

## Technical Programme

### Tuesday 2<sup>nd</sup> May

08:00 – 17:30 Pre conference workshop – Rydges Melbourne

17:30 – 18:00 Early registration – Rydges Melbourne

### Wednesday 3<sup>rd</sup> May

07:45 – 08:15 Morning Registration

08:15 Welcome and Opening Remarks – Conference Co-Chairs

#### SESSION 1: DESIGN, OPERATION & TROUBLESHOOTING PART 1

SESSION CHAIR: Dr Lionel Pullum

08:25	<b>The Design of Slurry Pipelines – Historical Aspects</b> <i>A D Thomas, N T Cowper (Snr), Slurry Systems Pty Limited, Australia</i>	Pg 7
08:45	<b>Ageing Assets – Long Distance Slurry Pipeline Integrity and Defect Assessment</b> <i>M Turney, J Jacobs, Paterson &amp; Cooke USA, Ltd., USA</i>	Pg 23
09:05	<b>Operational Pigging of Slurry Pipelines</b> <i>F Salt, OSD Pty Ltd, Western Australia</i>	Pg 37
09:25	<b>Poster Presentations</b>	
09:45	<b>Exhibitor Presentation – CSIRO</b>	
09:55	<b>Exhibitor Presentation – Beaver Group</b>	
10:05		
-	<b>Refreshment Break – Sponsored By IMASA</b>	
10:35		



#### Organiser Contact Information:

Georgia Coomes  
Conference Organiser  
Email: [confx1@bhrgroup.co.uk](mailto:confx1@bhrgroup.co.uk)  
Phone: +44 (0) 1234 750 422  
Website: [www.bhrgroup.com/events](http://www.bhrgroup.com/events)

BHR Group  
The Fluid Engineering Centre  
Cranfield, Bedfordshire  
MK43 0AJ  
United Kingdom

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**SESSION 2: EROSION PART 1**

**SESSION CHAIR: Mr Robert Visintainer**

- 10:35 **Slurry Pump Selection Based on Particle Size**  
*C I Walker, Weir Minerals Australia Ltd., Australia*
- 10:55 **Characterization of Wear-Resistant Materials for Handling Abrasive/Erosive Slurries** Pg 127  
*Y Xie, J Jiang, Md Aminul Islan, National Research Council Canada, Canada*
- 11:15 **An Investigation of Large Solids Particle Degradation on Wear Rate in Horizontal Pipeline** Pg 143  
*M Huard, K F Adane, A Fuhr, B Foffy, InnoTech Alberta Inc., Devon Research Centre, Canada*
- 11:35 **Case Studies: Internal High Performance Erosion and Corrosion Protection Coatings in Hydrotransport Pipelines** Pg 117  
*M Magerstaedt, ROSEN Swiss AG, Switzerland; T Raeth, L K Lai, D Plourde, ROSEN Canada Ltd., Canada; S Forster, R Altmeyen, H Rosenbleck-Schmidt, ROSEN Technology and Research Center GmbH, Germany*
- 11:55 **Exhibitors Presentation – Weir Minerals**
- 12:00 **Exhibitors Presentation – Rosen**
- 12:05
- **Lunch – Sponsored by Saskatchewan Research Council**
- 13:05



**SESSION 3: TAILINGS, TRANSPORT AND PLACEMENT PART 1**

**SESSION CHAIR: Dr Robert Sumner**

- 13:05 **Introduction of Professor Peter J Scales**
- 13:10 **Keynote Presentation – Professor Peter J Scales, University of Melbourne**  
*‘Rheology, Flow, Thickening and Tailings: Bringing it Together’*
- 13:50 **Poster Presentations**
- 14:00 **Non-Newtonian Flow in Small Channels and Their Relevance to Tailings Beach Formation** Pg 213  
*A G Chryst, L Graham, K Mohanarangan, CSIRO Mineral Resources, Australia*
- 14:20 **Analytical and Experimental Investigation of Non-Newtonian Thickened Tailings Slurry Flow Through Open Channels** Pg 225  
*S Javadi, P Slatter, B Pirouz, ATC Williams Rheology and Slurry Engineering Group, Australia; S Bhattacharya, RMIT University, Rheology and Material Processing Centre, Australia*
- 14:40 **Exhibitors Presentation – Paterson & Cooke**

14:45 **Exhibitors Presentation – OSD Pipelines**

14:50

- **Refreshment Break - Sponsored By IMASA**

15:20



#### SESSION 4: SLURRY FLOW MODELLING PART 1

SESSION CHAIR: Professor Geoffrey Duffy

15:20 **Poster Presentations**

15:40 **Slurry Transport of Very Large Particles at High Line Speeds**

*S A Miedema, Delft University of Technology, The Netherlands*

Pg 269

16:00 **Distribution of Stresses Over Depth of Partially Stratified Flow Above Granular Bed**

*V Matoušek, Czech Technical University in Prague, Czech Republic*

Pg 285

16:20 **Pick-Up Functions for Highly Concentrated Flows**

*C van Rhee, Delft University of Technology, The Netherlands*

Pg 295

16:40

- **Stretch Break - Session Change**

16:45

#### SESSION 5: INSTRUMENTATION

SESSION CHAIR: Dr Melissa McKibben

16:45 **Flow Regime Detection in Coarse Particle Slurry Pipeflow Using Pulsed Ultrasound Doppler Velocimetry and Electrical Resistive Tomography**

*R Kotzé, J Shamu, A Sutherland, Cape Peninsula University of Technology, South Africa*

Pg 373

17:05 **Absolute 2.5D Electrical Resistance Tomography in Pipe Systems**

*L Graham, A Chryss, CSIRO Mineral Resources, Australia; L Pullum, Private Consultant, Australia*

Pg 387

17:25 **Conference Day 1 Close**

17:25 **Welcome Reception and Poster Session**

**Rydges Melbourne**

**Sponsored by WEIR Minerals**



## Thursday 4<sup>th</sup> May

### SESSION 6: SLURRY FLOW MODELLING PART 2

SESSION CHAIR: Professor Sean Sanders

- 08:30 **Introduction of Gianandrea Vittorio Messa – Recipient of the Hydrotransport Next Generation Award**
- 08:35 **Keynote Speaker – Gianandrea Vittorio Messa, FluidLab Group, Politecnico di Milano**  
*‘Slurry Flows: Modelling and Management’*
- 09:15 **Comprehensive Loop Testing of a Broadly Graded (4-Component) Slurry** Pg 307  
*R Visintainer, J Furlan, G McCall II, GIW Industries, USA; A Sellgren, Lulea University of Technology, Sweden; V Matoušek, Czech Technical University in Prague, Czech Republic*
- 09:35 **Kinematic Friction of Concentrated Suspensions of Neutrally Buoyant Coarse Particles** Pg 325  
*R B Spelay, R G Gillies, S A Hashemi, Saskatchewan Research Council, Pipe Flow Technology Centre, Canada; R S Sanders, University of Alberta, Canada*
- 09:55 **CFP-DEM Modelling of Hydraulic Transport of Coarse Solids in Vertical Pipelines** Pg 341  
*E Abbaszadeh Molaei, S B Kuang, Z Y Zhou, A B Yu, Monash University, Australia*
- 10:15 **Exhibitor Presentation – GIW**
- 10:20 **Exhibitor Presentation – Beasley’s**
- 10:25
- **Refreshment Break – Sponsored by Feluwa** 
- 10:55

### SESSION 7: PUMPING AND PUMP PERFORMANCE

SESSION CHAIR: Dr Allan Thomas

- 10:55 **Pumping Frothy Slurries Designing an Optimized System**  
*A Vidal, A Lara, J Chapman, R Lima, Ausenco, Brazil*
- 11:15 **Centrifugal Slurry Pump Performance Deratings – A Coherent Approach** Pg 401  
*A Sellgren, Lulea University of Technology, Sweden; R Visintainer, J Furlan, GIW Industries, USA*
- 11:35 **Pump Phase Shift Control in World’s Largest Iron Ore Concentrate Pipeline** Pg 415  
*R van Rijswick, E Vlot, Weir Minerals Netherlands b.v., The Netherlands*
- 11:55 **Exhibitor Presentation - Saskatchewan Research Council**

12:00 **Exhibitor Presentation - Aeigon**

12:05 **Lunch Break – Sponsored by OSD**

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13:05



**SESSION 8: DESIGN, OPERATION AND TROUBLESHOOTING PART 2**

**SESSION CHAIR: Dr Anders Sellgren**

13:05 **Introduction of Allan Thomas – Co-recipient of the Hydrotransport Career Award**

13:10 **Keynote Speaker – Allan Thomas, Slurry Systems Pty Ltd**

*'The Evolution of Slurry Pipeline Design Since the 1970's'*

13:50 **Transient Flow Analysis – Considering the Effect of Fluid Property Variations Along the Pipeline**

*M Fehrsen, N Russouw, Paterson and Cooke, South Africa; A G T J Heinsbroek, M Tukker, Deltares, The Netherlands*

Pg 45

14:10 **Preliminary Design of 200mm and 300mm NB Distribution Pipelines for Phosphate Slurry at the Jorf Lasfar Terminal Facilities in Morocco**

*N Heywood, P Ioannou, BHR Group, UK; D Hevia, J Garcia, IMASA Ingenieria y Proyectos SA, Spain; N Alderman, Private Consultant, UK*

Pg 57

14:30 **Case Study: Goaf Emplacement of Coal Rejects**

*J Aitken, Ausenco, Australia*

14:50 **Exhibitor Presentation – Feluwa**

14:55 **Exhibitor Presentation – Imperial Pipe**

15:00 **Exhibitor Presentation - Ausenco**

15:05

- **Refreshment Break – Sponsored by Feluwa**

15:35



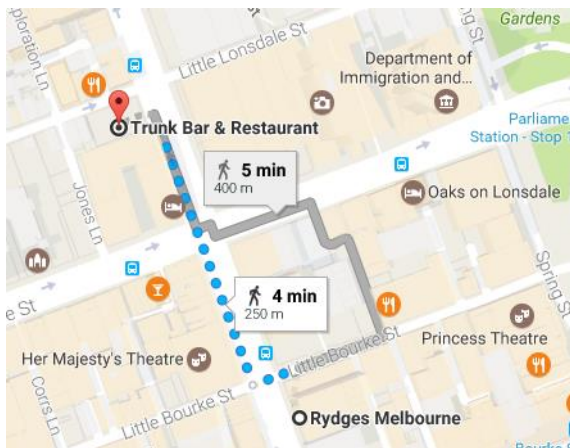
**SESSION 9: EROSION PART 2**

**SESSION CHAIR: Professor Vaclav Matousek**

- 15:35 **Predicting Flow Regime in Horizontal Settling Slurry Pipeline** Pg 171  
*H D'Souza, K F K Adane, A Fuhr, B Fotty, InnoTech Alberta Inc., Devon Research Centre, Canada*
  
- 15:55 **Determination of Erosion Rate Characteristic for Slurries Suspending Solids With a Wide Particle Size Distribution** Pg 183  
*C Solnordal, L Graham, G Short, C Wong, J Wu, CSIRO Mineral Resources, Australia*
  
- 16:15 **Making Erosion Spots Prediction Affordable for Euler/Lagrange Computations** Pg 197  
*J Boulanger, C Wong, CSIRO Mineral Resources, Australia; A Zamberi, A Shaffee, Z Johar, Petronas, Malaysia; M Jadid, Uzma Group, Malaysia*
  
- 16:35 **Conference Day 2 Close**

**Conference Dinner – Trunk Restaurant, Melbourne**

- 18:00 Sponsored by Beaver Group  
Dress code: Smart/casual. Please meet at Rydges Reception at 17:40



Best Paper Award Presentation – Sponsored by Rosen



## Friday 5<sup>th</sup> May

### SESSION 10: NON-NEWTONIAN

SESSION CHAIR: Dr Lachlan Graham

- 08:30 **Introduction of Lionel Pullum – Co-recipient of the Hydrotransport Career Award**
- 08:35 **Keynote Speaker – Lionel Pullum, Consulting Engineer**  
*'Similarity in Suspension Flows'*
- 09:15 **Wall Effects on the Sedimentation of a Sphere in Power-Law Fluids**  
*T Vidya Sagar, R P Chhabra, Indian Institute of Technology, Kanpur, India; S A Patel, New Jersey Institute of Technology, USA* Pg 429
- 09:35 **Turbulent Flow of Yield Stress Slurries in an Open Flume**  
*M Rudman, J Singh, H M Blackburn, Monash University, Australia* Pg 443
- 09:55 **High Concentration Particle Transport in a Laminar Pseudoplastic Fluid Flow: Pipeline Friction Losses**  
*G Montserrat, Instituto Nacional de Hidráulica, Chile; A Tamburrino, C Ihle, Universidad de Chile, Chile* Pg 457
- 10:15 **Refreshment Break**

### SESSION 11: DESIGN, OPERATION AND TROUBLESHOOTING PART 3

SESSION CHAIR: Dr Angus Paterson

- 10:45 **Troubleshooting a 556m Long Sand/Clay Slurry Pipeline**  
*N Heywood, BHR Group, UK; N Alderman, Private Consultant, UK; P Harris, Sibelco Ltd, UK* Pg 73
- 11:05 **Design of the SAR Cheshmeh Gravity Flow Tailings Pipeline, Iran**  
*A D Thomas, Slurry Systems Pty Ltd, Australia; R Rieschieck, A Roshdieh, ATC Williams Pty Ltd, Australia* Pg 87

### SESSION 12: TAILINGS, TRANSPORT AND PLACEMENT PART 2

SESSION CHAIR: Dr Angus Paterson

- 11:25 **A Hydraulic Model for Predicting the Slopes of Alluvial Deposits**  
*T G Fitton, Fitton Tailings Consultants, Australia* Pg 239
- 11:45 **Effect of Coarse Solids Concentration on the Rheology of Non-Newtonian, Clay-Containing Slurries**  
*R B Spelay, S A Hashemi, Saskatchewan Research Council, Pipe Flow Technology Centre, Canada; M H Rahman, A E Olayode, R S Sanders, University of Alberta, Canada* Pg 251

12:05 **Discussion**

12:15 **Lunch and conference close**

13:00 **CSIRO – site visit**

For those who have registered for the site visit, please be outside the Rydges hotel for coach pick up at **12:50** for coach departure at 13:00



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