from the pilot plant will be used to indicate where improvements in full-scale plant design or operation can be made.

The pilot plant currently has an output of 100 cubic metres per day of desalinated water, whereas the expected output from the full-scale plant (when in operation) is 150 megalitres per day in Stage 1, increasing to 300 megalitres per day in Stage 2.

Only a limited number of people could be taken on the tour, but those who were fortunate enough to go very much enjoyed and appreciated the experience.

*Catherine Hustwick
JCEC Member*

Precis of April Technical Meeting – Joint Meeting with AusIMM

This month's technical meeting was a joint lunch-time meeting with AusIMM (the Australasian Institute of Mining & Metallurgy), and was held at the Historian Hotel in Adelaide on Thursday, 16th April.

The speaker was Kathy Ehrig, Principal Geometallurgist at BHP Billiton, who talked about that company's operations at Olympic Dam. Olympic Dam is a massive multi-mineral ore body, and is apparently the world's largest uranium deposit, fourth largest remaining copper deposit, and fifth largest gold deposit.

Kathy provided a fascinating insight into the major role of geometallurgy in determining mining strategies at Olympic Dam, based on extensive and ongoing testing of the scope and composition of the ore body. The meeting was a popular event, and Kathy's talk was much appreciated by the many attendees.

*Catherine Hustwick
JCEC Member*

INDUSTRY AND OTHER NEWS

Professor King Steps Down

The School of Chemical Engineering has only had a handful of Heads during its long history. Our most recent long-serving Head, Prof Keith King, has just stepped down after a ten-year stint in the “top job”. Prof King was appointed as Head of School after a fairly tumultuous period in the School’s history and immediately established procedures and policies that set the School on its current successful path. Under his leadership the School has grown, in terms of staff, postgraduate students and undergraduate students. The School has also successfully launched new postgraduate coursework programs and new undergraduate programs in Pharmaceutical Engineering and Sustainable Energy Engineering. Since January 21, 2009, Prof King has been enjoying a well-earned sabbatical and will return to his academic duties in Semester 2.

Prof Mark Biggs was appointed in December 2008 and will take over as Head of School in 2010. Prof Biggs joined the School from the University of Edinburgh, having completed his PhD at the University of Adelaide in the mid-1990s. The focus of his research is interfacial engineering, examples of which include nanoporous carbons in adsorption, catalysis and energy storage, protein-mediated self-assembly of nanoparticles and nanotubes, and various fluid systems where interfacial effects are important, including immiscible liquid flows and flows in porous media. The School is very excited that Mark has chosen to return home from such a successful academic career in the UK.

Dr Peter Ashman is Acting Head of School during 2009.

Dr Peter Ashman

2009 JCEC Young Graduates Event

Look out for information from on this year’s Young Graduates Event, to be held in the August 2009. More information will follow in future JCEC newsletters and notices.

Chemeca 2009

The annual Australasian chemical engineering conference, CHEMECA 2009: **Engineering our Future: Are We Up to the Challenge?**, is to be held at the Burswood Entertainment Complex, Perth, Western Australia on 27-30 September 2009. For more information, visit www.chemeca2009.com.

Chemeca 2010- *Engineering at the Edge*

On behalf of the Federation of Australian and New Zealand Chemical Engineers, JCEC South Australia is hosting CHEMECA, the national conference for chemical engineers and scientists, in 2010. The conference titled *Engineering at the Edge* will be held at the Hilton Hotel from the 26th to 29th September 2010. More details such as key dates, sub-themes and sponsorship opportunities will shortly be available at the website, www.chemeca2010.com, or alternatively contact Andre Jemison at ajemison@gmail.com for more information.

2009 JOINT COMMITTEE

Engineers Australia	IChemE	RACI
Andre Jemison (Secretary)	Andrew Saint (Chair)	Catherine Hustwick
Anisha de Almeida	Peter Mullinger (Treasurer)	Keith Quast
Thomas Hamilton (Student Representative)	Peter Ashman	John Pockett (Deputy Chair)
	Yung Ngothai	Pamela Ooi

2009 TECHNICAL PROGRAM

The 2009 technical program is planned as follows. See future JCEC newsletters and notices for further updates.

Date	Speaker	Title	Venue
March 18 th	Plant tour	Desalination Pilot Plant	Pt Stanvac
April 16 th	Kathy Ehrig	Joint Meeting with AusIMM	Historian Hotel
May 6th	Peter Mullinger	Utilisation of Low Rank Coals	Santos Centre
June 3 rd	Dr David Lewis	Biodiesel from Algae	Engineering House
August	Prof. Richard Hillis	Geothermal Energy	TBC

Anisha de Almeida
Newsletter Editor