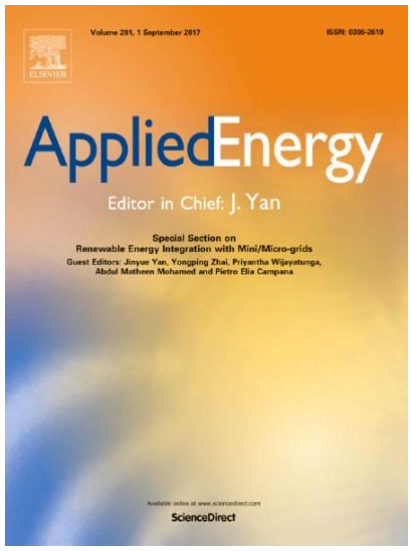
CCUS

Carbon Capture Utilization & Storage

Perth

June 27-29 2018



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Welcome to CCUS2018

Welcome to CCUS2018-Applied Energy Symposium and Forum 2018: Carbon capture, utilization and storage.

Carbon capture, utilization and storage (CCUS) is vital for reducing emissions across the energy system in both the Energy Technology Perspectives (ETP) 2°C Scenario (2DS) and the Beyond 2°C Scenario (B2DS). The CCUS2018, with theme of "Advancing CCUS through global cooperation", is to provide a platform focused on carbon capture, utilization and storage, covering the topics of post-combustion carbon capture, pre-combustion carbon capture, oxyfuel combustion carbon capture; CO_2 transport; CO_2 utilization including EOR; CO_2 geological storage; full-chain CCUS demonstration project design; CO_2 monitoring; geomechanics; and negative emissions. The organizers are particularly interested in demonstrations of advancing CCUS deployment and research through global cooperation.

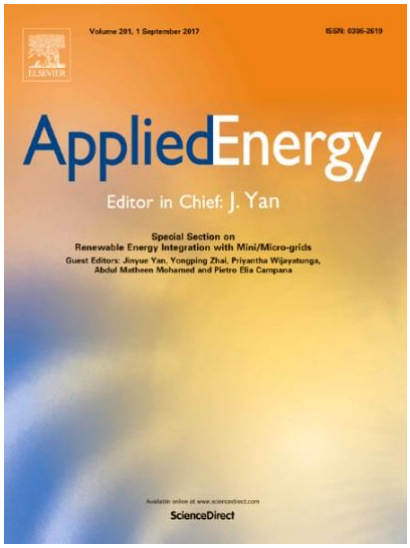
The event consists of two-day symposium for sharing the most recent progress of research in carbon capture, utilization and storage, as well as a one-day field trip.

The CCUS2018 is organized by The International Journal of Applied Energy, Geoscience Australia, Applied Energy Innovation Institute (AEii), and The Administrative Centre of China's Agenda 21 (ACCA21), and co-organized by Future Energy Profile/Mälardalen University Sweden.

We are looking forward to meeting you in Perth, Australia.

Prof. J. Yan (Co-Chair)
Editor-in-chief of Applied Energy

Prof. X.C. Li (Co-Chair)
Institute of Rock and Soil Mechanics, Chinese Academy of Sciences



Applied Energy

Applied Energy provides a forum for information on innovation, research, development and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, analysis and optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems. The breadth of coverage ranges from innovative technologies and systems of both fossil and renewable energy to the economic industrial and domestic use of energy with no or minor impact on the environment. Applied Energy is also concerned with the attendant problems of modeling and forecasting, conservation strategies, and the environmental, social and economic impacts of energy policies and usage, including climate change mitigation and other environmental pollution reduction.

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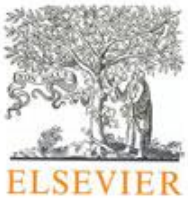
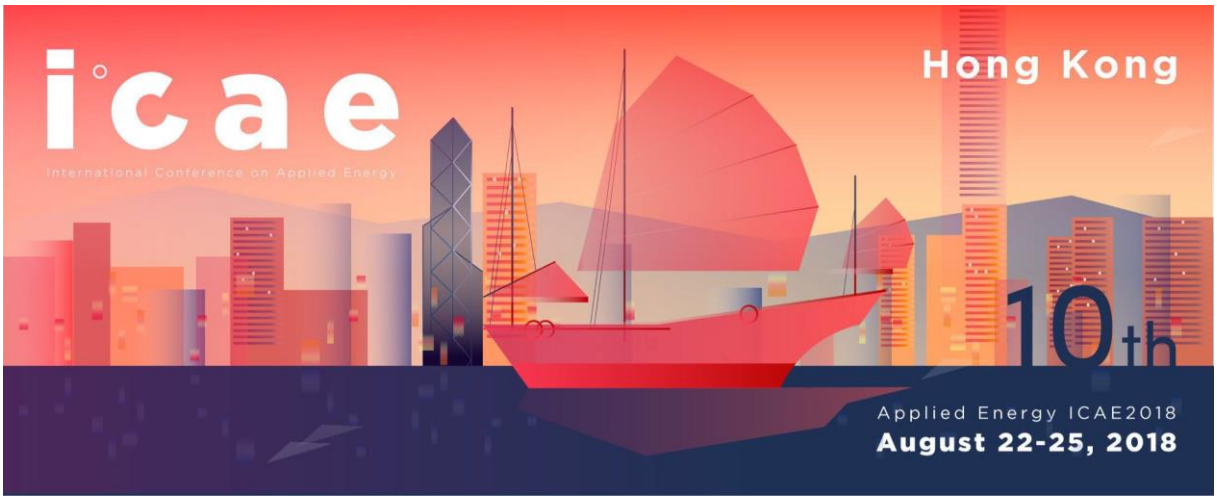


National
Geosequestration Laboratory

Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**



Call For Papers

The 10th International Conference on Applied Energy (ICAE2018) will be held during August 22-25, 2018, in Hong Kong, China, with theme as "Innovative Solutions for Energy Transitions". ICAE2018 will include keynotes and invited speeches, plenary sessions, oral presentations, and poster sessions on different topics:

- Clean Energy Conversion Technologies
- Energy Management, Policy, Economics and Sustainability
- Energy Sciences
- Energy Storage
- Intelligent Energy Systems
- Mitigation Technologies
- Renewable Energy

Participants of the ICAE2018 are kindly invited to submit a paper. All papers will be reviewed and the accepted will be presented at the Conference orally or by poster. Selected papers from the ICAE2018 will be recommended by the scientific committee for the further consideration of publication in prestigious journals including Applied Energy, and other renowned international journals.

Key dates:

- Deadline for draft paper: May 15, 2018
- Review: May 15 – May 31, 2018
- Notification of acceptance: May 31, 2018
- Deadline for final paper: July 15, 2018
- Conference: Aug. 22-25, 2018

For more information, please visit www.applied-energy.org, or contact: icae2018@applied-energy.org.

We are looking forward to meeting you in Hong Kong.

Prof Hongxing Yang (Co-Chair)

The Hong Kong Polytechnic University

Prof. J. Yan (Co-Chair)

Editor-in-Chief of Applied Energy

Contents

icae
International Conference on Applied Energy

Rhodes, Greece

REM
RENEWABLE ENERGY INTEGRATION with MINI/MICROGRID

September 29-30, 2018

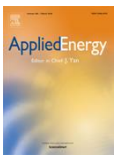
Call For Papers

Deadline for draft paper: Aug. 15, 2018
Notification of acceptance: Sept. 1, 2018
Deadline for final paper: Sept. 15, 2018

Topics

- Islands energy systems
- High penetration of renewable energy
- Mini/Microgrid architecture, design and planning
- Community energy systems and Microgrid
- Control and protection schemes
- Distributed renewable energy supplies
- Demand side response
- Energy storage
- Cyber-physical systems
- Reliability and resilience of distributed energy and microgrids
- DC Microgrids and off-grid Microgrids
- Modelling, simulation and analysis
- New operation strategies
- Novel renewable technologies for microgrid applications
- Policy and regulatory interventions
- Environmental and ecological impacts
- Economic analysis, new business models and markets
- Case studies and best practices

All accepted papers presented in REM2018 will be published in Energy Procedia. A special Issue of selected papers from REM2018 will be published in prestigious journals including Applied Energy (IF: 7.182)



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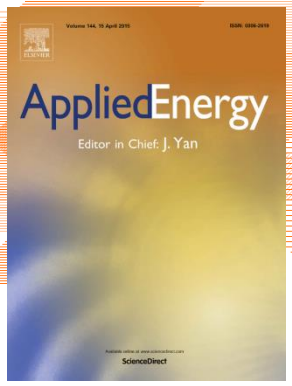

Applied Energy

New Section: Progress in Applied Energy

Cite Score: 7.78 i
Impact Factor: 7.182 ii

Editor-in-Chief
Professor J. Yan

The internationally-renowned journal *Applied Energy* is launching a new section - *Progress in Applied Energy*, which will bridge the gap between development and implementation, focusing:

- On fast-paced, cutting-edge research from forward looking aspects of energy innovations
- On renewable energy and clean technology
- From energy efficiency to climate change mitigation

As the world strives to meet the shared targets of combating climate change and providing sustainable energy access for all, there is a critical need for timely and rapid publication of new energy solutions.

Progress in Applied Energy is the best platform to address these issues, at a time when there is societal pressure to come up with breakthroughs.

What are we looking for?

- Papers must present ground-breaking insights to the field, which will have a positive impact on society, and excite and inspire readers
- Review articles will provide a comprehensive view of the latest trends, bridging scientific frontiers

Why submit to our new section?

Submit and be part of the change in shaping the future of energy research as this new section:

- Provides a home for top scientists and engineers to publish high quality papers
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i Published by Scopus 2016 /
ii 2016 Journal Citation Reports (Clarivate Analytics, 2017)

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Keynote Speakers

Prof. Peter Cook

Cook Centre for CCS Research, University of Melbourne and CO2CRC Ltd, Australia

"CCUS: A retrospective and prospective view"

Professor Peter Cook is one of Australia's foremost earth scientists in the areas of energy, resources, and greenhouse gas technologies, a Professorial Fellow at the University of Melbourne, and a Senior Adviser to industry and governments. Some of senior executive positions he has held during his career includes: Associate Director of the Bureau of Mineral Resources (now Geoscience Australia), Executive Director of the British Geological Survey, and Executive Director of the Australian Petroleum Cooperative Research Centre. In 2003 he founded CO2CRC (the Cooperative Research Centre for Greenhouse Gas Technologies) and served as its Chief Executive until 2011, establishing the world-leading CO2CRC Otway Project. Professor Cook has held various academic positions in the UK, Australia, France and the USA and is the author or co-author of many papers, publications and reports, including several major books and monographs. He is a Fellow of the Australian Academy of Technological Sciences and Engineering, a Life Member of the Geological Society of Australia and a member of the CarbonNet Advisory Board. He is the recipient of many awards and honours, including a CBE. In recognition of his ongoing contribution to carbon capture and storage research, the University of Melbourne established the Peter Cook Centre for CCS Research in 2012.

Alex Zapantis

Global CCS Institute, Australia

"Opportunities and Challenges for CCS"

Mr Alex Zapantis joined the Global Carbon Capture and Storage Institute (GCCSI) in 2016 where he is currently General Manager - Commercial. He has over 12 years' experience working on issues related to climate change and CCS. His expertise includes energy and climate change policy, carbon capture and storage, strategy development and risk analysis, industry and government engagement, public policy and regulation, industry and commercial analysis and public relations. Alex has a Bachelor Degree in Applied Science with a major in Physics, a Graduate Diploma in Health & Medical Physics and a Master Degree in Business Administration. He has worked for the Queensland Government, the Queensland University of Technology, the Australian Department of the Environment and Heritage and Energy Resources of Australia. Between 2006 and 2016, Alex held various positions in Rio Tinto Energy and Rio Tinto Coal Australia with a focus on energy and climate policy, energy efficiency, greenhouse gas management and product stewardship as applied to coal and uranium. He also served on the boards of the Energy Policy Institute of Australia, Australian Coal Association Low Emissions Technology Ltd, the World Coal Association, and the Coal Industry Advisory Board to the International Energy Agency.

Keynote Speakers

Paul Feron

CSIRO, Australia

"Progress and innovation in CO2 capture"

Dr Paul Feron is a science leader in CSIRO Energy in Australia. He has been leading CSIRO's post-combustion capture (PCC) research program since June 2007. Dr Feron is a member of the Australian mirror committee ISO TC265, which aims to develop standards for CO2 capture and storage. Previously Dr Feron worked for the Netherlands Organisation for Applied Scientific Research. He has contributed extensively to the development and conduct of large multi-party, multinational CCS R&D programs in Europe, Australia and China and was a lead author for the IPCC Special Report on CCS. He co-authored more than 100 publications, is co-inventor on 14 patent applications and most recently edited the first monograph on post-combustion CO2 capture (Absorption-Based Post-Combustion Capture of Carbon Dioxide – Woodhead Publishing). His current interests are in the realisation of concepts for added value and zero additional energy requirement CO2 capture.

FUTURE ENERGY

FUTURE ENERGY CENTER

THE CHALLENGES due to energy related emissions, increased energy demand and the fragile state of the global economy calls for rethinking global energy systems. Therefore, the research within the Future Energy Center focuses on renewable energy, energy efficiency and emission mitigation, as well as smarter modelling, optimization and management.

The Future Energy Center is one of Sweden's strongest research environments in process optimization targeting the process industry and the energy sector. We develop innovative solutions and tools within the areas of energy, building and environmental engineering.

The Future Energy Center has good relationships with both companies and recognized national and international centers, including several Chinese universities. The profile comprises nine professors, a further fifteen senior researchers and more than forty graduate students.

THREE FOCUS AREAS

The research at Future Energy Center is focused on three areas:

TRACK 1 Renewable energy

TRACK 2 Energy efficiency and emission mitigation

TRACK 3 Smarter modelling/ optimisation and management

The Future Energy Center also offers studies at post-graduate level in Energy and Environmental engineering. We are also part of the research school Reesbe (Resource-Efficient Energy Sytems in the Built Environment).

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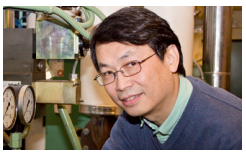

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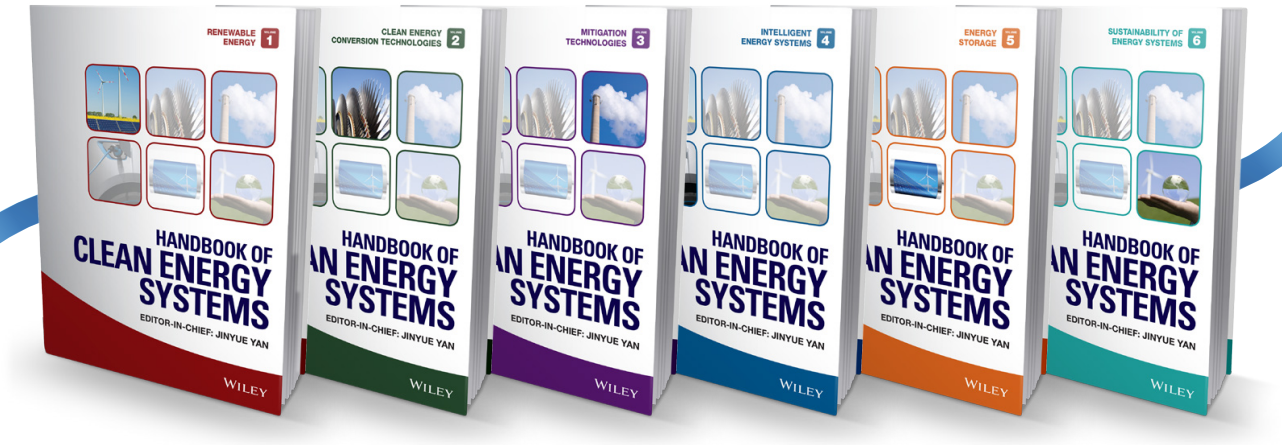
Are you working on the challenging issues associated with the development of our future energy systems?



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Site Visits

29 June 2018

8:30 Departure from Duxton Hotel

9:00 – 10:00 Perth Core Library - View core from the South West Hub Project

The South West Hub carbon capture and storage (CCS) project in Western Australian is Australia's first CCS Flagship project. The project is currently underway in Western Australia's south-west to examine the geological potential in the area for carbon capture and storage. The pre-competitive phase of the project is led by the Western Australian Department of Mines and Petroleum (WA DMP) in partnership with industry.

The project is unique by investigating the potential for CO_2 storage in geological formations without a conventional regional mudstone or shale seal. Trapping is instead achieved by injecting into a heterogeneous sandstone that is over 1500 m thick with varying permeability layers. Modelling suggests this should support large scale residual and solubility trapping. During the site visit, participants will be able to inspect 200 metres of Harvey core, including the primary containment Wonnerup and secondary containment Yalgorup members of the Lesueur Formation.

10:30 – 12:00 National Geosequestration Laboratory

The National Geosequestration Laboratory is a carbon storage research facility focused on delivering research and development solutions to enable commercial-scale storage of carbon dioxide. Awarded $48m of funding for infrastructure and equipment in 2012, the NGL has a gas processing laboratory node at The University of Western Australia, a test well at Curtin University and custom-designed rock characterisation facilities operated by CSIRO at the Australian Resources Research Centre (including core flooding, imaging and geomechanical rock testing). A full description of the impressive facilities can be found on http://ngl.org.au/our-facilities/. The site visit will include a tour of the facilities at the Australian Resources Research Centre.

(option to return to Duxton hotel)

13:00 – 13:45 Lunch

13:45 – 15:00 Caversham Wildlife Tour

Caversham Wildlife Park showcases many of Australia's unique native animals, including koalas, wallabies, possums, Tasmanian devils and wombats – providing visitors with the opportunity for a close-up encounter with some Australian icons. The field trip will include a 1 hour guided tour of the wildlife park.

15:30 – 16:30 Olive Farm Wines and The Cheese Barrel

Olive Farm Wines is a 4th generation family owned and run winery, located in the heart of the Swan Valley. The visit will include an opportunity to taste a wide variety of sparkling, white and red wines with a selection of delicious cheeses.

17:30 Arrival at Duxton Hotel

Practical Guide

Organized by
The International Journal of Applied Energy
Geoscience Australia
Applied Energy Innovation Institute (AEii)
The Administrative Centre for China's Agenda 21

Co-organized by
Future Energy Profile/Mälardalen University Sweden

Time Difference
GMT + 8

Venue
Duxton Hotel, Perth
Location: No. 1 St George's Terrace, Perth WA 6000, Australia
www.perth.duxtonhotels.com
The venue is located in the heart of Perth and is only a few minutes' walk away from Perth's major shopping, entertainment and restaurant centres.

HOW TO GET TO THE VENUE

Airport
Visitors will need to fly to Perth. Direct flights to Perth are available via Asian and Middle Eastern hubs and these will arrive at the International Terminal (Terminal 1). Alternatively, transfer to domestic flights via Sydney, Adelaide and Melbourne may offer more flexibility. These flights will arrive at Terminal 4 (Qantas) and Terminal 1 (Virgin). Airport maps are available here https://www.perthairport.com.au/to-and-from-the-airport/airport-maps

Ground transportation

Taxis
Taxis are available 24/7 to pick up arriving passengers and it is approximately a short, 20 minute ride to get to Perth's city centre. Follow the signs to the dedicated taxi rank. The taxi fare is approximately $40.

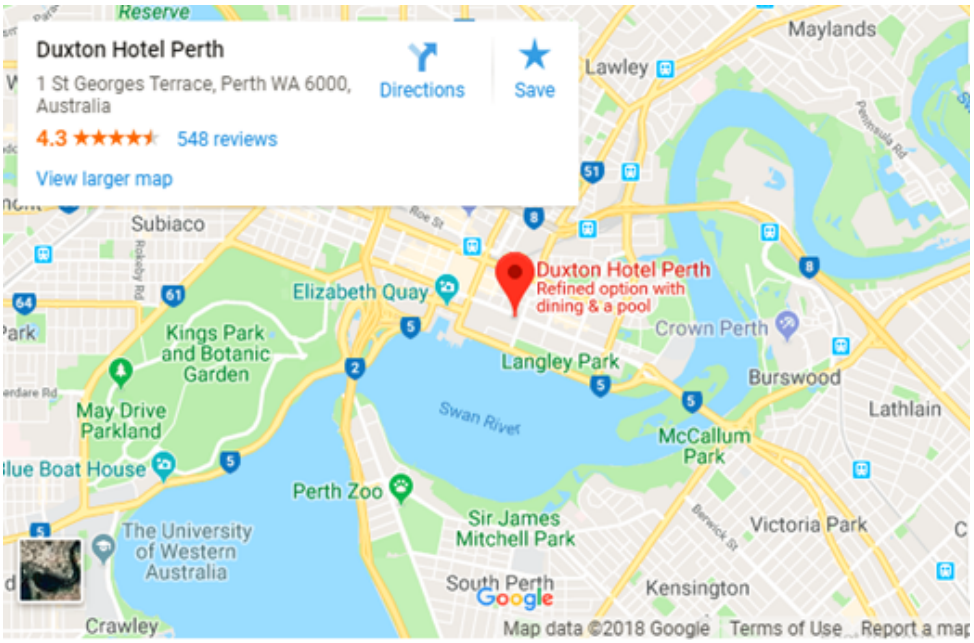
Bus
Number 380 (from Terminal 1) or number 40 (from Terminal 4) buses can be caught directly from Perth airport to the hotel. The journey takes approximately 30 minutes and the bus stop (St Georges Tce Stand N) is located 50 metres from the hotel. Buses run every 30-60 minutes during the week and weekends. The bus fare is $4.70. Timetables and maps can be downloaded from http://www.transperth.wa.gov.au/timetablepdfs/Bus%20Timetable%20110%2020170611.pdf

Car hire
Car hire collection points are available at all terminals. The airport is serviced by all major car hire companies and bookings can be made directly with the hire companies or via Perth Airport https://www.perthairport.com.au/to-and-from-the-airport/car-hire

Venues Information

Conference Venues

The conference will be held at Duxton Hotel, which is located in the heart of Perth and is only few minutes' walk away from Perth's major shopping, entertainment and restaurant centres.



Keynote and plenaries

Ballroom B

Conference dinner

Epicurean Restaurant, Crown Towers, Perth, WA 6000

Panels and presentations

Oral presentations	Room
1-A3, 1-A4, 2-A2, 2-A3	Ballroom 2
1-B3, 1-B4, 2-B2, 2-B3	Duxton 2
1-C4, 2-C2, 2-C3	Duxton 3

Speaker´s Guide

Presentation

Length of presentation material should be in accordance with your allocated time. You are requested to load your presentation files before the session starts. Each oral presentation at the breakaway venues is limited to 20 minutes, which include the questions and answers. Please refer to this program booklet for actual presentation times. You are kindly requested to be present in the relevant presentation venue at least 10 minutes before the session starts.

Each presentation room is equipped with a laptop computer with a data projector. PowerPoint is the standard presentation format. The computers in the meetings rooms are provided to Window-based PC Users. Conference volunteers will be available to assist you in case you encounter difficulties to use the IT equipment.

Presentation Venues

The opening and welcome address, keynote speeches, invited speeches and panel discussions will be held at the Ballroom B.

The following table lists all the presentation venues with abbreviations, which are used in the detailed program in the late part of this booklet.

Oral presentations	Room
1-A3, 1-A4, 2-A2, 2-A3	Ballroom 2
1-B3, 1-B4, 2-B2, 2-B3	Duxton 2
1-C4, 2-C2, 2-C3	Duxton 3

Programme at a Glance

Registration: June 27-28, 08:00-17:00 **Conference dinner: June 27, 18:30-21:00, Epicurean Restaurant, Crown Towers, Perth, WA 6000**			
Time	**Day 1: June 27**		
09:00-09:30	**Opening and Welcome Address**		
09:30-10:00	**Keynote Speaker 1: Peter Cook, University of Melbourne/CO2CRC** **Title: CCUS: A retrospective and prospective view**		
10:00-10:30	**Keynote Speaker 2: Alex Zapantis, Global CCS Institute** **Title: Opportunities and Challenges for CCS**		
11:00-11:20	**Yoshihiro Sawada, Japan CCS Co., Ltd** **Title: Tomakomai CCS Demonstration Project of Japan, CO_2 Injection in Progress**		
11:20-11:40	**Kari-Lise Rørvik, Gassnova (invited)** **Title: Overview and status of the Norwegian full-scale storage project**		
11:40-12:00	**Vahab Honari, University of Queensland (invited)** **Title: CO_2 sequestration-EOR in Wuqi oil reservoir – Yanchang Field, China: Estimation of CO_2 storage capacity**		
12:00-12:20	**Xiaoliang Yang, World Resources Institute (invited)** **Title: The Karamay Dunhua EOR project**		
12:20-12:40	**Panel Discussion 1: Are there any knowledge gaps holding back large-scale implementation of CCUS?**		
Afternoon	**1-A3**	**1-B3**	
14:00-15:40	**Australian storage projects**	**Economics and legal frameworks**	
Afternoon	**1-A4**	**1-B4**	**1-C4**
16:10-17:30	**CO2 ESG/EOR/EWR**	**Storage assessments (1)**	**Pipelines and novel utilisation technologies**
Time	**Day 2: June 28**		
09:00-09:10	**Announcements and overview of the day's program**		
09:10-09:40	**Keynote Speaker 3: Paul Feron, CSIRO** **Title: Progress and innovation in CO_2 capture**		
09:40-10:10	**Isabelle Czernichowski-Lauriol, CO2GeoNet Association** **Title: European CO2GeoNet Network of Excellence & ECCSEL Research Infrastructure**		
10:10-10:30	**Andrew Feitz, Geoscience Australia** **Title: The China Australia Geological Storage of CO_2 (CAGS) Project: An example of bilateral cooperation and successful capacity building**		
Morning	**2-A2**	**2-B2**	**2-C2**
11:00-12:40	**Capture technologies**	**Storage assessments (2)**	**Monitoring and sensor technologies (1)**
Afternoon	**2-A3**	**2-B3**	**2-C3**
14:00-15:20	**Geochemistry**	**Leakage risk and faults**	**Monitoring and sensor technologies (2)**
15:50-16:30	**Panel Discussion 2: Advancing CCUS through global cooperation**		
16:30-16:40	**Closing Remarks**		
Time	**Day 3: June 29**		
08:15-17:30	**Day 3: June 29 (Field trip – ½ day or full day)** **Perth Core Library – view South West Hub Harvey core** **Tour of National Geosequestration Laboratory (NGL) facilities** **Caversham Wildlife Park (full day only)** **Olive Farm Wines and The Cheese Barrel (full day only)**		

Day 1 Oral Presentations

TIME	DAY 1: JUN 27
09:00-09:30	Opening and Welcome Address
09:30-10:00	Keynote Speaker 1: Peter Cook, University of Melbourne/CO2CRC Title: CCUS: A retrospective and prospective view
10:00-10:30	Keynote Speaker 2: Alex Zapantis, Global CCS Institute Title: Opportunities and Challenges for CCS
10:30-11:00	TEA/COFFEE BREAK
11:00-11:20	Yoshihiro Sawada, Japan CCS Co., Ltd Title: Tomakomai CCS Demonstration Project of Japan, CO_2 Injection in Progress (Moderator: Jiutian Zhang)
11:20-11:40	Kari-Lise Rørvik, Gassnova (invited) Title: Overview and status of the Norwegian full-scale storage project (Moderator: Jiutian Zhang)
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12:00-12:20	Xiaoliang Yang, World Resources Institute (invited) Title: The Karamay Dunhua EOR project (Moderator: Jiutian Zhang)
12:20-12:40	Panel Discussion 1: Are there any knowledge gaps holding back large-scale implementation of CCUS? (Moderator: Jiutian Zhang) (Panelists: Keynote and invited integrated demonstration project speakers)
12:40-14:00	LUNCH

Room: Ballroom 2

Session Name: Australia storage projects

Session Chair: Jinfeng Ma

Time	Paper ID	Author	Paper Title
14:00-14:20	52	Dominique Van Gent and Sandeep Sharma	The South West Hub Project: Do you need a conventional seal for safe containment?
14:20-14:40	55	Nick Hoffman	CarbonNet Project Update - New data and new momentum
14:40-15:00	54	Bruce Denney	Enhanced Oil Recovery (EOR) at the Moonie Oil Field
15:00-15:20	47	Stephen Malss	Surat Basin CCUS Hub - Securing a Low Carbon Future
15:20-15:40	59	Matthias Raab	Demonstrating Geological Carbon Storage at the CO2CRC Otway Research Facility

Day 1 Oral Presentations

Room: Duxton 2 Session Name: Economics and legal frameworks Session Chair: Yiming Wei			
Time	Paper ID	Author	Paper Title
14:00-14:20	31	Yao Xing and Zhu Lei	Is it worth to invest? An Evaluation of CTL-CCS project in China based on Real Options
14:20-14:40	13	Moonhyun Koh, Eunhae Shin and Woongchan Seo	Outline of Korean Integrated CCS Act Draft and Its Implication
14:40-15:00	32	Jing-Li Fan, Mao Xu, Shijie Wei and Xian Zhang	Evaluating the effect of subsidy policy on carbon capture and storage (CCS) investment decision-making— a case study of 45Q law of the United States
15:00-15:20	36	Shijie Wei, Xian Zhang, Mao Xu and Jingli Fan	Study on LCOE of Chinese Coal-Fired Power Plants with CCS: Based on Comparison with Natural Gas Power Plants
15:20-15:40	46	Kostya Tomashpolskyy and Massimiliano Sala	Role of a general contractor in advancing CCUS projects.
15:40-16:10	**TEA/COFFEE BREAK**		
Room: Ballroom 2 **Session Name: CO2 ESG/EOR/EWR** **Session Chair: Liuqi Wang**			
Time	Paper ID	Author	Paper Title
16:10-16:30	15	Xin Ma, Xufeng Li, Guodong Yang, Yujie Diao, Lisha Hu and Hui Zhang	Study on Field -scale of CO_2 Geological Storage Combined with saline water recovery: A Case Study of East Junggar basin of Xinjiang
16:30-16:50	11	Danqing Liu, Yilian Li and Sen Yang	Evaluation of the role of water-shale-gas reactions on CO_2 enhanced shale gas recovery
16:50-17:10	40	Bo Peng, Shenwei Zhang, Qi Liu, Jihui Jia and Lili Yang	Synthesisand Interfacial Property of Sulfonate Surfactant for CO_2-Foam
17:10-17:30	7	Taojie Lu, Peixue Jiang and Ruina Xu	Competitive Adsorption of Carbon Dioxide and Methane in Shale: Experimental Investigations by Low-field Nuclear Magnetic Resonance
Room: Duxton 2 **Session Name: Storage assessments (1)** **Session Chair: Dominique van Gent**			
Time	Paper ID	Author	Paper Title
16:10-16:30	42	Pengchun Li, Yunfan Zhang, Di Zhou and Xi Liang	Geological characterization and numeric modeling of a large anticlinal structure LF2-1, as a candidate site for CO_2 storage in deep saline aquifers, offshore Guangdong Province, P. R. China
16:30-16:50	39	Bo Peng, Li An Yang, Leilei Yang, Qi Liu and Jihui Jia	CO_2 Geological Storage Potential and Suitability Evaluation of Tarim Basin and Junggar Basin
16:50-17:10	43	Jinfeng Ma, Yang Yang and Haofan Wang	How much CO_2 is stored and verified through CCS/CCUS in China?
17:10-17:30	5	Liuqi Wang, Megan Lech, Chris Southby, Irina Borissova, Victor Nguen and David Lescinsky	CO_2 Storage Capacity Estimation through Static Reservoir Modelling: A Case Study of the Lower Cretaceous Gage Sandstone Reservoir in Offshore Vlaming Sub-basin, Perth Basin, Australia

Day 1 Oral Presentations

Room: Duxton 3 Session Name: Pipelines and novel utilization technologies Session Chair: Lin GAO			
Time	Paper ID	Author	Paper Title
16:10-16:30	29	Ruina Xu, Haowei Hu, Minh T Ho, Dianne E. Wiley and Peixue Jiang	Investigation of dynamic phase changes in high-pressure pipelines during flexible CO_2 transport
16:30-16:50	18	Qi Cao, Xingqing Yan, Xiaolu Guo, Jianliang Yu, Shaoyun Chen and Haroun Mahgerefteh	Temperature evolutions near the release orifice and analysis of under-expanded jets and far-field diffusion process during the CO_2 release from the industrial-scale pipeline
16:50-17:10	30	Jun Cheng, Wangbiao Guo, Yanmei Song, Santosh Kumar, Kubar Ameer Ali and Junhu Zhou	Enhancing vorticity magnitude of turbulent flow to promote photochemical efficiency and trichome helix pitch of Arthrospira platensis in a raceway pond with conic baffles
17:10-17:30	35	Dong Huang, Ming-Jia Li, Ya-Ling He and Bing-Ye Song	Intramembranous Mass Transfer under Various Anodic pH Conditions of Microbial Fuel Cells

Day 2 Oral Presentations

TIME	DAY 2: JUN 28
09:00-09:10	Announcements and overview of the day's program
09:10-09:40	Keynote Speaker 3: Paul Feron, CSIRO Title: Progress and innovation in CO_2 capture
09:40-10:10	Isabelle Czernichowski-Lauriol, CO2GeoNet Association Title: European CO2GeoNet Network of Excellence & ECCSEL Research Infrastructure (Moderator: Xiaochun Li)
10:10-10:30	Andrew Feitz, Geoscience Australia Title: The China Australia Geological Storage of CO_2 (CAGS) Project: An example of bilateral cooperation and successful capacity building (Moderator: Xiaochun Li)
10:30-11:00	TEA/COFFEE BREAK

Room: Ballroom 2

Session Name: Capture technologies

Session Chair: Jingliang Yu

Time	Paper ID	Author	Paper Title
11:00-11:20	45	Deng Hu, Tianyang Zhu, Lina Zhang, Hongyu Zhao, Nannan Sun, Wei Wei and Yuhan Sun	ETS-10 Zeolite with Enhanced Performance for CO_2 Capture From Flue Gas
11:20-11:40	33	Yannan Li, Jun Cheng, Leiqing Hu, Niu Liu, Wangbiao Guo, Junhu Zhou and Kefa Cen	Physicochemical characterization of EDA-carbamate crystals generated in phase-changing solutions for efficient CO_2 capture
11:40-12:00	44	Worrada Nookuea, Hailong Li, Zhixin Yu, Xinhai Yu and Jinyue Yan	Regenerating CO_2 at high pressures for chemical absorption
12:00-12:20	37	Shijian Lu	CO_2 absorber coupled with double pump CO_2 capture technology for coal-fired flue gas
12:20-12:40	51	Lianbo Liu, Shiqing Wang, Hongwei Niu and Shiwang Gao	Process and Integration Optimization of Post-Combustion CO_2 Capture System with a Thermal Coal Power Plant

Room: Duxton 2

Session Name: Storage assessments (2)

Session Chair: Allison Hortle

Time	Paper ID	Author	Paper Title
11:00-11:20	28	Yujie Diao, Guowei Zhu, Xufeng Li, Bing Bai, Yongsheng Wang, Bing Zhang and Hui Long	An upgraded storage site model of the Shenhua CCS demonstration project
11:20-11:40	26	Emad A. Al-Khdheeaw, Stephanie Vialle, Ahmed Barifcani, Mohammad Sarmadivaleh and Stefan Iglauer	The effect of WACO2 ratio on CO_2 geo-sequestration efficiency in homogeneous reservoirs
11:40-12:00	58	Wang Yongsheng, Chen Maoshan and Li Jingfeng	Practice of CO_2 injection and storage in low porosity and low permeability saline aquifer
12:00-12:20	38	Bo Peng, Shuanxin Liu, Qi Liu, Leilei Yang and Jihui Jia	Feasibility for CCS-EOR in Ordors Area in China
12:20-12:40	34	Lin Yang, Xian Zhang and Yuantao Yang	Geospatial analysis of near-term potential for CCUS in China

Day 2 Oral Presentations

Room: Duxton 3 Session Name: Monitoring and sensor technologies (1) Session Chair: Matt Myers			
Time	Paper ID	Author	Paper Title
11:00-11:20	24	Ludovic Ricard and Roman Pevzner	Evaluation of sensitivity of downhole temperature estimates from distributed temperature sensing measurements
11:20-11:40	17	Qi Li, Jianli Ma, Xiaochun Li and Liang Xu	Integrated Monitoring of China's Yanchang CO_2-EOR Demonstration Project in Ordos Basin
11:40-12:00	41	Shijian Lu	On-line monitoring technology for internal corrosion of oil field
12:00-12:20	12	Hongchun Jin, Zhongwei Huang, Xiaodan Guan and Yubin Zhou	Anthropogenic emissions of atmospheric CH_4 and CO_2 using Satellite observation over Tibet
12:40-14:00	**LUNCH**		
Room: Ballroom 2 **Session Name: Geochemistry** **Session Chair: Isabelle Czernichowski**			
Time	Paper ID	Author	Paper Title
14:00-14:20	23	Hongyan Yu, Yihuai Zhang, Maxim Lebedev, Zhenliang Wang, Zihihao Cui, Michael Verrall, Andrew Squelch and Stefan Iglauer	CO_2 Saturated Brine Injected into Fractured Shale by Micro-CT in-situ Flooding Test
14:20-14:40	14	Yihuai Zhang, Maxim Lebedev, Hongyan Yu and Stefan Iglauer	Experimental Study of Supercritical CO_2 Injected into Water Saturated Medium Rank Coal by X-ray MicroCT
14:40-15:00	27	Di He, Peixue Jiang and Ruina Xu	Theoretical analysis and pore-scale experimental study of drying effects of CO_2 injection into deep saline aquifer
15:00-15:20	20	Johyun Baek, Won Shik Han, Jize Piao, Gi Don Han, Jong Gil Park, Tae Kwon Yun and Do Hyun Seo	Assessment of Pore Characteristics in Janggi Conglomerate using Micro-focus CT Image Analysis
Room: Duxton 2 **Session Name: Leakage risks and faults** **Session Chair: Seong-Taek Yun**			
Time	Paper ID	Author	Paper Title
14:00-14:20	25	Sen Yang, Yilian Li, Yan Zhu and Danqing Liu	Effect of fracture on gas migration, leakage and CO_2 enhanced shale gas recovery in Ordos Basin
14:20-14:40	22	Andrew Feitz, Konsantin Tertyshnikov, Roman Pevzner, Ludo Ricard, Brett Harris, Ralf Schaa, Ulrike Schacht, Aleks Kalinowski, Stephanie Vialle, Stanislav Glubokovskikh, Maxim Lebedev, Eric Tenthorey, Zhejun Pan, Jonathan Ennis-King, Liuqi Wang, Shahadat Hossain, Tim Ransley, Bruce Radke, Milovan Urosevic and Rajindar Singh	The CO2CRC Otway shallow CO_2 controlled release experiment: Preparation for Phase 2
14:40-15:00	4	Chan Yeong Kim, Weon Shik Han, Eungyu Park and Seong-Taek Yun	Risk Assessment for CO_2 Leakage and Associated Secondary Contaminations in Portable Aquifer
15:00-15:20	8	Eric Tenthorey, Richard Thomas and David Dewhurst	Methodologies for Improved Fault Risk Assessment: Examples from the CO2CRC Otway Project

Day 2 Oral Presentations

Room: Duxton 3 Session Name: Monitoring and sensor technologies (2) Session Chair: Qi Li			
Time	Paper ID	Author	Paper Title
14:00-14:20	1	Matthew Myers, Jennifer Roberts, Cameron White and Linda Stalker	The Impact of Water on CO_2 Leak Rate Measurements for CCS projects
14:20-14:40	6	Karsten Michael, Arsham Avijegon, Ludovic Ricard, Tess Dance, Claudio Delle Piane, Barry Freifeld, Mark Woitt, Linda Stalker, Jo Myers, Marina Peruvkhina, Laurent Langhi, Allison Hortle, Don Geeves and Stefan Finsterle	Multi-Level CO_2 Injection Testing and Monitoring at the South West Hub In-Situ Laboratory
14:40-15:00	19	Wenmei He, You Jin Kim, Xuanlin Chen, Daegeun Ko and Gayoung Yoo	The effects of high soil CO_2 concentration on soil N_2O and CH_4 emissions —— a field study
15:00-15:20	16	Yun-Yeong Oh, Seong-Taek Yun, Soonyoung Yu, Hyun-Jun Kim and Seong-Chun Jun	Characterization of Environmental Drivers Controlling the Baseline of Soil Surface CO_2 Flux using Wavelet-based Multiresolution State-Space Model and Wavelet Denoising
15:20-15:50	**TEA/COFFEE BREAK**		
15:50-16:30	**Panel Discussion 2: Advancing CCUS through global cooperation (Moderator: Andrew Feitz)**		
16:30-16:40	**Closing Remarks (Chair: Xiaochun Li)**		

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