


Chemeca 2018 technical programme*

Sunday 30 September

18:00-20:00	<p>Welcome Reception</p> <p>Prime Waterfront Restaurant and Bar, Lake-side staircase, just past the Main Town Pier, Queenstown Lakefront</p> <p>Welcome reception sponsored by</p> 
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Monday 1 October 2018


	Galaxy 1 (Millennium Hotel)	Galaxy 2 (Millennium Hotel)	Galaxy 3 (Millennium Hotel)	Conference 1 (Copthorne Hotel & Resort)	Conference 2 (Copthorne Hotel & Resort)
8:55-9:00		<p>Conference Opening</p> <p>Ken Morison, Chemeca 2018 Technical Chair</p>			
9:00-10:00		<p>Plenary 1</p> <p>Ken Rivers, President, Institution of Chemical Engineers (IChemE)</p>			
10:00 – 10:30	<p>Morning tea</p> <p>Observatory Restaurant (Millennium Hotel)</p>				
	Catalysis	Food and drink	Separations - Membranes	Industrial	
	Chair: Alex Yip, University of Canterbury	Chair: Ian Wilson, University of Cambridge	Chair: Dianne Wiley, The University of Sydney	Chair: Allyson Woodford, BP	
10:30 – 10:45	<p>304 Keynote: <i>Catalysis Closing the Carbon Loop - Catalytic CO2 Reduction</i></p> <p>Rose Amal, UNSW</p>	<p>53 On the Formation of Surface Fat on Spray-Dried Dairy Powders</p> <p>Cordelia Selomulya, Monash University</p>	<p>167 The Challenges and Opportunities of Effluent Treatment in the Dairy Industry</p> <p>George Chen, The University of Melbourne</p>	<p>25 Enhancing Process Yield of a Continuous Stir Tank Reactor for a Reaction with Low-Single-Pass Conversion in a Fixed Volume System</p> <p>Michael Akindeju, Mkpro Engineering Pty Ltd</p>	
10:45 – 11:00		<p>107 Technico-Economic Analysis: A Case Study for Orange Juice Liquids and Spray-Dried Powders</p> <p>Tim Langrish, The University of Sydney</p>	<p>192 Developing Open-Source Simulators for Industrial-Scale Membrane Distillation Module Design</p> <p>Guangxi Dong, UNSW</p>	<p>23 De-fouling Commercial Water Cooled Chiller Condensers with ATCS</p> <p>Davide Ross, Pangolin Associates</p>	
11:00 – 11:15	<p>22 Development of a Novel Three-Dimensional Printed Heterogeneous Catalyst System for Sustainable Chemical Synthesis</p> <p>Shanthi Priya Samudrala, Monash University</p>	<p>54 On Reducing the Viscosity of High Solids Feed For Spray Drying Of Dairy Powders</p> <p>Cordelia Selomulya, Monash University</p>	<p>20 Separation: Membranes. Keynote</p> <p>Membranes for Separating Molecules</p> <p>Where are we, and where are we going?</p> <p>Andrew Livingston, Imperial College London</p>	<p>38 Synthetic Rubber Manufacture in Altona, Victoria: Relevance to Today</p> <p>Robert Burford, UNSW</p>	
11:15 – 11:30	<p>57 Nitrogen-doped Bamboo-like Carbon Nanotubes with Ni Encapsulation for Persulfate Activation to Remove Emerging Contaminants with Excellent Catalytic Stability</p> <p>Jian Kang, Curtin University</p>	<p>139 Modelling of Milk Powder Evaporators for Understanding Their Dynamic Effects and Assessing Their Costs</p> <p>Brent Young, The University of Auckland</p>		<p>73 The Future is Here: Robotic Catalyst Removal</p> <p>Christopher Jansen, WorleyParsons</p>	
11:30 – 11:45	<p>90 Catalytic Wet Oxidation of Refractory Acetic Acid: Can Iron Reduce the Temperature?</p> <p>Hooman Javaheri, The University of Auckland</p>	<p>122 A Regression Model for Estimating Sugar Crystal Size in a Fed-Batch Vacuum Evaporative Crystalliser</p> <p>Sunday Alabi, University of Uyo</p>	<p>195 Combined Fresh Water Production and Power Generation Using Membrane Distillation Technology</p> <p>Farzaneh Mahmoudi, RMIT University</p>	<p>301 Keynote: <i>The role of Chemical and Process Engineering in Asset Technical and Operating Integrity in Light of Evolving Regulatory Framework.</i></p> <p>Kerry Williamson, Shell Todd Oil Services</p>	
11:45-12:00	<p>143 Synthesis of Highly Active Mesoporous Alumina Supported Pt-Ni Catalyst for Oxidative Reforming Of Methanol Into Hydrogen</p> <p>Prashant Gupta, Monash University</p>	<p>34 Feasibility of Producing Maple Syrup in New Zealand</p> <p>Matt Watson, University of Canterbury</p>	<p>30 Nanocomposite Membranes for Gas Separation and Water Desalination</p> <p>Huanting Wang, Monash University</p>		
12:00 – 12:15	Poster pitches				
12:15 – 13:15	<p>Lunch</p> <p>Observatory Restaurant (Millennium Hotel)</p>				
	Galaxy 1 (Millennium Hotel)	Galaxy 2 (Millennium Hotel)	Galaxy 3 (Millennium Hotel)	Conference 1 (Copthorne Hotel & Resort)	Conference 2 (Copthorne Hotel & Resort)
	Catalysis	Food	Separations	Safety & Industrial	Waste
	Chair: Rose Amal, UNSW	Chair: Tim Langrish, The University of Sydney	Chair: Andrew Livingston, Imperial College London	Chair: Kerry Williamson, Shell Todd Oil Services	Chair: David Lewis, The University of Adelaide
13:15-13:30	<p>66 Oxidative Dehydrogenation of but-1-</p>	<p>255 Investigation of Whipped Cream Foam</p>	<p>52 Polymeric Membranes Treated with Supercritical Carbon Dioxide for</p>	Safety, Keynote	<p>251 Using Electrical Resistance Tomography to</p>


	ene with CuO-loaded Catalyst Takayasu Kiyokawa, Kansai University	Structures for Improved Stability Samuel Rogers, Fonterra Co-operative Group Limited	Improved Gas Separation Performance. Colin Scholes, University of Melbourne	<i>Ammonia Refrigeration – A Process Safety Perspective</i> Adrian Dickison, BECA	improve Sludge Mixing in Anaerobic Digesters Doug Allitt, RMIT University
13:30 – 13:45	21 Toward the Sustainable Synthesis of Propanols from Renewable Glycerol Over Alumina Supported Palladium-Molybdenum Oxide Catalysts Shanthi Priya Samudrala, Monash University	261 Sedimentation in UHT milk: Effect of Thermal Profile Vikas Gaur, Fonterra	131 Effect of pH on Graphene Oxide-ionic Liquid Membrane Fabrication to enhance CO2 separation Jaleh Mansouri, UNSW		81 The Influence of Oxygen on Cellulose Degradation Kinetic During Hydrothermal Process Azadeh Yousefifar, University of Auckland
13:45 – 14:00	51 Effect of Re on Photo-Fenton Catalytic Activity of Rare Earth Ferrite ReFeO3 Linda Li, Murdoch University	99 Food Keynote A sustainable dairy future Phil O'Malley, Synlait Milk	266 Sea-salt Purification by Hydroextraction Using Percolation Method Judy Witono, Parahyangan Catholic University	72 The use of Dynamic Simulation to Improve Process Safety John Lee, University of Queensland	165 Effect of Biochar on Hydrogen Production via Anaerobic Digestion as Compared to Other Solid Additives: Role of Surface Structure and Acidity Nimas Sunyoto, The University of Western Australia
14:00 – 14:15	33 Structural Characterization of Cu/MWCNTs and its Catalytic Activity in Low-Temperature Water-Gas Shift Reaction Luqmanulhakim Baharudin, University of Canterbury		257 Study on Droplet Entrainment Distribution in the Composite Quench Chamber Yifei Wang, East China University of Science and Technology	127 Don't Wait for an Accident: Proactive Detection of Latent Human Factors Risks Melanie Todd, The Keil Centre	157 Oxidative Hydrothermal Decomposition of Non-recyclable Waste Plastic Saeid Baroutian, The University of Auckland
14:15-14:30	203 Photocatalytic Removal of Metformin Using poly(3,4-ethylenedioxythiophene) (PEDOT) Polymer Lokesh Padhye, The University of Auckland	18 Cleaning Tanks by Impinging Liquid Jets Ian Wilson, University of Cambridge	178 Encapsulation of Lacunary Polyoxometalates with Molecularly Imprinted Polymers for Removal of Pesticides Sruthi Guru, IIT Madras	88 Impact of Changing Composition on the Operation of the Pohokura Production Plant Andrew Hooks, Shell Taranaki	249 Enhancement of Syngas Production from Gasification of Sewage Sludge by Adding Calcium Oxide Xiaoxia Yang, Macquarie University
14:30-14:45		223 Development of Novel Experimental techniques To Elucidate the Cleaning of Complex Food Soils Georgina Cuckston, University of Cambridge		129 Maui Platform B to Maui Platform A Pipeline Low Flow Constraint with Kinetic Hydrate Inhibitor Lance Hunt, Shell	59 Wastewater Microalgae for Low-Cost Quality Liquid Biofuel Production: is it a Realistic Approach? Mohammed Farid, The University of Auckland
14:45-15:00		206 Food & Pharma: Fundamentals The Effects of Lactose on Calcium Phosphate Precipitation Pariya Noeparvar, University of Canterbury		<i>Safety & Industrial Keynote</i> An Asset Owner's Personal Journey with Process Safety Allyson Woodford, Operations Manager - BP Kwinana	68 Understanding the Effects of Ambient Humidities on the Self-Heating Process of Compost Piles Thiansiri Luangwilai, Royal Thai Air Force Academy
15:00-15:30	Afternoon tea Observatory Restaurant (Millennium Hotel)				
15:30-16:30		Plenary 2 <i>Philosophy and Activities in Communicating about Science And Engineering to Potential Students and The Wider Community</i> Dr Michelle Dickinson, Senior Lecturer, University of Auckland, Nanogirl Labs			
16:30-17:00		Plenary 3 <i>Can Chemical Engineering improve Pinot Noir, Art or Science?</i> Paul Jacobson, Owner, Judge Rock Pinot Wines Central Otago NZ, Senior Engineer - Stantec			
17:00 – 18:00	Poster presentation session Impressions Restaurant (Cophthorne Hotel & Resort)				
	Poster session sponsored by				

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Tuesday 2 October 2018

	Galaxy 1 (Millennium Hotel)	Galaxy 2 (Millennium Hotel)	Galaxy 3 (Millennium Hotel)	Conference 1 (Cophorne Hotel & Resort)	Conference 2 (Cophorne Hotel & Resort)
8:30-9:25		Plenary 4 <i>Comparing and contrasting electricity systems of New Zealand and Australia</i> Alison Andrew, Chief Executive, Transpower			
9:25-9:30		Rockwell Automation presentation			
		Energy	Sustainable energy and sustainable funding	Pyrolysis	Particles - Fluidization
	Chair: Adrian Dickison, BECA	Chair: Brent Young, The University of Auckland	Chair: Andrew Hoadley, Monash University	Chair: Peter Ashman, University of Adelaide	Chair: Daniel Holland, The University of Canterbury
9:30-9:45	Room rearrangement	Room rearrangement	230 Sustainability Keynote <i>Our Climate Planning Challenge - two perspectives</i> Stephen Drew, SRD Consulting	163 Characterisation of Precipitates from Spent Tyre Pyrolysis Oil and Its Distillates after Accelerated Ageing Dongke Zhang, The University of Western Australia	91 DEM Simulation of Chain-Aggregation of Magnetizable particles in the presence of van der Waals Force Ariful Islam, The University of Newcastle
9:45-10:00	147 Gas pipelines and the Changing Face of Australian Energy Regulation Richard Robinson, R2A Due Diligence Engineers	237 Steam Reforming of Naphthalene over a Simulated Moving Bed of K-Loaded Biochar Hongwei Wu, Curtin University		228 Heat of Primary Pyrolysis for Wood Jim Jones, Massey University	196 Numerical Investigation of Electrostatic Charge Generation in Fluidized Bed and its Effect on the Hydrodynamics Navid Mostoufi, University of Tehran
10:00-10:15	247 Examine the Application of Venting duct on Methane and Coal Dust Explosion Characteristics Shaolei Gai, The University of Newcastle	83 Python Modelling and Regression of Methanex's Motunui Steam Methane Reformer Jane Holt, University of Canterbury	29 The R&D Funding Landscape in New Zealand for Chemical Engineering Max Kennedy, NZ Ministry of Business, Innovation & Employment	182 Precise Determination of Specific Heat of Culinary Smoking Wood by Means of DSC (Differential Scanning Calorimetry) Qun Chen, Massey University	43 Hydrodynamics of Bubbling Fluidized Beds of FCC Particles Under Different Imposed Solids Fluxes: Effect of Inlet & Outlet Geometry Yongmin Zhang, China University of Petroleum, Beijing
10:15-10:30	159 Multi-level Hazard Identification and Representation via knowledge based Systems Ian Cameron, The University of Queensland	77 Mathematical Modeling of an air-PCM Heat Exchanger Gohar Gholamibozanjani, University of Auckland	44 Existential Risk - Why we Urgently need our Population and Economy to degrow Ian Thomas, I F Thomas & Associates	263 Smouldering Limit in Frictional Heating of Wood – Pilot Study Jim Jones, Massey University	80 CPFD Simulation on Effects of Louver Baffle in a Bubbling Fluidized Bed of Geldart A particles Zhijun Yang, China University of Petroleum (Beijing)
10:30-10:45	226 Journey of Safety Case Muhammad Iqbal Qasim, Baker Hughes	94 Energy Model study of Charcoal Combustion in Ironmaking Blast Furnaces Yansong Shen, UNSW	123 Emissions Reduction Roadmap for Industrial Process Heat Users in New Zealand Martin Atkins, University of Waikato		207 CFD-DEM Modelling of Bubble Properties in a Single Jet Fluidized Beds Zongyan Zhou, Monash University
10:45-11:15	Morning tea Observatory Restaurant (Millennium Hotel)				
	Galaxy 1 (Millennium Hotel)	Galaxy 2 (Millennium Hotel)	Galaxy 3 (Millennium Hotel)	Conference 1 (Cophorne Hotel & Resort)	Conference 2 (Cophorne Hotel & Resort)
	Education	Energy	Biochemical	Minerals	Particles
	Chair: Peter Gostomski, The University of Canterbury	Chair: Stephen Drew, SRD Consulting	Chair: Conan Fee, The University of Canterbury	Chair: Frances Neville, The University of Newcastle	Chair: Karen Hapgood, Deakin University
11:15-11:30	116 A Novel Use for an Old Problem: The Tennessee Eastman Challenge Process as a Teaching Tool Christoph Bayer, TH Nuernberg	244 Dynamic Resource Depletion Methodology Based on Consequence Analysis: A New Zealand Natural Gas Case Study Andrew Hoadley, Monash University	181 Biochemical: Modelling. Keynote <i>Biochemical Engineering and Process Systems Engineering for Resource Recovery</i> Professor Krist V. Gernaey, Technical University of Denmark	40 Power Ultrasound Induced Cavitation for Enhancing Mineral Processes Anthony Farmer, Agricola Consulting Services	58 There's no Business without Flow Business! Grant Wellwood, Jenike & Johanson
11:30-11:45	118 PFAS Treatment as an Open-Ended Design Project John Kavanagh, The University of Sydney	193 CO2 Capture from High Concentration CO2 Natural Gas by Pressure Swing Adsorption Paul Webley, The University of Melbourne		42 Microstructure and Ageing Behaviour of Swelling Clay Gels Yee-Kwong Leong The University of Western Australia	128 Impact of the Liquid Phase on the Electrostatic Formation of Polymer Stabilised Liquid Marbles and Aggregates Casey Thomas, University of Newcastle
11:45-12:00	27 Android Based Virtual Lab In Teaching Process Control Norliza Abd.rahman, Universiti Kebangsaan Malaysia	303 Energy: Keynote <i>Community Engagement and Energy Policy: Explaining the Complexities to a Broad Audience</i>	240 Exploring usability of ExProSim with Mobile Phase Modulator Model for Breakthrough Analysis of Acidic Whey Proteins	82 Effect of Organic Acids on Heavy Metal Variation During Struvite Precipitation Brent Young, University of Auckland	234 Effect of Ultrasonic Vibration on the Nucleation Onset Temperature of Micro-sized Water Droplets Shaolei Gai, University of Newcastle

		Richard Owen ExxonMobil Australia	Sanket Jadhav, Curtin University		
12:00-12:15	185 Educating Investigators In The 21st Century David Skegg, Central Queensland University		164 A Kinetic Modelling Study of the Effect of Selected Impurities on the Ignition of Crude Glycerol Herry Lesmana, The University of Western Australia	115 MOF Based Microfluidic Enzymatic Biosensor via Surface Patterning and Biomineralization Amir Razmjou , University If New South Wales	198 Impact of Microwave Heating Temperatures on the Pharmaceutical Powders Characteristics Maha Al-Ali, Rmit University
12:15-12:30	37 Some lessons from Industrial Consulting Robert Burford, UNSW	162 A Chemkin Modelling Study of the Ignition and Combustion Characteristics of NH ₃ in Air in the Presence of H ₂ and NO _x Herry Lesmana, The University of Western Australia	262 Rapid and Efficient Process Synthesis for Downstream Pharmaceutical Process Development Isuru A. Udugama, Technical University of Denmark	56 Systematic Analysis of The Effects of Polymer Molecular Weight on Colloidal PEI-TMOMS silica Particle Synthesis Frances Neville, The University of Newcastle	76 Sink-Hole Fluidization for Dry Separation of Mineral Particles Deepak Kumar, Arc Research Hub For Advanced Technologies For Australian Iron Ore, Newcastle Institute For Energy And Resources
12:30-13:30	Lunch Observatory Restaurant (Millennium Hotel)  Lunch sponsored by				
13:30 – 14:25		Plenary 5 <i>Environmental Challenges Facing the Pharmaceutical Industry in China</i> Professor Jimmy Yung, University of New South Wales			
14:25 – 14:55		Chemeca Medal winner David Platts, PDV Consultants			
14:55 – 15:25		<i>Transforming the Profession to Face the Future</i> Susan Freeman-Green, Chief Executive - Engineering NZ			
15:25-15:30		Promotion of <i>Chemeca 2019</i> Dianne Wiley, The University of Sydney			
15:30-16:00	Afternoon tea Observatory Restaurant (Millennium Hotel)				
	Water Food & Pharma	Energy	Biochemical	Minerals - Metals	Particles
	Chair: Cordelia Selomulya, Monash University	Chair: Robert Burford, UNSW	Chair: Stephen Tallon, Callaghan Innovation	Chair: Matt Watson, The University of Canterbury	Chair: Clive Davies, Massey University
16:00-16:15	<i>305 Water Keynote</i> Priyan Perera, Operations Manager, Water Supply, Watercare Services	259 Geothermal Energy in New Zealand Process Industries Brian Carey, GNS Science	190 Extraction of Chlorophylls and Carotenoids from Vegetative and Cyst cells of Haematococcus Nilanjana Mazumdar, Dept. of Chemical and Process Engineering, University of Canterbury	103 Bioleaching of Spent Automotive Catalytic Convertors for Recovery of Platinum Group Metals using <i>P. fluorescens</i> and <i>B. megaterium</i> Yen-peng Ting, National University of Singapore	92 Desliming Ultra-fine Iron Ore in the REFLUX™ Graviton James Carpenter, University of Newcastle
16:15-16:30		260 Hanmer Springs Thermal Pools and Generation Project Jeff Smit, DETA Consulting	31 Epoxidation of Vegetable Oils Under Microwave Irradiation, Process Intensification for Biomass Conversion Adriana Freitas, Åbo Akademi	101 Sonobioleaching of E-waste and Biomineralization of Gold Nanoparticles Yen-peng Ting, National University of Singapore	151 An Investigation into Enhancing Fine Particle Recovery Using a Recycle Load in the Reflux Flotation Cell Matthew Cole, University of Newcastle, Australia
16:30-16:45	158 Effects of Emulsion Stability and Drying Temperature on the Physico-Chemical Properties of Spray Dried Coconut Milk Powder Farah Taip, Universiti Putra Malaysia	78 Reducing Steam Separator Carryover and Improving Scrubbing Performance in a Very Low Pressure Geothermal Steam System Tom Misa, Contact Energy	50 From Aromatic Tars to Light Hydrocarbon Gas Species During Biomass Steam Gasification in a 100kW dual fluidised bed gasifier Ziyin Zhang, CRL Energy Ltd	28 Value Extraction from Waste in the Steelmaking Industry Samuel Martin Treceno, University of Canterbury	74 Gravity Separation of Gold Ore Using the REFLUX Classifier to Achieve Coarse Particle Gangue Rejection Callan Lowes, University of Newcastle
16:45-17:00	256 Exploring the 3D Printing Binder Jetting Process for Pharmaceutical Applications Anthony Antic, Deakin University	154 Selecting Suitable Locations for Wave Energy Farms in New Zealand using Geo-Spatial Multi-Criteria Analysis. Danielle Bertram, University of Waikato	225 Optimization and Characterization of Hydrochar from Microwave-Induced Hydrothermal Carbonization of Rice Husk Nizamuddin Sabzoi, RMIT University	250 Integrating Calcium Looping into the Iron And Steel Production for Steelmaking with Cost-Effective CO ₂ Emission Reductions Sicong Tian, Macquarie University	208 Radial Segregation of Binary-Sized Mixtures of Ellipsoids in a Rotating Drum Zongyan Zhou, Monash University

17:00-17:15		235 Hydrothermal liquefaction - a Promising Technology at The Nexus of the Wastewater and Oil Industries David Lewis, The University of Adelaide	49 An Assessment of The Viability and Benefits of Using Vegetable Oil Fuels and of more Fundamental Ways to Offset the Impending Fossil Fuel Dilemma Ian Thomas, I F Thomas & Associates	243 Investigation of the Solubility of Olivine for use in Carbon Dioxide Storage Nan Yang, University of Canterbury	120 Comminution and Flotation of Renascor Graphite Ore from Arno Bay, South Australia Keith Quast, University of South Australia
19:00-22:30	<p>Chemeca 2018 Conference Dinner and Awards of Excellence in Chemical Engineering Skyline, Brecon St, Queenstown</p> <p>Conference dinner sponsored by</p> 				

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Wednesday 3 October 2018

	Galaxy 1 (Millennium Hotel)	Galaxy 2 (Millennium Hotel)	Galaxy 3 (Millennium Hotel)	Conference 1 (Cophorne Hotel & Resort)	
	Measurement and Control	Electrochemical	Energy Efficiency	Biomaterials	
	Chair: Jie Bao, UNSW	Chair: : Zongwen Liu, The University of Sydney	Chair: Martin Atkins, University Of Waikato	Chair: Peter Halley, UQ	
9:00-9:15	126 Spatially and Angularly Resolved Diffuse Reflectance Measurement System for Monitoring Suspensions of Large Particles Suresh Thennadil, Charles Darwin University	246 Towards Lead-Free Inorganic and Hybrid Perovskites for Photovoltaics and Optoelectronics Md Roknuzzaman, Queensland University of Technology	142 Total Site Mass, Heat and Power Integration of Hydrothermal Liquefaction with an Existing Kraft Pulp Mill Benjamin Hung Yang Ong, University of Waikato	85 From Starch to Biobased Ecomaterials for Wider Industrial Applications Brenton Fletcher, UQ	
9:15-9:30	79 Investigation of Performance of an Adaptive Kalman Filter for State Estimation of a Gas Phase Reaction in a CSTR Felix Baker, Charles Darwin University	125 Three-dimensional Heterostructured Copper Electrode for Conversion of Carbon Dioxide to Alcohols at Low Overpotentials Rahman Daiyan, Particles And Catalysis Research Group, The University of New South Wales	148 Enterprise-wide Optimization of Energy Systems in Steel Making Greg Siemon, University of Queensland	224 Challenges and Solutions in the Industrial Use of Nanocelluloses In Papermaking Angeles Blanco, Complutense University of Madrid	
9:30-9:45	26 On the Validation of a Hybrid Observer in the Polyolefin Production Process Jarinah Mohd Ali, National University of Malaysia (UKM)	191 Electrocatalysis for Energy Conversion Processes Shizhang Qiao, The University of Adelaide	141 Effect of Contribution Minimum Temperature Difference on Total Site Heat Integration Targets Amir Hossein Tarighaleslami, University of Waikato	184 A Novel Demineralized Bone Xenograft Material that has a Mechanically Stable Porous Structure Following an Optimised Processing Technique Ashvin Thambyah, University of Auckland	
9:45-10:00	111 Black Box Adaption Control by Using Neuro Systems Li-ru Hsu, National Chung Hsing University	45 Modelling the Kinetics of Modified Carbon Fibre Electrodes for Vanadium Redox Flow Batteries Leatham Landon-Lane, University of Canterbury	180 Pinch Analysis Techniques for Carbon Emissions Reduction in the New Zealand Energy Sector Michael Walmsley, School of Engineering, University of Waikato	179 Biosilica Recovery from Pulped Rice Husk by Acid Precipitation Dr Lanny Sapei, University of Surabaya	
10:00-10:15	219 A Review of Essential Software Packages used in Process Systems and Control Engineering Area Linh Vu, Murdoch University	201 Electrochemical: An Investigation on the Experimental Parameters Affecting Electrochemical Reduction of Carbon Dioxide on Gold Cathodes Hani Taleshi Ahangari, University of Canterbury	140 Using Monte Carlo Techniques to Analyse the Effect of Stream Variability on the Performance of Heat Exchanger Network Retrofits Nathan Lal, Energy Research Centre, University of Waikato		
10:15 – 10:30	130 Estimation of Spatial Alumina Concentration in an Aluminium Reduction Cell Using a Moving Horizon Estimator Jie Bao, UNSW	93 Development and Optimization of a Tubular Based Direct Carbon Fuel Cell Module Michael Glenn, University of Newcastle			
10:35-11:00	Morning tea Observatory Restaurant (Millennium Hotel)				
	Flow & Rheology	Chemical Pot luck	Energy	Bio-separations	
	Chair: Roberto Moreno-atanasio, The University of Newcastle	Chair: Dongke Zhang, The University of Western Australia	Chair: Hongwei Wu, Curtin University	Chair: David Platts, PDV Consultants	
11:00-11:15	205 Conical Flow Analysis for Precision Capillary Rheometry Michael Sargent, University of Cambridge	161 Treatment of Asphaltenes from Vacuum Residue and Oil Sands with Various Ionic Liquids Nimas Sunyoto, The University of Western Australia	62 Xanthan Gum/Poly (Vinyl Alcohol) Polymer Solution: A Promising Blend for Temperature-Resistant and Salt-Tolerant Enhanced Oil Recovery Processes. Bashirul Haq, Department of Petroleum Engineering, Kfupm	89 Response of Botryococcus braunii to Repetitive Non-Destructive Extraction of Lipids with Heptane Brent Jackson, Murdoch University	
11:15-11:30	75 Mathematical Modelling of Annular Regimes of Counter-Current Gas-Liquid Flows in Annuli Mahshid Firouzi, The University of Queensland	264 Photobromination/ Dehydrobromination of Long Chain Alkanes Xiaoyu Wang, Fonterra Research And Development Centre	239 Simultaneous Optimization and Heat Integration of the coal-to-SNG Process with an Economic Objective Bo Huang, East China University of Science and Technology	96 Extraction of Bioactive Compounds From Kanuka Leaves Sinemobong Essien, University of Auckland	

11:30-11:45	146 Comparison of Conjugate Heat Transfer Schemes using the Lattice Boltzmann Method Ben Reynolds, University of Canterbury	70 Influence of Environmental Factors on the Release of Nutrients from Controlled Release Fertilizers Tom Meaclem, University of Canterbury	245 Intercalation Chemistry of Al-ions in MnO ₂ for Energy Storage Jickson Joseph, Queensland University of Technology	133 Extraction and Fractionation of Cannabinoids from Cannabis Sativa Stephen Tallon, Callaghan Innovation	
11:45-12:00	265 Computational Analysis of Bubble Loading Roberto Moreno-atanasio, The University of Newcastle	236 Thermophysical properties of Refrigerant Mixtures of Hydrofluoroolefins and Hydrofluorocarbons - New Data and Modelling Thomas Hughes, Monash University	32 Producing Lithium Chemicals for EV and Power Storage Katherine Tattersall, Hatch	144 Comparison Study On Ultrasound Assisted Heating Extraction and Conventional Heating Extraction of Pectin from Jackfruit's Waste Alifdalino Sulaiman, Universiti Putra Malaysia	
12:00-12:15	268 Local flow Regimes and Gas Distribution Characteristics in the Scrubbing-Cooling Chamber of an Entrained-Flow Gasifier Xin Peng, East China University of Science and Technology	216 Development of Raman Mapping Technique for Multiplex Bar-encoded Polymer Resins Zeyad Alwahabi, University of Adelaide			
12:15-13:00	Lunch Observatory Restaurant (Millennium Hotel)				

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Chemeca 2018 poster presentations*

Poster session - 17:00-18:00, Monday 1 October 2018, Impressions Restaurant (Copthorne Hotel & Resort)

Poster number	Abstract	Poster title	Presenting author	Organisation
1	11	Selectively capture of tobacco-specific nitrosamines in solution	Jian Hua Zhu	Nanjing University
2	15	Facile Synthesis of Conjugated Polymer with High Surface Area for High Efficient Adsorption of Organic and Biomolecules	Ying Wang	Nanjing University
3	19	Acidic Ionic Liquids Functionalized Polymorphous Silica Nanopheres: Fabrication and Catalysis Application	Zhen Li	Lanzhou Institute of Chemical Physics, Chese Academy of Sciences
4	46	Highly active Ytterbium loaded KIT-6 Absorbent for Phosphorus removal from wastewater	Mohamad Hassan Amin	RMIT University
5	47	Lanthanides-functionalised Mesoporous Silicate KIT-6 Screening for Phosphorous adsorption behaviour	Mohamad Hassan Amin	RMIT University
6	55	Unique particle tracers for identifying chemical engineering products and processes	Frances Neville	The University of Newcastle
7	60	Synthesis of propylene from ethanol with NiO-based catalyst	Yuki Okumura	Graduate School and Science and Engineering, Kansai University
8	63	Asymmetric Na-ion Storage Devices Based on Nanostructured Carbon Materials	Hyoung-Joon Jin	Inha University
9	64	Enhanced barrier properties of poly(vinylidene chloride) by incorporation of alkylated graphene oxide	Hyoung-Joon Jin	Inha University
10	61	Effect of Au-supporting Method on BiVO4 Photocatalyst on Efficient Hydrogen Peroxide Production	Kazushi Iwamura	Kansai University
11	65	Removal of Hydrogen Sulfide by Using Banana Peel Char	Jun'ichi Hayashi	Kansai University
12	69	A comparative study of potential adsorbents for separation of volatile anaesthetics from air	Teck Nam Ang	The University of Auckland
13	84	Application of Artificial Intelligence in Computer-Aided Tools for Organic Rankine Cycle (ORC) Systems Design	Shoulong Dong	University of Auckland
14	100	Effect of plasticizer concentration on preparation of biodegradable collagen films	Safiya Noorzai	University of Waikato
15	102	Mechanical Properties of Decoloured Bloodmeal Protein and PLA blends	Sandra Izuchukwu	University of Waikato
16	104	Hydrothermal carbonization of food waste and physiochemical and structural characterization: some preliminary findings	Najam Saqib	The University of Auckland
17	105	Evaluation on effect of consumers' delayed consumption of various bakery products towards its physical properties and chemical compositions.	Siti Mazlina Mustapa Kamal	Universiti Putra Malaysia
18	106	Factors Affecting the Toluene Removal and Carbon-End Points of a Soil Biofilter	Quang Anh Dang	University of Canterbury

Chemeca 2018 poster presentations*

Poster session - 17:00-18:00, Monday 1 October 2018, Impressions Restaurant (Copthorne Hotel & Resort)

Poster number	Abstract	Poster title	Presenting author	Organisation
19	108	Activated carbon derived from bacterial cellulose and its application as an adsorbent and catalyst support material	Arnon Khamkeaw	Chulalongkorn University
20	113	Green Synthesis of Silver Nanoparticles Using Moringa oleifera Fruit Extract and its Application to the Photocatalytic Degradation of Methylene Blue	Jervee Punzalan	University of The Philippines Manila
21	114	Properties and cure kinetics of natural rubber/functionalized graphene nanocomposite foam	Anongnat Somwangthanaroj	Chulalongkorn University
22	135	Rotational Moulding of Polyethylene Reinforced with Alkali Treated Hemp Fibre	Maria Oliveira	University of Waikato
23	149	Hydrogen production by steam reforming of methanol with NiCuAl complex oxide catalysts derived from layered double hydroxide	Taisei Akagi	Kansai University
24	137	Preparation and characterisation of Lignite Slurries for Land Application	Murray Mccurdy	CrI Energy
25	170	Sorption Properties of Lignite	Murray Mccurdy	CrI Energy
26	155	Production of an activated carbon from banana peel	Kei Shimizu	Graduate School and Science and Engineer, Kansai University
27	171	Simulation of indoor climate in chicken houses in a tropical region	Pimporn Ponpesh	Chulalongkorn University
28	177	Acrylate Modified Xanthan Gum for Application	Bashirul Haq	Department of Petroleum Engineering, Kfupm
29	183	An Open Source MS Excel Add-in for calculation of fluid properties using the Peng-Robinson Equation of State	Andrew Hooks	Shell Taranaki
30	121	Laboratory experiments on the production and characterisation of iron ore pellets	Keith Quast	University of South Australia
31	197	Surface chemistry and flotation characteristics of several Western Australian hematites	Keith Quast	University of South Australia
32	189	The Impact of Metabolic Uncouplers on the Performance of a Toluene-Degrading Biotrickling Filter	Roger Jay De Vela	University of Canterbury
33	200	High Silica adsorbents for CO2 separation from high pressure natural gas via selective adsorption	Lefu Tao	The University of Melbourne
34	210	Synthesis and characterisation of a PPSU/PEI/SiO2 nanocomposite membrane with enhanced hydrophilicity for copper removal from an aqueous solution	Roberto Moreno-atanasio	University of Newcastle
35	217	Emissions Reduction Roadmap for the Water and Wastewater Sector	Verena Schubert	Out Performers
36	229	An investigation of the effect of inserts on the mixing of spherical particles in model silos with conical hoppers	Clive Davies	Massey University
37	248	Process Design and Control Challenges on an aging Gas Production Platform	Andy Campbell	Shell Taranaki
38	254	Determining the optimal particle feeding position of a vortex air classifier	Guogang Sun	China University of Petroleum
39	269	Extraction and fractionation of Cannabinoids from Cannabis Sativa	Teresa Moreno	Callaghan Innovation
40	270	The electrochemical performance of alloys used in additive manufacturing	Bitu Bayatsarmadi	CSIRO

*Chemeca 2018 programme is a draft and subject to change