



IIR'S 2ND ANNUAL SLURRY PIPELINES CONFERENCE

A FOCUS ON THE DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE OF MINERAL SLURRY PIPELINES

20-21 NOVEMBER, 2012 | ESPLANADE HOTEL, FREMANTLE, WESTERN AUSTRALIA

SHARE THE EXPERIENCES OF 4 INTERNATIONAL CASE STUDIES

- Da Hong Shan concentrate slurry pipeline and Baotou Steel's Bai Yu E Bo project
- Weng Fu project
- Kurumbukari Mine and Smelter, the Ramu NiCo project
- Ok Tedi

BENEFIT FROM THE INDUSTRY EXPERTISE AND KNOWLEDGE OF SOME OF THE 'BEST IN THE BUSINESS'

- Dr Angus Paterson, Paterson Cooke, South Africa
- Professor Paul Slatter, RMIT University
- Dr Allan Thomas, Slurry Systems
- Dr Lionel Pullum, Consulting Engineer
- Norman Cowper, Slurry Systems
- George Shou, Brass Engineering
- Dr James Wang, Ramu NiCo
- Yue Guang Che, Ausenco

FOCUS ON KEY INDUSTRY ISSUES INCLUDING:

- The economics of a successful pipeline project
- Innovations to improve efficiency
- Improving operational stability
- Corrosion control management
- Design for shutdown
- High concentration laminar flows

1 DAY MASTERCLASS: MONDAY 19TH NOVEMBER

Slurry rheology for mining and industry

Facilitated by:

Professor David Boger, University of Melbourne
and Dr Fiona Sofra, Rheological Consulting Services



Supporter:



The Australian Society
of Rheology

"Relevant information provided which can be applied to current projects I am working on"

- *WorleyParsons*

TO REGISTER:

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SLURRY PIPELINES CONFERENCE

MASTERCLASS: Monday 19th November 2012

Slurry rheology for mining and industry 9:00am – 5:00pm

Key Learning Outcomes

- What constitutes a slurry? – slurry physical and chemical properties
- An understanding of rheological properties and their impact on pipeline flow and unit operations
- How slurry flow properties are measured and how to meaningfully interpret / use the data
- Understand the interconnection between flow properties and physical / chemical factors on pipeline transport and dewatering

About the Course

Integral to process plant design is identification of the slurry system operating window that allows increased throughput while decreasing capital and operating costs.

Understanding rheology or fluid flow and its effect on pipeline flow, dewatering including thickening and filtration and the surface chemistry/rheology interrelationship is prerequisite to slurry system design, operation and risk management.

This course will focus on identifying what information is required, how to interpret measured data and how to apply to new system design and existing operations.

You will learn about slurry physical and chemical properties, how flow properties or rheology are measured and how to meaningfully interpret rheograms for viscosity, yield stress and time dependence information.

The course will outline how to apply rheology and surface chemistry for optimal process control and operation and is designed to be interactive to discuss and address the issues raised by attendees and to present case studies and examples.

Workshop outline

- What is a slurry – the liquid to solid continuum
- Slurry rheology / flow properties
- Slurry rheology measurement
- Flow models – communicating data
- Slurry surface chemistry / rheology relationships
- Exploiting Rheology for Waste Minimisation – a case study

Who Should Attend

- Managers and decision makers in mining and industrial areas
- Operational, environmental, tailings and maintenance engineers
- Plant designers, equipment and reagent suppliers

Facilitated by: Prof. David Boger, immediate post Laureate Professor at the University of Melbourne and currently Professor of Engineering at Monash and Dr Fiona Sofra, Managing Director, Rheological Consulting Services

For a full agenda and bio on the masterclass leaders please visit: www.iir.com.au/slurry

DAY ONE: Tuesday 20th November 2012

8.30 Registration and coffee

9.00 Opening remarks from the Chair

9.10 KEYNOTE OPENING ADDRESS: **The economics of a pipeline project**

Professor Paul Slatter, *Professor of Rheology and Fluid Engineering, School of Civil, Environmental and Chemical Engineering, RMIT University*

9.50 **Innovations – improving the efficiency of slurry transport**

Dr Allan Thomas, *Slurry Systems*

10.30 Morning tea

11.00 CASE STUDY: CHINA **Da Hong Shan Iron concentrate slurry pipeline and Baotou Steel's Bai Yu E Bo project – state of the art technology**

Yue Guang Che, *Senior Vice President and Chief Process Engineer, Process Infrastructure, Ausenco*

Da Hong Shan concentrate slurry pipeline is 171 km long and 3.5 MTA. It has 3 ANSI 1500# Class and 2 ANSI900# Class pump stations.

Baotou Steel's Bai Yu E Bo project includes a 145 km long and 5.5 MTA iron concentrate slurry pipeline. It also has a 145 km long and 20 MTA process water supply pipeline and 8 MTA thickened tailings surface disposal.

11.40 CASE STUDY: PNG **Ok Tedi**

Anthony Cicchini, *Mechanical Engineer, OSD Pipelines*

12.10 **Route selection and constructability with industry examples**

Warren King, *GIS and Route Selection Specialist, OSD Pipelines*

12.40 Lunch

2.00 **The impact of slurry rheology on tailings transport and disposal options – case studies**

Tim Fitton, *Tailings Engineer* and Arash Roshdiah, *Tailings Engineer, ATCW*

2.40 **Issues when pumping pastes**

Dr Lionel Pullum, *Consulting Engineer*

3.20 Afternoon tea

LAMINAR FLOWS

3.40 DISCUSSION:

High concentration laminar flows

- Outlining historical background of prediction methods
- Outcome of loop test investigations
- Industry case studies
- Slope design systems

This session will consist of an introductory presentation by Allan followed by 15 minute presentations by each participant before opening to a discussion and Q & A session with delegates.

Chaired by: Dr Allan Thomas, Slurry Systems

Dr Angus Paterson, *Managing Director*, Paterson Cooke, South Africa

Dr Lionel Pullum, *Consulting Engineer*

Tim Fitton, *Tailings Engineer*, ATCW

5.30 Close of day one and networking drinks

DAY TWO: Wednesday 21st November 2012

9.00 Opening remarks from the Chair

Professor Paul Slatter, *Professor of Rheology and Fluid Engineering, School of Civil, Environmental and Chemical Engineering, RMIT University*

9.10 KEYNOTE OPENING ADDRESS:

Dr Angus Paterson, *Managing Director*, Paterson Cooke, South Africa

9.50 CASE STUDY: CHINA

Weng Fu project – with a special focus on slurry pipeline corrosion control management

- Project update
- Corrosion experience

George Shou, *Chief Engineer*, Brass Engineering

10.30 Morning tea

11.00 CASE STUDY: PNG

Operation of Ramu Slurry Pipelines

- The 135km nickel laterite slurry pipeline from mine to refinery
- The deep sea tailings pipeline from the refinery

Dr James Wang, *Chief Technical Director*, Ramu NiCo

11.40 The design of the Century Zinc concentrate pipeline – the longest single pump station slurry pipeline in the world

Dr Allan Thomas, Slurry Systems

12.20 Design for shutdown with both long and short distance pipelines with a special focus on the shutdown/restart of the Savage River pipeline

Norman Cowper, *Director*, Slurry Systems
(Norman was the commissioning engineer of Savage River)

1.00 Lunch

2.00 Slurry modelling with CFD – applied research in minerals processing

Peter Witt, *Research Engineer, Research Group Leader*, Fluids Process Modelling, CSIRO

PUMP AND PIPELINE DESIGN, OPERATION AND MAINTENANCE

2.40 Improving operational stability, reducing process stoppages and improving profitability through improved slurry control and task specific equipment

James Pomroy, *Global Business Development Director – Metals and Mining*, Emerson Process Management

3.20 Afternoon tea

3.40 Novel internal abrasion coating featuring a unique and economical field weld technology

- Adhesion and abrasion test data from independent laboratories
- Field data from more than 2 years of operation in oil sands tailings
- A novel 1-weld-per-joint joining system for internally coated pipes: first field experience

Michael Magerstaedt, ROSEN

4.20 Additives – latest research

Speaker to be confirmed

5.00 Close of conference

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

IIR's Slurry Pipelines conference provides you with a unique platform to engage with senior professionals from all areas of the industry to share knowledge and information whilst opening various networking channels to communicate in a social environment.

We understand the challenges in winning new contracts and retaining existing business within the resources sector. We have a number of commercial opportunities available to you to enhance your business contacts and get in front of your target audience.

For details on how we can work together, contact **David Lewis** on +61 2 9080 4054 or dlewis@iir.com.au

SLURRY PIPELINES CONFERENCE

20-21 November, 2012 | Esplanade Hotel, Fremantle

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Registration Details

| REGISTER EARLY & SAVE UP TO \$330 | EARLY BIRD RATE Book & pay on or before 7th September 2012 | | | | STANDARD RATE Book & pay after 7th September 2012 | | |
|--|--|----------|-----------|--------------|---|----------|-----------|
| | CONFERENCE PACKAGE | PRICE | GST | TOTAL | SAVE | PRICE | GST |
| Conference Only (20–21 November 2012) | \$2695.00 | \$269.50 | \$2964.50 | \$330 | \$2995.00 | \$299.50 | \$3294.50 |
| Conference & Masterclass (19–21 November 2012) | \$3595.00 | \$359.50 | \$3954.50 | \$330 | \$3895.00 | \$389.50 | \$4284.50 |
| Masterclass Only (19 November 2012) | \$1495.00 | \$149.50 | \$1644.50 | \$220 | \$1695.00 | \$169.50 | \$1864.50 |



Use your QR Reader App on your smartphone and scan this code to take you directly to the secure registration page.

Conference Venue:

Esplanade Hotel Fremantle
Corner Marine Terrace and Essex Street
Fremantle, WA 6160

Phone (618) 9432 4000

Fax (618) 9430 4539

URL www.esplanadehotelfremantle.com.au

Registration Fees Include:

Entrance to the relevant conference package purchased, refreshment breaks, lunch, online access to available speaker presentations (five working days post event). Please note travel and accommodation is not included. Ticket sharing is not available.

Accommodation & Travel:

For your convenience, please access this event via our website and click on the 'Venue, Accommodation and Travel' tab or call the Lido Group on 1800 817 339.

Cancellation Policy & Substitutions:

Cancellations must be advised in writing at least 10 working days prior to the event. An administration fee of \$550 (inc 10% GST) will be incurred for cancellations. A refund will not be given if a delegate fails to attend or cancels within 10 working days prior to the event. Informa reserves the right to cancel, alter the content and/or speakers on any program. Paid registration fees will be fully refunded for cancelled events. Fully paid delegates unable to attend will be provided with on line access to speaker presentations post event. Substitutions can be made at any time before the event without penalty. We do not refund airfares or hotel expenses if the event is cancelled.

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Conference Papers:

Papers will be available for download from our website five working days after the event. These are available for purchase online at: www.iir.com.au/slurry



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