

# 2020 Asia-Pacific Solar Research Conference

30th November to 2nd December

*Attend physically or virtually*

MELBOURNE LOCATION for physical attendance

SYDNEY LOCATION for physical attendance

30th NOV		DAY 1
	9.15 - 10.00	Arrival Tea/Coffee
MONDAY	10.00 - 12.15	<b>Plenaries MORNING SESSION</b>
	10.00 - 10.30	Sarah Barker, Head of Climate Risk Governance, MinterEllison <b>"Climate change through a finance and liability lens: how developments in the EU may shape Australian markets"</b>
		Question Time - 10mins
	10.45 - 11.15	Professor Andrew Blakers FTSE, Research School of Electrical, Energy and Materials Engineering. College of Engineering and Computer Science, Australian National University <b>"Australia, the global renewable energy pathfinder"</b>
		Question Time - 10mins
	11.30 - 12.00	Dr. Dietmar Tourbier, Director, Australian Solar Thermal Research Institute (ASTRI) at CSIRO <b>"Advancements in Concentrated Solar Thermal"</b>
		Question Time - 10mins
	12.15 - 1.15	Lunch
	1.30 - 3.45	<b>Plenaries AFTERNOON SESSION</b>
	1.30 - 2.00	Professor Paul Cooper, Senior Professor, Sustainable Buildings Research Centre (SBRC), University of Wollongong <b>"Enhanced Solar Energy Exploitation in Buildings with Advanced HVAC and Storage systems"</b>
		Question Time - 10mins
	2.15 - 2.45	Dr Xiaojing (Jeana) Hao, Associate Professor, Photovoltaics & Renew. Energy Engineering, UNSW <b>"Recent development in high bandgap chalcogenide thin film PV materials and devices"</b>
		Question Time - 10mins
	3.00 - 3.30	Dr. Philipp Furler, Chief Technical Officer, Synhelion SA, Lugano, Switzerland <b>"Solar thermal pathways for sustainable fuels"</b>
	Question Time - 10mins	
4.00 - 5.30	<b>Networking Session on Location Only</b>	

1st DECEMBER					
TUESDAY	ONLINE MORNING SESSION				
	10.00 – 11.30	<b>Characterisation of PV Devices</b> Chairs: Dr Yan Zhu (UNSW) & Wenjie Yang (ANU)	<b>BIPV &amp; Solar Thermal Systems</b>	<b>CST Receivers</b>	<b>D&amp;I - Distribution networks and EVs</b>
	10.00 - 10.15	Germain Rey "Outdoor PL Imaging of Photovoltaic Modules at Constant Operating Point"	Chaoxiang Zhang "A Comparison and Classification of BIPV Application for BIPV Products Selection"	Daniel Potter "Optimisation of Multi-aperture Falling Particle Cavity Receivers and HelioStat Fields"	Andrew Mears "Managing distributed energy resources on low-voltage networks"
	10.15 - 10.30	Yoann Buratti "Deep Learning on Electroluminescence Images for End-of-Line Binning of Full and Half-Cut Cells"	Maria Panagiotidou "The solar energy potential of window-mounted semi-transparent PV in the urban environment"	Sahan Kuruneru "A preliminary analysis of ceramic particles' velocity in gravity-driven solar particle receivers"	Naomi Stringer "Decentralisation Framework: An approach to mapping power system transition"
	10.30 - 10.45	Shuai Nie "Temperature-dependent Characterization of Si-SiO <sub>2</sub> Interface Passivation for Corona Charged Oxides"	Wei Yang "Community Survey on installation of BIPV System to residential Buildings in a Chinese City"	Mohammadreza Sedighi "High-Temperature Receiver with a Packed Bed of Transparent Spheres Using CFD Analysis"	Niraj N. Lal "Essential Power System Services with Very High Levels of Renewable Energy, with Principles for DER Interaction"
	10.45 - 11.00	Zubair Abdullah-Vetter "Localisation of Solar Cell Defects in Luminescence Images using Deep Learning"	Damiloju Adeyina "A Parametric Study of Passive House Design in a Sub-tropical Climate"	Charles-Alexis Asselineau "Design of a heliostat field and liquid sodium cylindrical receiver for the Gen3 Liquids Pathway"	Anna Nadolny "Rapid reductions in passenger transport embodied and operational emissions"
	11.00 - 11.15	Henner Kampwerth "Photoreflectance (PR) Photothermal Deflection Spectrometry (PDS) for new Material Research"	Delight M. Sedzro "Thermal performance of unglazed roof-mounted solar thermal collectors"	Jin-Soo Kim "Construction and Test of a Novel Particle Receiver System"	Katelyn Purnell "Electrified Public Transit: A Global Estimation Tool on the Impact at the Small and Large Electricity Grid Scales"
	11.15 - 11.30			Shuang Wang "Performance co-optimisation of a heliostat field and a cylindrical receiver"	Ned Ekins-Daukes "The Potential For Vehicle Integrated Photovoltaics in Australia"
	AFTER LUNCH ONLINE SESSION				
	1.00 – 2.30	<b>Passivating Contacts and Defects</b> Chairs: Dr Josua Stuckelberger (ANU) & Dr Li Wang (UNSW)	<b>BSHC and Data Analysis</b>	<b>CST - Materials and Heat Exchangers</b>	<b>D&amp;I - Solar farms and practical solutions</b>
1.00 - 1.15	Moonyong Kim "A new universal metric called the relative defect concentration, $\beta$ in c-Si solar cells"	Nihal Abdul Hameed "Verification of ClimateCypher Climate Data Outputs with System Advisor Model (SAM)"	Raihan Rumman "Cracking Failure in a 253 MA – Weld Haynes 230 Concentrated Solar Power Receiver"	Richard Corkish "UNSWERV – Engineering Students Helping Out while Learning through Practice"	
1.15 - 1.30	Saman Jafari "Boron-oxygen-related traps in Czochralski grown silicon"	Trevor Lee "Effect of Energy Efficiency Rating (EER) of Dwellings on Sale Prices in the ACT 1999-2020"	Stuart Bell "Material Degradation Testing and Analysis for Next Generation CSP Applications"	John Boland "Forecasting solar radiation and farm power using combined seasonality and autoregressive model"	
1.30 - 1.45	Bruno Vicari Stefani "P-type Czochralski Silicon Heterojunction Solar Cells with High and Stable Open-circuit Voltage"	Trevor Lee "Updating Australia's Reference Meteorological Years (RMYS) with the addition of Hourly Precipitation Data"	Hugh Russell "Stress analysis of sCO <sub>2</sub> Turbine Pressure Casing"	Alexander Nassar "Improving Productivity of Cropland through Agrivoltaics"	
1.45 - 2.00	Winney Yang "Amorphous silicon based electronically-coupled upconverters for crystalline silicon solar cells"	Hongying Zhao "Investigation on the Economic Performance of Distributed Building Photovoltaic Systems in the Urban Environment in China"	Yanting Yin "Mechanism of Degradation and Interfaces Formation of Stainless Steel Subjected to High Temperature Cycling with Phase Change Salts"	Damien Vermeer "DC/AC inverter oversizing ratio – what is the optimal ratio for Australian solar farms?"	
2.00 - 2.15	Anh Huy Tuan Le "Temperature-dependent performance of polysilicon passivating contacts and their solar cells"		Rhys Jacob "Prototype Design of a High Temperature Phase Change Material Storage System"	James Horsley "Numerical Simulation of Wind Loading on Ground-Mounted East-West Solar Farms"	
2.15 - 2.30	Thien N. Truong "Doped Poly-Si/SiO <sub>x</sub> Passivating Contacts: Hydrogenation and Its Mechanisms"		Abdulrahman S. Alotabi "Stabilising the Au9 Clusters at the TiO <sub>2</sub> Film using Chromium Oxide Layer Depends on the Stability of TiO <sub>2</sub> Film"	Oliver Kunz "Alpha-Prototype Outdoor Photoluminescence Imaging Tool for Solar Module Field Testing"	
AFTERNOON SESSION					
3.30 – 5.00	<b>PV - Module Testing and Performance</b> Chairs: Dr Oliver Kunz (UNSW) & Dr Hang (Kelvin) Sio (ANU)	<b>WORKSHOP 1</b>	<b>CST - Optics, storage and system analysis</b>		
3.30 - 3.45	Simon (Meng Fei) Zhang "A "Post-Mortem" Investigation of Cell-Level Degradation in Field SHJ Modules"	<b>Energy Resilience in Pacific Island Countries:</b>  Planning and investing in more resilient energy systems  Information and registration: <a href="#">here</a>	Shuang Wang "An Efficient Method for Aiming Heliostats Using Ray-tracing"		
3.45 - 4.00	Chris Fell "Module testing round robin results: Does CSIRO's PV lab really perform?"		David Saldivia "Optical Assessment using Ray Tracing for a Beam-Down Receiver with Solid Thermal Storage"		
4.00 - 4.15	Renate Egan "Lifetime in the Field: Technology Transfer, Manufacturing and Field Performance of CSG Solar Modules"		Yen Chean Soo Too "Heat Transfer in Staged Moving Bed Particle Heat Exchangers"		
4.15 - 4.30	Renate Egan "Australian PV Market Trends"		Sohella Riahi "Prototype Design of a Printed Circuit Heat Exchanger for Na-SiO <sub>2</sub> "		
4.30 - 4.45	Marina Lunardi "Sustainable End of Life Management of PV Solar Photovoltaic Waste: The Impact of Transportation"		Navid Mohammadzadeh "Quantifying the Impact of Weather Uncertainty on Optimal Dispatch Planning"		
4.45 - 5.00			Muhammad M. Rafique "Assessing the Role of Refractory Lining to Overcome the Solar Intermittency Challenge in Particle Receivers"		

2nd DECEMBER						
ONLINE PROGRAM						
WEDNESDAY	10.15 - 10.45	<b>ACAP Plenary Speaker</b> Prof. Paul Burn, ARC Australian Laureate Fellow, School of Chemistry and Molecular Biosciences, UQ "2D or not 2D - that is the perovskite question"				
	11.00 - 12.30	<b>ONLINE COMBINED POSTER SESSION</b> Includes ACAP and Conference Posters				
	1.30 - 3.00	<b>ONLINE AFTER LUNCH SESSION</b>				
			<b>PV - Perovskite and Tandem Solar Cells</b> Chairs: Dr Arman Mahboubi Soufiani (UNSW) & Dr Yajie (Jessica) Jiang (UNSW)	<b>BSHC - Hot water and water processing</b>	<b>CST Solar mineral and chemical processing</b>	<b>ACAP # 1</b> Chairs: Fiacre Rougieux & David Jones
		1.30 - 1.45	Lei (Adrian) Shi "Gas chromatography-mass spectrometry analyses of encapsulated stable perovskite solar cells"	Benhadji Djamel "Numerical and Experimental validation of natural convection inside single slope solar still"	Suneeti Purohit "Solar Agglomeration of Iron Ores"	ANU: Cheng Cheng "Renewable energy in Japan"
		1.45 - 2.00	Robert Lee-Chin & Arman Mahboubi Soufiani "Insights Into Surface Recombination of Polycrystalline Perovskite Films via Injection-Dependent Lifetime Analysis"	Saeed Tehrani "The Potential for PV Self-Consumption for Hot Water Systems in Australia"	Matthew Shaw "Applications for Solar Thermal Processing on the Moon and Related Challenges"	UoM: Dr Saghar Masoomi-Godarzi "Photoenergy conversion with singlet fission materials"
		2.00 - 2.15	Monika Michalska "The Impact of Ligand Engineering on Low Temperature NiO Hole Transporting Materials for Perovskite Solar Cells"	Lavern Nyamutswo "Solar Energy in Industrial Water and Wastewater Management "Survey of technologies for formulating guidelines for decision-making support to end-users"	A Setiawan "Solar Carbothermic Reduction of Complex Weathered Ilmenite using Biomass"	UNSW: Dr Alison Lennon "Module Metallisation and Interconnection"
		2.15 - 2.30	Milos Dubajic "The role of the organic cation in acoustic phonons and hot carrier properties of lead bromide perovskites"	Si Thu Paing "Baffles and their effect on thermal performance of a solar hot water storage tank during static operation"	Reza Mukhlis "Technoeconomic of Solar Recycling of Alkaline Batteries for Zn/ZnO Recoveries"	UQ: Dr Wei Jiang "Development of materials for organic homojunction photovoltaics"
		2.30 - 2.45	Nathan Chang "Techno-economic analysis of Silicon Perovskite Tandem cells"	Question Time	System-Level Modelling of Solar-Thermal Beneficiation of Iron Ore	UoM: Dr. James Bullock "Selective-contacts for high efficiency silicon solar cells"
	2.45 - 3.00	Jueming Bing "Understanding how chlorine additive in a dynamic sequential process affects FA0.3MA0.7PbI3 perovskite film growth for solar cell application"		Matt Stocks "Emissions Reductions from Co-burning Ammonia with Coal in Japan: The Need For Green Ammonia"	UQ: Dr Hui Jin "Efficient flexible organic solar cells with a transparent graphene anode"	
3.30 - 5.00	<b>ONLINE AFTERNOON SESSION</b>					
	<b>PV - CZTS, III-V and Friends</b> Chairs: Dr Hieu Nguyen (ANU) & Daniel Chen (UNSW)	<b>WORKSHOP2</b>	<b>D&amp;I - Markets and the Region</b>	<b>ACAP # 2</b> Chairs: Mei Gao & Udo Bach		
3.30 - 3.45	Stephen Bremner "Integrating III-V materials for high performance and novel PV Applications"	<b>Energy Resilience in Pacific Island Countries:</b>  Energy resilience and the political economy of off-grid solar  <b>Information and registration: <a href="#">here</a></b>	Bin Lu "A Zero-Carbon Asia-Pacific Super Grid"	Monash: Dr. Adam Surmiak "2D to 3D Perovskite Gradient Deposition System for Rapid Combinatorial Solar Materials Screening"		
3.45 - 4.00	Jessica Yajie Jiang "Thermal Performance of Singlet Fission and Tandem Solar Cells"		Jack Munro "Modelling Generator Bidding Behaviour in the National Electricity Market"	ANU: Dr. Hieu Nguyen "Recent progress in the characterization of various materials (silicon, perovskite, tandem, and 2D materials)"		
4.00 - 4.15	Fiacre Rougieux "Accurate Solar Cell Efficiency From First Principle"		Sarah Jeffries "Financial Modelling and Analysis of Virtual Power Plants for Market Planning"	UNSW: Jae Sun Yun "Nanoscale Functional Imaging of Emerging Solar Cells via Scanning Probe Microscopy"		
4.15 - 4.30	Ned Ekins-Daukes "Next Generation III-V Multi-Junction Solar Cells For Aerospace Applications"		Thomas Jeffrey "Pathways for Essential Action in the NSW Energy Sector"	Monash: Dr. Wenxin Mao "Light-Induced Reversal of Ion-Segregation in Mixed-Halide Perovskites"		
4.30 - 4.45	Jianjun Li "Defect control for 12.5% efficiency Cu2ZnSnSe4 kesterite thin-film solar cells by engineering of local chemical environment"		Hou sheng Zhou "Aggregated impact of coordinated commercial-scale BESS and financial outcome"	CSIRO: Dr. Dechan Angmo "Materials and process development towards roll-to-roll fabrication of perovskite solar cells: a progress report"		
4.45 - 5.00	Binesh Puthen Veetil "Development of Microwave Processing Techniques for Solar Cells"			CSIRO: Dr. Hasitha Weerasinghe & Régine Chantler "A Case Study of the Degradation of Flexible Photovoltaic Modules"		
5.00 - 5.30	<b>Awards Presentations/Closing Ceremony</b>					