



PRISM



International Conference on
**Catalysis Science
and
Chemical Engineering**

December 2-4, 2019

Our Supporters



Venue

Mantra Bell City

215 Bell Street, Preston, VIC 3072

Australia

DAY
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Monday | December 02, 2019

08:15-08:45 Welcome Coffee, Registrations and Badge Pickup @ East Wing Lobby Area

08:45-09:00 Introduction and Welcome Address by Conference Moderator - **Dr. Ahmed F Halima**, RMIT University, Hydrogen Group Australia

Keynote Session

@ Bell City Ball Room I&II

09:00-09:45 **Catalysis for X-ray Nanochemistry**
Ting Guo, University of California, USA

09:45-10:30 **Three Step Catalytic Synthesis of Furandicarboxylic Acid (FDCA) from Sugar Acids**
Tuulamari Helaja, VTT Technical Research Centre, Finland

10:30-10:50 **Networking Break**

@ Ball Room Lobby

Special Talks by the Catscience Board

@ Bell City Ball Room I&II

10:50-11:15 **Renewable Hydrogen Production at NanoStructured Interfaces**
Ahmed F Halima, RMIT University, Hydrogen Group Australia

11:15-11:40 **Engineering the Radical and Catalytic Properties of Graphene Oxide**
Jingliang Li, Deakin University, Australia

11:40-12:05 **An Approach to Sustainability: Agro-Waste as Catalyst for Value-Added Compounds**
Pranjal Kalita, Central Institute of Technology, India

12:05-12:35 **Panel Discussion**

The Energy Shift: Stimulating Collaborations

Ahmed F Halima, RMIT University, Hydrogen Group Australia
Trrinu Varblane, RMIT University, Technology Center MERINOVA, Finland
Nasir Mahmood, RMIT University, Australia

12:35-13:20 **Networking Lunch**

@ Chill Restaurant

Scientific Session-1

@ Bell City Ball Room I&II

Catalysis and Energy | Catalysis for Renewable Sources | Environmental Catalysis

Chairs: **Myong Yong Choi**, Gyeongsang National University, South Korea
Charles Sorrell, UNSW Sydney, Australia

13:20-13:45 **Adsorption and Decomposition of Lignin Fragments on a Platinum Catalyst**
Javier Giorgi, University of Ottawa, Canada

13:45-14:10	Esterification of Acetic Acid with Methanol using Sulfated Carbonaceous Catalyst: Parametric and Kinetic Study Sarvjeet Kaur, Government Polytechnic College G.T.B, India	
14:10-14:35	Manipulation of Internal Chemistry of Transition Metals Compounds for Enhanced Catalytic Processes Nasir Mahmood, RMIT University, Australia	
14:35-15:00	Bifunctional CoMn Oxide Catalysts for Catalytic Transfer Hydrogenation of Levulinic Acid to γ-Valerolactone Jinyao Wang, State Key Laboratory of Heavy Oil Processing, China	
15:00-15:25	Sulfated Tin(IV) Oxide Catalyst for the Partial Coupling Reaction of α-Pinene to Produce Less Viscous High-density Fuel Seong-Min Cho, Seoul National University, South Korea	
15:25-15:45	Networking Break	@ Ball Room Lobby
15:45-16:10	Long-term Evaluation of Pre-reforming Catalysts for Pressurized Liquid-fuel Reforming Joongmyeon Bae, KAIST, South Korea	
16:10-16:35	Production of phenolic compounds from bagasse lignin via catalytic pyrolysis of $\text{CaZr}_x\text{Fe}_{1-x}\text{O}_3$ Yanguang Chen, Northeast Petroleum University, China	
16:35-17:00	Green Polymers from Waste Glycerol: A Sustainable Catalytic Process Priya Samudrala, Monash University, Australia	
17:00-18:00	Drinks & Networking	@ Chill Bar

DAY
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Tuesday | December 03, 2019

Keynote Presentation

@ Bell City Ball Room I&II

09:00-09:45 **Dimethylether: A Plausible Clean Fuel for the Future? Yes, if Keggin Heteropolyacid Catalysts are Properly Used to Convert Methanol: Mistakes to Avoid and Recipes to Follow!**
Eric Gaigneau, Universite Catholique de Louvain, Belgium

Special Talk

@ Bell City Ball Room I&II

09:45-10:20 **First-Principles Study of Catalytic CO₂/Water Decomposition on Layered Materials**
Hong Seok Kang, Jeonju University, South Korea

Scientific Session-2
Materials | Chemical Kinetics

@ Bell City Ball Room I&II

Chairs: **Hong Seok Kang, Jeonju University, South Korea**
Chen Binghui, Xiamen University, China

10:20-10:45 **Development, Characterization and *In vitro* Assessment of pH Sensitive Gelatin-Sodium Dodecyl Sulfate/ Sodium Alginate Blend Hydrogel Film for Controlled Drug Release**
Lisa Sreejith, National Institute of Technology Calicut, India

10:45-11:05 **Networking Break**

@ Ball Room Lobby

11:05-11:30 **Theoretical Study of Electronic Structure and Catalytic Activity**
Takayoshi Ishimoto, Yokohama City University, Japan

11:30-11:55 **Synthesis of Mesoporous Hybrid 2D-3D CeO₂-x and Heterojunction Nanostructures as Advanced Catalysts**
Charles Sorrell, UNSW Sydney, Australia

11:55-12:20 **Modeling of the Influence of the Mechanical Aspects (static, dynamic) on the Production of Electric Power of a Fuel Cell (PEMFC)**
Raed Kouta, Charles Delaunay Institute (ICD), France

12:20-12:45 **Catalytic Biohybrid Polymer Materials for Biomedical Applications**
Lewis Blackman, CSIRO Australia

12:45-13:45 **Networking Lunch**

@ Chill Restaurant

13:45-14:10 **Mn/Fe Mixed Oxide Catalysts with Enhanced Water Resistance Property for Low Temperature Selective Catalytic Reduction of NO_x**
Zongli Xie, CSIRO Australia

14:10-14:35 **Upgrading Ultra-heavy Oil with Iron-based Oxide Catalysts under Sub-/supercritical Water Conditions**
Takao Masuda, Hokkaido University, Japan

14:35-15:00 **The Formation of Dead Zones in Nonisothermal Porous Catalyst**
Piotr Skrzypacz, Nazarabayev University, Kazakhstan

- 15:00-15:25** **Improved Synthesis of Mesoporous SBA-15-CTA Using Citric Acid Under Mild Condition and its Application in Catalysis**
Liu Yan, Institute of Chemical and Engineering Science, Singapore
- 15:25-15:50** **Design Catalysts for Catalytic Wet Air Oxidation of Ammonia**
Chen Binghui, Xiamen University, China
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- 15:50-16:10** **Networking Break** **@ Ball Room Lobby**
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- 16:10-16:35** **Less Aggregated ZSM-22 Prepared by a Seed Silanization Strategy for N-dodecane Hydroisomerization**
Xiangyu Wang, Tianjin University, China
- 16:35-17:00** **Well-Defined Zinc Imine POSS as a Highly Active Catalyst for the Synthesis of Cyclic Carbonates from Epoxides and CO₂**
Sławomir Szafert, University of Wrocław, Poland
- 17:00-17:30** **Poster Presentations** **@ Ball Room Lobby**
- CSP-01** **Nanoporous Metal Oxide Catalysts by Hard-Template Method with Concurrent Improvement of Activity and Stability for Water Oxidation Reaction**
Chanho Pak, Gwangju Institute of Science and Technology, South Korea
- CSP-02** **Recovery of Phenols from Degraded Lignin Dissolved in Inert Solvent over Mixed Catalyst of TiO₂-FeOX and MFI-Type Zeolite**
Takuya Yoshikawa, Hokkaido University, Japan
- CSP-03** **Visible Light Active NiFe₂O₄/CoFe₂O₄ Nanocomposites for Photocatalytic Applications**
H.S. Bhojya Naik, Kuvempu University, India
- CSP-04** **Regioselective Synthesis of Ru(II)-Chiral Oxazoline Complexes Containing RuC(sp²) Bond and their Application for Catalytic Asymmetric Cyclopropanations**
Hayato Inoue, Toyohashi University of Technology, Japan
- CSP-05** **Preparation and Characterization of Electrospun Nanofibrous Membranes for Adsorption of Heavy Metals**
Nag Jung Choi, Chonbuk National University, South Korea
- CSP-06** **Effect of Different Solvents on the Properties of Copper Nanoparticles Produced via Pulsed Laser Ablation and its Enhanced Catalytic Activity**
Talshyn Begildayeva, Gyeongsang National University, South Korea
- CSP-07** **Novel Plasmonic ZnO/Au/g-C₃N₄ Nanocomposites for Solar Light Active Photocatalysts**
Yiseul Yu, Gyeongsang National University, South Korea
- CSP-08** **Metals Recovery Method from Waste Solution Containing Metal Ions Using a Pulsed Laser**
Seung Jun Lee, Gyeongsang National University, South Korea
- CSP-09** **Catalytic Au and Acid-Resistant Graphitic Carbon-Encapsulated Au (Au@GC) Nanoparticles Prepared by Pulsed Laser Ablation in Various Solvents**
Myong Yong Choi, Gyeongsang National University, South Korea
- CSP-10** **Development of Multicomponent Quantum Chemistry Methods for Accurate Prediction and Elucidation of Hydrogen-Functional Mechanism**
Masanori Tachikawa, Yokohama City University, Japan
- CSP-11** **Study on Spray Characteristics According to Nozzle Tip Diameter at Water Injection**
Min Soo Kim, Chonbuk National University, South Korea
- CSP-12** **Nanoporous Black Silicon for Hydrogen Photogeneration in Solar Water Splitting**
Ahmed F Halima, RMIT University, Hydrogen Group Australia

DAY
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Wednesday | December 04, 2019

Keynote Presentation

@ New York

09:00-09:45 **3D Printed Catalytic Reactors for Continuous Flow Hydrogenation**
Christian Hornung, CSIRO Manufacturing, Australia

Scientific Session-3

Electrocatalysis | Photocatalysis

@ New York

Chair: **Christian Hornung, CSIRO Manufacturing, Australia**

09:45-10:10 **3D Printing and Electrocatalysis**
Chong-Yong Lee, University of Wollongong, Australia

10:10-10:35 **Enhancing the Oxidation Efficiency of Hg0 by using CuO/TiO₂ Photocatalysts**
Chung-Shin Yuan, National Sun Yat-sen University, Taiwan

10:35-11:00 **Developing TiO₂-based Nanocomposites for Selective Photocatalysis and Visible-Light-Induced Activity**
Esfandiar Pakdel, Deakin University, Australia

11:00-11:15 **Networking Break** @ New York Lobby

11:15-11:40 **Instability-Directed Architectural Design of Multiscale Nanostructures**
Sajjad Mofarah, UNSW Australia, Australia

11:40-12:05 **Structural and Morphological Effects on the Activity and Durability of the Electrocatalysts**
Pei Kang Shen, Guangxi University, China

12:05-12:30 **2D Material-based Nanostructures for Electrocatalysis Applications**
Wenping Sun, University of Wollongong, Australia

12:30- **Lunch followed by Melbourne City Tour**

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