

12th Australasian Aluminium Smelting Technology Conference Final Program

TECHNICAL PROGRAM

Time	Paper	Author(s)	Affiliation(s)	Title
MONDAY - 3rd December 2018				
<i>Operational & Resources Challenges for the Aluminium Smelting Industry</i>				
8.00 - 9.00		Late Registration - Millennium Hotel		
9.00 - 9.15		Conference Chair - Stewart Hamilton	NZAS	Opening Comments
9.15 - 9.45	1a1	Svein Richard Brandtzæg	Hydro Aluminium	Innovative Technology for a Greener Metal of the Future
9.45 - 10.10	1a2	Miles Prosser	Australian Aluminium Council	Challenges Facing the Australasian Aluminium Industry
10.10 - 10.35	1a3	Loïc Maenner	Trimet France	Contribution of an Aluminium Smelter to Power Grid Stability
<i>10.35 - 10.55</i>		<i>Morning Tea</i>		
10.55 - 11.25	1b1	Les Edwards	Rain Carbon Inc.	Carbon Raw Materials Challenges and Opportunities for the Aluminium Industry
11.25 - 11.55	1b2	Roy A. Cahill, Patrice Palau	Pacific Aluminium-PTC	Common Root Causes for Anode Problems within the Reduction Cell
11.55 - 12.25	1b3	Martin Robitaille, Dinesh Umapathi	Sohar Aluminium	Readiness / Minimize Loss to Prevent Unplanned Shutdown of Aluminium Smelter and Recovery, if Shut
<i>12.25 - 13.25</i>		<i>Lunch</i>		
13.25 - 13.55	1c1	Michael A. Sisley	Rio Tinto Aluminium	Alumina Quality – A Refinery Perspective
13.55 - 14.20	1c2	Grant J. McIntosh, Gordon E.K. Agbenyegah, Margaret M. Hyland, James B. Metson	LMRC, University of Auckland, Victoria University of Wellington	Helping to Specify Alumina Qualities for the Future
14.20 - 14.55	1c3	B. Allano, J. F. Bilodeau, S. Bouvet, S. Guerard, S. Renaudier, H. Roustan	Aluminium Technology Solutions - Rio Tinto Aluminium	The Challenge of Alumina Dissolution in High-Productivity Cells
14.55 - 15.25	1c4	John Grandfield	Grandfield Technology Pty Ltd	Challenges for Managing Metal Quality: a Cast House Perspective
<i>15.25 - 15.50</i>		<i>Afternoon Tea</i>		

15.50 - 17.00		Discussion - Meeting Industry Challenges - viewed through a crystal ball		
		Chair: Miles Prosser (Australian Aluminium Council) & Stewart Hamilton (NZAS)		
		Panels:		
		Jenny Purdie	Adani Renewables	Solar Power Station Installation in Queenstown
		Koichiro Mashio	MashioASCS Ltd.	Possible Change of Quantity and Quality of Metals from UC Rusal
		Sergey Akhmetov	EGA	Middle East Perspective of Power Management
		Mike Roan	Meridian Energy Ltd	Energy Issues from New Zealand Perspective
	Les Edwards	Rain Carbon Inc.		
18.00		<i>Depart for Conference Dinner</i>		

TUESDAY - 4th December 2018				
Work Practices & Materials				
8.10 - 8.20				Day 2 Welcome and Session Introduction
8.20 - 8.50	2a1	Terry Reeves, Meaghan Noonan	NZAS, Pacific Aluminium-PTC	NZAS Baking Furnace Rebuilds – 20 Years of Multi-Sectional Rebuild Methodology
8.50 - 9.20	2a2	Arne P. Ratvik, Samuel Senanu, Zhaohui Wang, Tor Grande	Sintef Industry, NTNU	Understanding Cathode Wear
9.20 - 9.50	2a3	Frank R. Cannova, Mike D. Davidson, Barry A. Sadler	BP Coke, Net Carbon Consulting Pty Ltd	Opportunities to Use Particle Technology to Improve Anode Quality
<i>9.50 - 10.10</i>		<i>Morning Tea</i>		<i>Sponsor: FRIEM</i>
10.10 - 10.35	2b1	Nabeel Al Jallabi, Vasantha Kumar Rangasamy	Alba	The Conversion from Gas to Electrical Preheating of Cells in Alba Old Reduction Lines 1 - 3
10.35 - 11.00	2b2	Vinod Janardhanan Nair, Shaikha Al Shehhi, Konstantin Nikandrov, Nadia Al Ahli, Ibrahim Obaid Al Ali	EGA	Improvements in Pot Preheating Procedure at EGA Al Taweelah Potline 3
11.00 - 11.15	2b3	Darren Campbell	NZAS	Challenges of Restarting a Longtime Idle Potline
11.15 - 11.40	2b4	Vasantha Kumar Rangasamy, Nabeel Al Jallabi	Alba	Alba's Experience and Success with Dry Start-up
11.40 - 12.20		Discussion - Cell Restart		
		Chair: Evan Andrews (BSL)		
		Panels:		
		Darren Campbell	NZAS	
		Sergey Akhmetov	EGA	
	Till Reek	Trimet Aluminium SE		
<i>12.20 - 13.20</i>		<i>Lunch</i>		
Reduction Cell Monitoring & Performance				
13.20 - 13.25				Session Introduction
13.25 - 13.50	2c1	Ron Kremser, Niclas Grabowski, Roman Düssel, Kay Kessel, Dietmar Tutsch	University of Wuppertal, Trimet Aluminium SE	Investigation of Different Measurement Techniques for Individual Anode Currents in Hall-Héroult Cells
13.50 - 14.15	2c2	Yuchen Yao, Jie Bao, Maria Skyllas-Kazacos, Barry J. Welch, Ali Jassim	University of New South Wales, EGA	Process Monitoring in Aluminium Reduction Cells Using Anode Current Measurement
14.15 - 14.40	2c3	Stephen L. Rutledge	Pacific Aluminium-PTC	Techniques to Increase the Power of the BACI Analysis Method

14.40 - 15.05	2c4	Youjian Yang, Xiaozhen Liu, Zhaowen Wang, Jiangyu Yu, Bingliang Gao	Northeastern University	Alumina Dispersion Rate in a Current Intensified Aluminum Smelting Cell
<i>15.05 - 15.25</i>		<i>Afternoon Tea</i>		
15.25 - 15.50	2d1	Tapan Kumar Sahu, Najeeba Hassan Al Jabri, Saleh Ahmed Abdulla Ahmed Rabbaa, Ahmed Ismaeel Ahmed Mohamed Al Marzouqi, Amer Abdul Rahman Mahmood Mohammed, Jamil Jamal Eddin Wazir Eddin, Bienvenu Ndjom, Pragasan Palavar, Rajwinder Kaur, Edouard Gerard Mengue Mofor, Shaikha Rashed Obaid Al Shehhi	EGA	Using Anode and Rod Tracking Systems to Improve Smelter Performance by Enhancing the Management of Variation in Coke Quality
15.50 - 16.15	2d2	Mark Illingworth, Andrew Wilson, Mike Pearman, Gareth Wishart	Pacific Aluminium-PTC, NZAS	Agile Reduction Cell Process Control System Development at Pacific Aluminium
16.15 - 16.40	2d3	Niclas Grabowski, Ron Kremseel, Roman Düssel, Albert Mulder, Dietmar Tutsch	University of Wuppertal, Trimet Aluminium SE	Using Random Forest Regression for Predicting and Analysing Reduction Cell Behaviour

WEDNESDAY - 5th December 2018

<i>8.00</i>		<i>1st bus departs from Millennium Hotel for NZAS</i>		
<i>8.30</i>		<i>2nd bus departs from Millennium Hotel for NZAS</i>		
		Lunch		<i>Sponsor: NZAS</i>

THURSDAY - 6th December 2018

Improving Energy Efficiency

8.00 - 8.10				Day 4 Welcome and Session Introduction
8.10 - 8.35	4a1	Patrice Palau, Darryl Frew, Guorong Cao, Troy Martin, Hao Zhang	Pacific Aluminium-PTC, Tomago Aluminium	The Trial and Implementation of Pacific Aluminium Low Energy (PA-LE) Cells at Tomago Aluminium
8.35 - 9.00	4a2	Dagoberto S. Severo, Vanderlei Gusberti.	CAETE Engenharia	MHD Modelling of Metal Flow Barriers
9.00 - 9.25	4a3	Peter M. Entner, Marc Dupuis	PE Software and Consulting, GéniSim Inc	Extended Energy Balance for Hall-Héroult Electrolysis Cells
9.25 - 9.50	4a4	Jingjing Liu, Shanghai Wei, Mark Taylor	NZ Product Accelerator, University of Auckland	Understanding the Structure of Ledge and Crust in Modern Cells
9.50 - 10.15	4a5	Keith Heathcote, Evan Andrews, Mark Illingworth, Steven Pert	NZAS, BSL and Pacific Aluminium-PTC	NZAS Step Change Power Efficiency Improvement
<i>10.15 - 10.35</i>		<i>Morning Tea</i>		
10.35 - 11.00	4b1	Adam J. Berkovich, Fabien Valthier, Roy Cahill, Evan Andrews, Vis Naidoo, Allan Graham, Greg Picot, Nathan Harrower, Simon Lix, Shane Tinnock	Pacific Aluminium-PTC, Bell Bay Aluminium, BSL and NZAS	Anode Voltage Drop - a Continuous Improvement Journey
11.00 - 11.25	4b2	Haris Salihagić Hrenko	Talum	Impacts of Introducing In-situ Measurements on the Electrolysis Cells Performance
11.25 - 11.50	4b3	David Molenaar, Fabien Valthier, Adam Berkovich and Mark Cooksey	CSIRO, Pacific Aluminium-PTC	Optimising Anode Rod Fleet Maintenance and the Development of a Minimum Economic Cost Strategy

11.50 - 12.15	4b4	Adam J. Berkovich, Guorong Cao, Michael Hart, Andrew Karbowski, James Roberts, Thomas Rodgers	Pacific Aluminium-PTC, BSL	Upgrade and Implementation of a New Rod Assembly Design for Boyne Smelters
12.15 - 13.15		Lunch		
Environmental Footprint Improvements				
13.15 - 13.20				Session Introduction
13.20 - 13.55	4c1	David S. Wong, Barry Welch	LMRC, Welbank Consulting Ltd.	PFCs & Anode Products - Myths, Minimisation and IPCC Method Updates to Quantify the Environmental Impact
13.55 - 14.20	4c2	Jing Shi, Choon-Jie Wong, Yuchen Yao, Jie Bao, Maria Skyllas-Kazacos, Barry J. Welch	University of New South Wales	Advanced Feeding Control of Aluminium Reduction Process
14.20 - 14.45	4c3	Andrew Wilson, Mark Illingworth, Mike Pearman	Pacific Aluminium-PTC	Anode Effect Prediction and Pre-Emptive Treatment at Pacific Aluminium
14.45 - 15.10	4c4	A. Mulder, P. Lavoie, R. Düssel	Trimet Aluminium SE, LMRC	Effect of Early Abnormality Detection and Feed Control Improvement on Reduction Cells Performance
15.10 - 15.30		Afternoon Tea		
15.30 - 15.55	4d1	Thor A. Aarhaug, Trond Brandvik, Heiko Gaertner, Arne P. Ratvik, Ole S. Kjos	Sintef Industry, NTNU	Assessment of Anode Baking Furnace Gas Composition
15.55 - 16.20	4d2	Gordon E. K. Agbenyegah, Grant J. McIntosh, Margaret M. Hyland, James B. Metson, Are Dyroy, Nancy J. Holt, Astrid J. Meyer	LMRC, University of Auckland, Victoria University of Wellington, Hydro Aluminium	Investigating the Soda Factor in HF Scrubbing
16.20 - 17.00		Discussion - Actions, Potential Targets and Options for Achieving a Cleaner Environment		
		Chair: Barry Welch (The University of New South Wales)		
		Panels:		
		David Wong	LMRC	
		Nancy Holt	Hydro Aluminium	
		Thor A. Aarhaug	Sintef Industry	
18.00		Depart for Farewell Dinner & Karaoke		

FRIDAY - 7th December 2018				
Actions & Opportunities to Meet Challenges				
8.20 - 8.30				Day 5 Welcome and Session Introduction
8.30 - 9.00	5a1	Martin Segatz	Hydro Aluminium	Strategy and New Initiatives to Control Operations for Low Energy Operations
9.00 - 9.30	5a2	Sergey Akhmetov, Jose Blasques, and Maitha Ismail Faraj	EGA	Potline Retrofit to Increase Productivity under Energy Supply Constraints
9.30 - 10.00	5a3	Fabien Valthier, Thomas Booby, Kurtis Longman, Dylan Urane, Paul Cavanagh, Mathew Burke, Rowena Stewardson, Nathan Harrower, Paul Robinson	Pacific Aluminium-PTC, NZAS, BSL	Aluminium Smelting Applications for Imaging Analysis and Control
10.00 - 10.20		Morning Tea		

10.20 - 10.50	5b1	Edouard Mofor, Ali Jassim, Jamil Jamal, Alexander Arkhipov	EGA	Insight into Hall-Héroult Reduction Cell Performance through Using Online Anode Tracking System and Butt Analyser
10.50 - 11.20	5b2	Ming Liu, Xiaodong Yang, Yafeng Liu, Yanfeng Lu, Yi Liu, Hui Ban	SAMI	The Successful Modernization of SM-17SE Pot in Inalum
11.20 - 11.50	5b3	Allan Graham, Anthony Reeve, John Collins, Alan Tomsett, Roy Cahill, Meaghan Noonan, Jean-Philippe Schneider, Arnaud Bougier	Bell Bay Aluminium, Pacific Aluminium-PTC, Rio Tinto Aluminium	Increased Anode Production at Bell Bay Aluminium Using a New Baking Furnace Design Concept without Headwall
11.50 - 12.10		Mark Dorreen, Alan Tomsett	Organising Committee - LMRC and Rio Tinto	Closing Comments and Prize Giving
<i>12.10 - END</i>		<i>Farewell Lunch</i>		