



Melbourne
Energy
Institute

MEI Symposium 21

The MEI Symposium 21 is a full day conference seminar showcasing the University of Melbourne's multi-disciplinary energy research across the Melbourne Energy Institute's four technical programs.

The MEI Symposium 21 event will provide a space for collaboration between the sector and the University, as well as an opportunity to celebrate the past year's accomplishments. The Symposium features international and local keynote speakers, talented graduate students, and research staff presenting their research on important energy topics within MEI's four program areas, including Energy Systems, Power Generation and Transport, Hydrogen and Clean Fuels, and Energy Materials.

Date:	Friday 3 rd December 2021	Time:	8:30am – 4:45pm
Where:	Hybrid seminar (Face to face and online)	Contact:	mei-info@unimelb.edu.au
Venue:	Melbourne Connect, The Forum, 1 st Floor, 700 Swanston Street, Melbourne		
Registration:	In person: Attend in person Online: Use links in respective program sessions		

PROGRAM

Time	Location: Forum 1 Melbourne Connect, 1 st floor, 700 Swanston Street, Melbourne Zoom registration: http://go.unimelb.edu.au/js7i ONLINE = presenters located interstate / overseas
8:30am – 8:35am	Plenary Welcome and opening of the MEI Symposium Prof. Mark Hargreaves, Pro Vice-Chancellor (Research Partnerships and Infrastructure)
8:35am – 8:40am	Introduction of the Plenary Speaker Prof. Michael Brear, Director, Melbourne Energy Institute
8.40am – 9.35am	Opening Plenary Ms Anna Collyer, Chair, Australian Energy Market Commission

Time	Stream 1 (am) Energy Systems Research Program Chair: Prof. Pierluigi Mancarella (Program Leader)	Stream 2 (am) Energy Materials Research Program Chair: Dr. Wallace Wong (Program Leader)
	Room: Forum 1 Zoom registration: http://go.unimelb.edu.au/is7i	Room: Forum 3 Zoom registration: http://go.unimelb.edu.au/mo7i
9:40am – 10:30am	Keynote: Mr Ross Baldick ONLINE <i>Professor Emeritus, Department of Electrical and Computer Engineering, The University of Texas</i> Texas power grid under extreme weather in February 2021	Keynote: Professor Kylie Catchpole <i>Professor in the School of Engineering, Australian National University</i> High efficiency perovskite/silicon tandems for electricity and hydrogen
10:30am – 10:50am	BREAK	
10:50am – 11:20am	Extracting the physics of electrical networks using smart meter data: towards model-free voltage calculations Mr Vincenzo Bassi ONLINE	Extending the lifetime of high temperature batteries for use in venus landers Dr Dean Glass
11:20am – 11:50am	Electric vehicle charging preferences of Australian consumers Dr Patricia Lavieri	Photochemical upconversion below silicon bandgap in oxygen mediated environment Dr Elham Gholizadeh
11:50pm – 12:20pm	Integrated electricity-gas-hydrogen systems modelling with gas composition tracking Mr Isam Saedi	Waste not, want not: how singlet fission can deliver cheaper power by minimizing solar panel losses Dr Calvin Lee
12:20pm – 12:50pm	The role of energy storage on enhancing RES-dominated system reliability and resilience Mr Guanchi Liu	Titanium oxide based carrier selective contacts for the next generation of crystalline silicon solar cells Mr Jesús Ibarra
12:50pm – 1:30pm	LUNCH BREAK	
	Stream 1 (pm) Power Generation and Transport Research Program Chair: Prof. Richard Sandberg Program Leader	Stream 2 (pm) Hydrogen and Clean Fuels Research Program Chair: A/Prof. Kathryn Mumford Program Leader
	Room: Forum 1 Zoom registration: http://go.unimelb.edu.au/es7i	Room: Forum 3 Zoom registration: http://go.unimelb.edu.au/sy7i
1:30pm – 2:20pm	Keynote: Dr Claire Vincent <i>The University of Melbourne</i> Wind power: Five minutes into the future and beyond	Keynote: Professor Doug Macfarlane <i>Sir John Monash Distinguished Professor, School of Chemistry, Monash University;</i> Electrochemical reduction of nitrogen
2:20pm – 2:50pm	Aviation impact accelerator: accelerating the path towards net-zero aviation Dr Massimiliano Nardini	Understanding hydrogen autoignition and knocking in spark-ignition ic engines Dr. Farzad Poursadegh
2:50pm – 3:20pm	The electricity system benefits of improved wind generation forecasts Dr Dominic Davis	Techno-economic analysis of membrane contactor systems for carbon capture Dr Ehsan Miandoab
3:20pm – 3.40pm	BREAK	
3:40pm – 4:10pm	Computational metallurgy for materials at extremes Dr Christian Brandl	Underground hydrogen storage: advantages, challenges and opportunities Dr Samantha Perera ONLINE
4:10pm – 4:40pm	Recent trends in carbon geo-sequestration simulation studies in the machine learning era Dr Achyut Mishra	Hydrogen utilization through gallium based liquid metal alloys Dr Ali Zavabeti
4:45pm	CLOSE	