



Sixth International Symposium on  
**ENERGY CHALLENGES  
AND MECHANICS**  
Towards a Big Picture

Presentation Schedule  
+ Delegate Listing

14 - 18 August 2016

## THE SCHEDULE

The Session Topics covered at ISECM 2016 are arranged into 7 Parallel Sessions (A-G). During each Parallel, there will be several session slots you can choose to attend in different classrooms. Each slot will feature a group of presentations related to the same topic.

The Session Slots are named with a number and letter identifier. The number refers to The Session Topic (see below) and the letter indicates during which Parallel the session will take place (see page 2). For example, Session Slot 01A means the topic is 01: Energy Efficiency, and it will take place during Parallel A.



## SESSION TOPICS

- 01:** Energy Efficiency
- 02:** Sustainable Energy
- 03:** Safety and Integrity Management For Energy Industry
- 04:** Energy Security
- 05:** Energy And Environment
- 06:** Bioenergy
- 07:** Nuclear Energy
- 10:** For Clean Environment
- 11:** Energy Future
- 12:** New Energy Vehicles
- 15:** Renewable Energy Technologies
- 16:** Energy Harvesting and Storage
- 17:** Energy and Superconductivity
- 19:** Oil And Gas
- 20:** Energy Policy and Economy
- 23:** Smart Grid
- 24:** Energy, Water, and Human Survival

## POSTER EXHIBITION

The Poster Exhibition will begin at 18:30 in the Kingsmills suite on Day 1. Please take the opportunity to view these as part of your evening.

- Session 04. The New Energy Era - Moty Kuperberg, The International Energy Security Agency | Dynamic Shipping Services, Haifa, Israel
- Session 05. Renewable energy for the environmental sustainability in Papua New Guinea - Suriyaprabha Kannan, University of Goroka, Papua New Guinea
- Session 05. Possibilities of use particular insulations based on natural fibres to increase the thermal stability of the envelope construction in summer - Martina Reif, Brno University of Technology, Czech Republic
- Session 05. Protection ceramic masonry units for masonry before stress of high humidity - Vitezslav Novak, Brno University of Technology, Czech Republic
- Session 05. Plasma Amino Functionalized 3D Porous Aromatic Framework (PAF) materials for CO<sub>2</sub> Capture - Giorgio Gatti, University of Eastern Piedmont, Italy
- Session 05. Advances in the chemistry of alkyne-substituted homo- and heterometallic carbonyl clusters of the Iron, Cobalt and Nickel triads. An update - Andrea Secco, University of Eastern Piedmont, Italy
- Session 06. Comparative Energetic Assessment of integrated H<sub>2</sub>- and CH<sub>4</sub>- Production via Biomass Supercritical Water Gasification - Thomas Kohl, Aalto University School of Engineering, Finland
- Session 06. Comparing physiological performance of two ecotypes of *Arundo donax* under drought - Mastaneh Ahrar, University of Innsbruck, Austria
- Session 10. Dielectric Property Determination of Hybrid Al<sub>2</sub>O<sub>3</sub>-filled MWCNT Buckypaper by the Rectangular Cavity Perturbation Technique - Hsin-Yuan Miao, TungHai University, Taiwan
- Session 15. Experimental Investigation on Water Transfer in Passive Type PEFC - Eiji Ejiri, Chiba Institute of Technology, Japan
- Session 15. A comparative analysis for stability improvement of BESS connected with diesel generator - Hanju Cha, Chungnam National University, Daejeon, South Korea

## POSTER EXHIBITION CONT.

- Session 15. Implementation of a master in renewable energies in developing country: EPIC project - Andres Fullana, University of Alicante, Spain
- Session 15. Study on the Gear Ratio for a Tidal Current Power Generation System using the Constant Turbine Output Control Method - Kentaro Tsuji, Nihon University, Japan
- Session 15. Dynamic behaviour of a mid-floating ducted tidal energy convertor - Chul H. Jo, Inha University, South Korea
- Session 15. Development of a ocean-current turbine for the Kuroshio Current - Katsutoshi Shirasawa, Okinawa Institute of Science and Technology Graduate University, Japan

## WANT MORE DETAILS?

For speaker bio sketches, detailed session descriptions and abstracts, please visit our website:  
<http://www.nscj.co.uk/ecm6/Session%20Speakers.html>

### PARALLEL A Day 1 | 10:40-12:25

| Session     | Room       |
|-------------|------------|
| Session 01A | Burns      |
| Session 06A | Damfield   |
| Session 15A | Kingsmills |
| Session 19A | Culcabock  |
| Session 23A | Macleod    |

### PARALLEL B Day 1 | 13:40-15:25

| Session     | Room       |
|-------------|------------|
| Session 03B | Damfield   |
| Session 05B | Kingsmills |
| Session 11B | Culcabock  |
| Session 17B | Macleod    |
| Session 20B | Burns      |
| Session 23B | Adams      |

### PARALLEL C Day 1 | 15:45-17:30

| Session     | Room       |
|-------------|------------|
| Session 01C | Burns      |
| Session 03C | Culcabock  |
| Session 06C | Damfield   |
| Session 10C | Macleod    |
| Session 15C | Kingsmills |
| Session 16C | Adams      |

### PARALLEL D Day 2 | 10:00-11:45

| Session     | Room       |
|-------------|------------|
| Session 05D | Damfield   |
| Session 06D | Macleod    |
| Session 15D | Kingsmills |
| Session 16D | Burns      |
| Session 19D | Adams      |
| Session 20D | Culcabock  |

### PARALLEL E Day 2 | 13:00-14:45

| Session     | Room       |
|-------------|------------|
| Session 01E | Burns      |
| Session 02E | Culcabock  |
| Session 05E | Kingsmills |
| Session 07E | Damfield   |
| Session 12E | Macleod    |

### PARALLEL F Day 2 | 15:05-16:50

| Session     | Room       |
|-------------|------------|
| Session 02F | Burns      |
| Session 05F | Damfield   |
| Session 15F | Macleod    |
| Session 20F | Kingsmills |
| Session 24F | Culcabock  |

## PARALLEL G Day 3 | 9:30-11:15

| Session     | Room       |
|-------------|------------|
| Session 04G | Macleod    |
| Session 07G | Damfield   |
| Session 12G | Culcabock  |
| Session 15G | Kingsmills |
| Session 24G | Burns      |

### 01A 15th August 2016, Monday, 10:40-12:25

Topic: Energy efficiency

Moderator: Prof. Diane Henshel, Indiana University, United States

Location: Burns

- An Adaptive Page Management in Hybrid DRAM and PRAM Main Memory of Manycore Systems for Energy Efficiency (20 minutes) - Kyu Ho Park, Korea Advanced Institute of Science and Technology, South Korea
- Energy Efficiency In The Transmission And Distribution Of Electric Energy (20 minutes) - Tayfun Okan, University of Turkish Aeronautical Association, Turkey
- Integration Assessment of China's Energy Efficiency: Index Decomposition and DEA Method (20 minutes) - Jinhe Jiang, Chinese Academy of Social Sciences, China
- A spatial domestic energy framework for sub-city areas: A case study from the United Kingdom (20 minutes) - Javier Urquiza, Newcastle University, United Kingdom
- Halving the electricity consumption by adding a heat pump system in a household dishwasher (10 minutes) - Peder Bengtsson, Karlstad University, Sweden

### 06A 15th August 2016, Monday, 10:40-12:25

Topic: Bioenergy

Moderator: Dr. Muhammad R. Naqvi, Malardalen University, Sweden

Location: Damfield

- Biomass Harvesting Guidelines affect downed woody debris retention (20 minutes) - Ben Jackson, University of Georgia Athens, United States
- Cell Encapsulation for living cell surface functionalization (20 minutes) - Xiao-Yu Yang, Wuhan University of Technology, China

- A competitiveness analysis of alternative oilseeds for biodiesel production in Brazil (20 minutes) - Antonio Domingos Padula, Univerisade Federal do Rio Grande do Sul - UFRGS, Brazil
- Direct biodiesel production from Algae in Supercritical Ethanol (10 minutes) - Lais Galileu Speranza, University of Birmingham, United Kingdom

### 15A 15th August 2016, Monday, 10:40-12:25

Topic: Renewable energy technologies

Moderator: Ibrahim Fahmy, ZADCO, UAE

Location: Kingsmills

- Electrical aspects of the DeepWind 5 MW floating VAWT (20 minutes) - Ewen Ritchie, Aalborg University, Denmark
- Proton Exchange Membrane Fuel Cells: Recent Developments, Modelling and Challenges (20 minutes) - Alhussein Albarbar, Manchester Metropolitan University, United Kingdom
- Load Forecasting for Power Systems and operation planning in Abu Dhabi by Using Artificial Neural Networks (20 minutes) - Maitha Al Shamsi, Abu Dhabi Transmission and Despatch Company, UAE
- Intentions to use bike-sharing for holiday cycling: An application of the Theory of Planned Behavior (10 minutes) - Francesco Manca, Imperial College London, United Kingdom

### 19A 15th August 2016, Monday, 10:40-12:25

Topic: Oil and gas

Moderator: Prof. Marcel C. Minutolo, Robert Morris University, United States

Location: Culcabock

- Automatic cleaning and inspection tools for offshore risers (20 minutes) - Jean Pierre von der Weid, Pontifical Catholic University of Rio de Janeiro, Brazil
- Application of Polyglycolic Acid to Self-Degradable Downhole Tools (20 minutes) - Yoshinori Suzuki, Kureha Corporation, Japan
- Global Optimization and Thermodynamic Analysis of the Heat Exchanger Network in Petrochemical Industries (20 minutes) - Eid M. Al-Mutairi, King Fahd University of Petroleum & Minerals, Saudi Arabia



**23A** 15th August 2016, Monday, 10:40-12:25

Topic: Smart grid

Moderator: Prof. Peter Mark Jansson, Bucknell University, United States

Location: Macleod

- Improving electric distribution system performance with dynamic ampacity: a study of environmental influence on underground cables (20 minutes) - Jeffrey S. Marshall, University of Vermont, United States
- A completely new solution for the future power systems (20 minutes) - Albana Ilo, Institute for Energy Systems and Electrical Drives, Austria
- A flexible electricity tariff design containing power and energy price signals as an incentive for demand response (20 minutes) - Michael Schreiber, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Germany

**03B** 15th August 2016, Monday, 13:40-15:25

Topic: Safety and integrity management for energy industry

Moderator: Ibrahim Fahmy, ZADCO, UAE

Location: Damfield

- TAMOC-c Simulations of the Aqueous Dissolution of Petroleum Fluids in the Deep Sea during the 2010 Deepwater Horizon disaster (20 minutes) - J. Samuel Arey, Swiss Federal Institute of Aquatic Science and Technology, Switzerland
- Multibody dynamic testing and modelling of buried steel gas pipeline under excavating equipment (20 minutes) - Taolong Xu, Southwest Petroleum University, China
- The Bowtie Method: A Review (20 minutes) - Alex de Ruijter, CGE Risk Management Solutions, The Netherlands

**05B** 15th August 2016, Monday, 13:40-15:25

Topic: Energy and environment

Moderator: Dr. Lloyd Baiyegunhi, University of KwaZulu-Natal, South Africa

Location: Kingsmills

- Categorization of indoor air quality using fuzzy approach (20 minutes) - Andrzej Szczurek, Wroclaw University of Technology, Poland
- Impact of Insulated Concrete Balcony Curb on Interior Concrete Surface Temperature (20 minutes) - Chuck Murad, Tarion Warranty Corporation, Toronto, Canada

- Are common species endangered by climate change? Lessons from a small tropical snake (20 minutes) - Paulo Cesar Mattos Dourado de Mesquita, Sete de Setembro College, Fortaleza, Brazil

**11B** 15th August 2016, Monday, 13:40-15:25

Topic: Energy future

Moderator: Moty Kuperberg, The International Energy Security Agency | Dynamic Shipping Services, Haifa, Israel

Location: Culcabock

- Will the electric power sector business model be disrupted? (20 minutes) - Fereidoon Sioshans, President, Menlo Energy Economics, San Francisco, United States
- DESERTEC and Beyond - Options of a Global Energy Transition (20 minutes) - Michael Dueren, University of Giessen, Germany
- The Next Fifty Years: Electricity, Storage and Sustainability (20 minutes) - Elizabeth A. Kocs, University of Illinois at Chicago, United States
- Charcoal production: social and environmental challenges with increased income for small and medium scales (20 minutes) - Kazuo Hatakeyama, Higher Education III at Educational Society of Santa Catarina, Joinville, Santa Catarina State, Brazil
- Metal fuels for carbon-neutral energy processes (20 minutes) - Martin Schiemann, Ruhr-University Bochum, Germany

**17B** 15th August 2016, Monday, 13:40-15:25

Topic: Energy and superconductivity

Moderator: Dr. Henry Tan, University of Aberdeen, United Kingdom

Location: Macleod

- Superconducting motor and generator cancelled out self-induction for high power-to-weight ratio (20 minutes) - Minaru Kawamura, Okayama University of Science, Japan
- Characterization of rare-earth oxides by x-ray diffraction and fluorescence, and by Raman and Nd<sup>3+</sup> fluorescence spectroscopy (20 minutes) - Richard W. Stimets, University of Massachusetts Lowell, United States
- Pressure Dependence of Superconductivity on filled-skutterudite YTe<sub>4</sub>P<sub>12</sub> (T=Ru, Os) (20 minutes) - Yukihiro Kawamura, Muroran Institute of Technology, Japan

**20B** 15th August 2016, Monday, 13:40-15:25

Topic: Energy policy and economy

Moderator: Derek Sylvan, New York University School of Law, United States

Location: Burns

- The Link between Economic Development and The Green Economy (20 minutes) - Sul Kassieh, University of New Mexico, United States
- Non-industrial Private Forest Owners' Willingness to Supply Forest-based Energy Wood in the South Savo region in Finland (20 minutes) - Sinikka Mynttinen, Mikkeli University of Applied Sciences, Finland
- Valuation of transmission network expansion: A market-based approach (20 minutes) - Jose Manuel Chamorro, University of the Basque Country, Spain
- Economic metrics of improved Alkaline Water Electrolysis (20 minutes) - Wilhelm Kuckshinrichs, Institute of Energy and Climate Research, Germany

**23B** 15th August 2016, Monday, 13:40-15:25

Topic: Smart grid

Moderator: Prof. Jeffrey S. Marshall, University of Vermont, United States

Location: Adams

- Big data and smart meters; a new approach for smart energy management solutions (25 minutes) - Frans Campfens, Alliander, The Netherlands
- The smart, residential microgrid: affordable virtual energy storage today (20 minutes) - Peter Mark Jansson, Bucknell University, United States
- Smart grids and the Finnish regulation of electricity distribution system operators (20 minutes) - Kanerva Sunila, Aalto University, Finland

**01C** 15th August 2016, Monday, 15:45-17:30

Topic: Energy efficiency

Moderator: Prof. Gale A. Boyd, Duke University, United States

Location: Burns

- Modular Power Converters with High Efficiency (20 minutes) - Matthias Radecker, Fraunhofer Institute of Reliability and Microintegration, Berlin, Germany
- Okonflex: An IT-tool for configuring wooden house constructions (20 minutes) - Anton Kraler, University of Innsbruck, Austria

- The use of cost optimal methodology to determine nZEB standard of public building (20 minutes) - Jerzy Kwiatkowski, Warsaw University of Technology, Poland
- Modelling, Simulation and Optimization of the operation of electric chillers (20 minutes) - Benjamin Morzinger, Vienna University of Technology, Austria
- Retrofitting towards nZEB - a Cyprus case study for residential buildings based on current cost optimal market levels (10 minutes) - Flouris Xenis, Cyprus University of Technology, Cyprus

**03C** 15th August 2016, Monday, 15:45-17:30

Topic: Safety and integrity management for energy industry

Moderator: Ibrahim Fahmy, ZADCO, UAE

Location: Culcabock

- Downtime reduction case studies from Intermittent Fault Detection and Integrity Testing (20 minutes) - Giles Huby, Copernicus Technology Ltd, United Kingdom
- Safety in Hard Times (20 minutes) - Steve Young, Federation University Australia, Australia
- Temporal kurtosis of dynamic pressure signal as a quantitative measure of combustion instability for an energy conversion system (20 minutes) - Dong Jin Cha, Hanbat National University, Daejeon, South Korea

**06C** 15th August 2016, Monday, 15:45-17:30

Topic: Bioenergy

Moderator: Prof. Ben Jackson, University of Georgia Athens, United States

Location: Damfield

- "Ecoputational" assessment by narratives: a case study in the heating of buildings (20 minutes) - Philip Sinclair, Eco-Design and Policy Ltd, United Kingdom
- Comparison of torrefaction and hydrothermal carbonization of olive mill waste (20 minutes) - Andres Fullana, University of Alicante, Spain
- Influence of CME-Diesel Blends on the Performance and Emissions of a Light Duty Common Rail Direct Injection Engine (20 minutes) - Jose Gabriel E. Mercado, University of the Philippines Diliman, Philippines
- Importance of potassium hydroxide in slagging, fouling and corrosion processes in biomass fired combustors (20 minutes) - Tom Blomberg, ASM Microchemistry Ltd., Finland

**10C 15th August 2016, Monday, 15:45-17:30**

Topic: For clean environment

Moderator: Prof. Krzysztof Wojdyga, Warsaw University of Technology, Poland

Location: Macleod

- Environmental Health: Children's Health, a Clinician's Dilemma (20 minutes) - Hilary McClafferty, University of Arizona Center for Integrative Medicine, United States
- Environmental and Health Risks of Military Activities in Sardinia Island (20 minutes) - Cristiano Foschi, The Sapienza University of Rome, Italy
- Quantifying indirect carbon emissions in large organisations (20 minutes) - Richard W. Barraclough, CloudBuy plc, United Kingdom
- Rural household fuel energy switching in Giwa Lga Kaduna State, Nigeria (20 minutes) - Lloyd Baiyegunhi, University of KwaZulu-Natal, South Africa

**15C 15th August 2016, Monday, 15:45-17:30**

Topic: Renewable energy technologies

Moderator: Prof. Ewen Ritchie, Aalborg University, Denmark

Location: Kingsmills

- Microgrid Control Methods with Hybrid Renewable Energy Systems (20 minutes) - Magdi S. Mahmoud, Systems Engineering Department, Saudi Arabia
- Using the ensemble Kalman filter for electricity load forecasting and analysis (20 minutes) - Hisashi Takeda, The Graduate University for Advanced Studies (SOKENDAI) & Tokyo Electric Power Company Holdings (TEPCO), Japan
- Reactive Power Management of Medium-Voltage Grids (20 minutes) - Steffen Garske, Leibniz University of Hanover, Germany

**16C 15th August 2016, Monday, 15:45-17:30**

Topic: Energy harvesting and storage

Moderator: Prof. Haruichi Kanaya, Kyushu University, Japan

Location: Adams

- A multi-generator damper for harvesting vehicle vibration energy (20 minutes) - Ruxu Du, Chinese University of Hong Kong, China
- Power supply method of micro- and nanosystem engineering devices (20 minutes) - Maksym Bondarenko, Cherkasy State Technological University, Ukraine

- Parameter studies on FPEDs utilizing engine vibration (10 minutes) - Hiroaki Koyama, Hiroshima University, Japan

**05D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Energy and environment

Moderator: Prof. Dr. Andrzej Szczurek, Wroclaw University of Technology, Poland

Location: Damfield

- Environmental aspects of magnesium materials for transportation industries (20 minutes) - Karl Ulrich Kainer, Innovation Centre Helmholtz - Zentrum Geesthacht, Germany
- Gaps in Mobile Phone Waste Management in developing countries: A case of Sri Lanka (20 minutes) - Vyshnavi Thavalingam, ABI Resource & Services Pte Ltd, Singapore
- Numerical Simulation using Ammonia/Methane blends in a Swirl Gas Turbine Combustor (10 minutes) - Hua Xiao, Cardiff University, United Kingdom

**06D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Bioenergy

Moderator: Prof. Andres Fullana, University of Alicante, Spain

Location: Macleod

- Clean bioenergy H<sub>2</sub> photobiologically produced by green algal *Chlorella* sp. DT mutants with overexpressed hydrogenase or ferredoxin (20 minutes) - Lee-Feng Chien, National Chung Hsing University, Taiwan
- Thermoeconomic analysis of three biomass upgrading processes integrated with a municipal CHP plant (20 minutes) - Thomas Kohl, Aalto University School of Engineering, Finland
- Black liquor gasification based bio-refinery system integrated with Chemical pulp mills without conventional recovery cycle for synthetic gas production (20 minutes) - Muhammad R. Naqvi, Malardalen University, Sweden
- Study of bacterial relations in a synthetic consortium involved in hydrogen production (10 minutes) - Cassandra Backes, Bioenergetics and Protein Engineering, CNRS, France

**15D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Renewable energy technologies

Moderator: Dr Alhussein Albarbar, Manchester Metropolitan University, United Kingdom

Location: Kingsmills

- Conceptual Proposal on Extra-Low Hydropower Utilization of Shallow-Water Flow in Gutter by Handy-type Darrieus Turbine (20 minutes) - Akinori Furukawa, Professor Emeritus, Kyushu University, Japan
- How does a tidal current free surface limit the power output of a turbine array? (20 minutes) - Peter F. Pelz, Darmstadt University of Technology, Germany
- Aerodynamic and Aeroacoustic Prediction of Wind Turbine Rotor for a 2MW Horizontal-Axis Design under the Rated Condition (20 minutes) - Shiu-Wu Chau, National Taiwan University, Taiwan
- Offshore wind and wave energy: combined generation in islands and coastal regions. Practical case: The Canary Islands (20 minutes) - Julieta Schallenberg-Rodriguez, University of Las Palmas de Gran Canaria, Spain
- The large circulating tank UT2 - Testing river turbines with non-scaled dimensions (10 minutes) - Angela Gerlach, Technical University Berlin, Germany

**16D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Energy harvesting and storage

Moderator: Dr. Henry Tan, University of Aberdeen, United Kingdom

Location: Burns

- Feasibility of foot pressure sensor based on piezoelectric energy harvesting chip (20 minutes) - Kimio Oguchi, Seikei University, Tokyo, Japan
- Energy Harvesting Circuit for Radio Frequency Application (20 minutes) - Haruichi Kanaya, Kyushu University, Japan
- Low Frequency Broad-Band Hybrid Piezoelectric-Electromagnetic Vibration Energy Harvesting (20 minutes) - Kok Swee Leong, Universiti Teknikal Malaysia Melaka, Malaysia

**19D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Oil and gas

Moderator: Prof. Jean Pierre von der Weid, Pontifical Catholic University of Rio de Janeiro, Brazil

Location: Adams

- Introduction of CNG refuelling stations in a built urban environment (20 minutes) - Marcel C. Minutolo, Robert Morris University, United States

- The Benefits of Adding a Lubricating Phase for Transportation of a Viscous Fluid In Inclined CAFs (20 Minutes) - Ayelet Goldstein, Ort Braude College, Israel
- Analysis of the combined effects of dissolved air and entrained air in closed loop lube oil systems: a mathematical method to accurately predict when a rotary positive displacement lube oil pump will run in aeration and a method to dimension it without unnecessary redundancies (20 minutes) - Pietro Fracassi, Leistritz Italia, Italy
- Understanding relationship between Nuclear Magnetic Resonance response and pore structure of conglomerate reservoir (20 minutes) - Feng Wu, School of geoscience and technology, Southwest Petroleum University, China, School of Geosciences, University of Aberdeen, United Kingdom

**20D 16th August 2016, Tuesday, 10:00-11:45**

Topic: Energy policy and economy

Moderator: Dr. Wilhelm Kuckshinrichs, Institute of Energy and Climate Research, Germany

Location: Culcabock

- Ceramics and Sustainability (20 minutes) - Lynnette D. Madsen, National Science Foundation, United States
- Sustainable Communication. The Energy that Generates Resources (20 minutes) - Luca Toschi, University of Florence, Italy
- Some alternatives to measure volatility of energy price series (20 minutes) - Maria del Carmen Ruiz Abellon, Technical University of Cartagena, Spain
- Evaluating and benchmarking productive performances of six industries in Taiwan Hsin Chu Industrial Science Park (20 minutes) - Chia-Chi Sun, Tamkang University, Taiwan

**01E 16th August 2016, Tuesday, 13:00-14:45**

Topic: Energy efficiency

Moderator: Dr.-Ing. Matthias Radecker, Fraunhofer Institute of Reliability and Microintegration, Germany

Location: Burns

- Measuring Plant Level Energy Efficiency and Technical Change in the U.S. Metal-Based Durable Manufacturing Sector Using Stochastic Frontier Analysis (20 minutes) - Gale A. Boyd, Duke University, United States
- Using a New Sub-building Classification Scheme for Analysis of Space and Usage Contribution to Building Energy Demand (20 minutes) - Diane Henshel, Indiana University, United States



- Exergy efficiency of ventilation heat recovery exchanger for variable reference temperature (10 minutes) - Karolis Janusevicius, Vilnius Gediminas Technical University, Lithuania

- Addressing the factors causing inefficiency of fossil fuel power generation in Saudi Arabia (10 minutes) - Mohammad Althaqafi, Brunel University London, United Kingdom

**02E 16th August 2016, Tuesday, 13:00-14:45**

Topic: Sustainable energy

Moderator: Dr. Magnus Stahl, Karlstad University, Sweden

Location: Culcabock

- Energy from forest for sustainable bio-economy (20 minutes) - Janis Abolins, University of Latvia, Latvia
- Assessment of China's renewable energy contribution during the 12th Five Year Plan (20 minutes) - Lixuan Hong, Chongqing University, China
- Ecological Footprint of Da Nang and Kigali: Comparison of two rapidly growing cities (20 minutes) - Sheetal Marathe, Institute for Energy Economics and Rationale Use of Energy University of Stuttgart, Germany
- Suitability of lateritic soils in the construction/development of sustainable housing in Africa: A Geological Perspective. (20 minutes) - Charles Oyelami, Department of Geology, Osun State University, Nigeria
- Sustainability Definitions - Major Approaches (20 minutes) - Lukas Ferkl, Czech Technical University, Czech Republic

**05E 16th August 2016, Tuesday, 13:00-14:45**

Topic: Energy and environment

Moderator: Prof. Dr. Karl Ulrich Kainer, Innovation Centre Helmholtz - Zentrum Geesthacht, Germany

Location: Kingsmills

- Catalytic bi-reforming of methane using Ni-based pyrochlores (20 minutes) - James J. Spivey, Louisiana State University, United States
- Energy and molecules from photochemical/photocatalytic reactions (20 minutes) - Angelo Albini, University of Pavia, Italy
- The hydraulic analysis for district heating system is a way to increasing a pollutions from district heating heat sources, Poland (20 minutes) - Krzysztof Wojdyga, Warsaw University of Technology, Poland

**07E 16th August 2016, Tuesday, 13:00-14:45**

Topic: Nuclear energy

Moderator: Dr. Alexander B. Cannara, Thorium Energy Silicon Valley, United States

Location: Damfield

- On the economics and long-term sustainability of nuclear power (20 minutes) - John Rawls, General Atomics, San Diego, United States
- Evaluation of actuators for a dismantling manipulator during nuclear decommissioning (20 minutes) - Jongwon Park, Korea Atomic Energy Research Institute, South Korea
- Neutron detectors developments for in-core and surrounding of nuclear reactors (20 minutes) - Itzhak Orion, Ben Gurion University of the Negev, Israel
- Public radiological impact due to releasing of radioactive effluents resulted from nuclear reactor decommissioning (10 minutes) - Carmen Tuca, IFIN-HH, Bucharest-Magurele, Romania

**12E 16th August 2016, Tuesday, 13:00-14:45**

Topic: New energy vehicles

Moderator: Prof. Ramiro Varela, University of Oviedo, Spain

Location: Macleod

- Optimisation and Detailed Engineering of Waste Heat Recovery System for Passenger Car Application (20 minutes) - Peter Heidrich, Hochschule Kaiserslautern - University of Applied Sciences, Germany
- The feasibility of distributed hydrogen production from renewable energy sources for hydrogen fuel cell vehicles (20 minutes) - Geoff Southall, University of Liverpool, United Kingdom
- Performance Analysis of a Hybrid Storage System for Electric Vehicles (20 minutes) - Carl Michael Odulio, University of the Philippines Diliman, Philippines

**02F 16th August 2016, Tuesday, 15:05-16:50**

Topic: Sustainable energy

Moderator: Dr. Lixuan Hong, Chongqing University, China

Location: Burns

- Additives for wood fuel pellet production - A win, win, win situation (20 minutes) - Magnus Stahl, Karlstad University, Sweden
- Target Oriented Evaluation of Transport Efficiencies in GrowSmarter (20 minutes) - Markus Robert, Royal Institute of Technology (KTH), Sweden

- Permaculture, a tool for adaptation to climate change in the communities of the Laguna Oca Biosphere Reserve, Argentina. (20 minutes) - Clara E. Mancebo, National Formosa University, Argentina
- Lessons from Living Systems for the Development of Sustainable Industrial Resource Networks (20 minutes) - John J. Reap, Quinnipiac University, United States

**05F 16th August 2016, Tuesday, 15:05-16:50**

Topic: Energy and environment

Moderator: Dr. Richard W. Barraclough, CloudBuy plc, United Kingdom

Location: Damfield

- Advanced power plants with very low CO<sub>2</sub> emissions (20 minutes) - Michela Vellini, University of Rome "Tor Vergata", Italy
- Synthesis and Characterization of Hyper-Crosslinked Polymers for Gas Storage and Separation Applications (20 minutes) - Giorgio Gatti, University of Eastern Piedmont, Italy
- Underground coal gasification with monitoring technique by using acoustic emission (20 minutes) - Akihiro Hamanaka, Muroran Institute of Technology, Japan
- Situation calculus approach to the oil products supply control system (20 minutes) - Ilya Moskovoy, Russian Plekhanov University of Economics, Russia

**15F 16th August 2016, Tuesday, 15:05-16:50**

Topic: Renewable energy technologies

Moderator: Prof. Herminio Martinez-Garcia, Technical University of Catalonia - BarcelonaTech (UPC), Spain

Location: Macleod

- Synthesis and characterization of metal sulfides for solar devices (20 minutes) - Massimo Innocenti, University of Florence, Italy
- Study on solar cell industry material selection process (20 minutes) - Chia-Chi Sun, Tamkang University, Taiwan
- Assessing the Impact of Solar PV on Domestic Electricity Consumption in Sydney: Exploring the Prospect of Rebound Effects (20 minutes) - Minfeng (Gary) Deng, Swinburne University of Technology, Melbourne, Australia

**20F 16th August 2016, Tuesday, 15:05-16:50**

Topic: Energy policy and economy

Moderator: Dr. Sinikka Mynttinen, Mikkeli University of Applied Sciences, Finland

Location: Kingsmills

- Policy pathways to boost carbon capture in the United States (20 minutes) - Derek Sylvan, New York University School of Law, United States
- Legal Aspects (Barriers) of Granting Compulsory Licenses for Clean Technologies in Light of WTO/TRIPS Rules: Promise or Mirage? (20 minutes) - Kuei-Jung Ni, National Chiao Tung University, Taiwan
- On Measuring the Effects of Fiscal Policy in Global Financial Crisis: Evidences from an Export-oriented Island Economy (20 minutes) - Jian-Fa Li, Chaoyang University of Technology, Taiwan
- Is There Any Evidence on the Existence of an Environmental Taxation Kuznets Curve? The Case of European Countries under Their Rule of Law Enforcement (20 minutes) - Davide Infante, University of Calabria, Italy
- Constructing a framework for National Drought Policy: The way forward in Mexico (20 minutes) - Felipe I. Arreguin Cortes, Mexican Institute of Water Technology (IMTA), Mexico

**24F 16th August 2016, Tuesday, 15:05-16:50**

Topic: Energy, water, and human survival

Moderator: Prof. William J Rowe, Medical University of Ohio at Toledo, United States

Location: Culcabock

- Natural resource management in the United States - Leadership in a world of limits (20 minutes) - W. Daniel Svedarsky, University of Minnesota, United States
- Estimation of rainwater harvesting reservoirs live in Sinjar area/Iraq (20 minutes) - Nadhir Al-Ansari, Lulea University of Technology, Sweden
- Load management in water supply structures for an improved integration of renewable energies (20 minutes) - Britta Zimmermann, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Germany
- Body - Water as a conducting system for electromagnetic information (20 minutes) - Rainer Fromknecht, Energetic Compensationtherapy, Germany
- Electrochemical synthesis of ammonia by a transition metal complex in ionic liquid under mild conditions (10 minutes) - Akira Katayama, Nagoya Institute of Technology, Japan

**04G** 17th August 2016, Wednesday, 9:30-11:15

Topic: Energy security

Moderator: Dr. Henry Tan, University of Aberdeen, United Kingdom

Location: Macleod

- The New Energy Era (30 minutes) - Moty Kuperberg, The International Energy Security Agency | Dynamic Shipping Services, Haifa, Israel
- Energy Security and the Terrorist Threat (20 minutes) - Emile A Nakhleh, IC Associate, United States
- Global Oil Glut and its Impact on Putin's Russia (20 minutes) - Yelena Tuzova, MUFG Union Bank, N.A., United States
- Financial Aspects of Turkey's Critical Energy Infrastructure: An Analysis within Geopolitics of Middle East (20 minutes) - Soner Gokten, Baskent University, Turkey

**07G** 17th August 2016, Wednesday, 9:30-11:15

Topic: Nuclear energy

Moderator: Dr. John Rawls, General Atomics, San Diego, United States

Location: Damfield

- Computer modelling of U1-xPuxO2 nuclear fuels to improve understanding of their properties (20 minutes) - Mark S.D. Read, University of Birmingham, United Kingdom
- Power to the People or Regulatory Ratcheting? Explaining the Success (or Failure) of Attempts to Site Commercial U.S. Nuclear Power Plants: 1954-1996 (20 minutes) - Daniel P. Aldrich, Northeastern University, United States
- Beta emitters measurement with plastic scintillator without organic waste (20 minutes) - Etsuko Furuta, Ochanomizu University, Tokyo, Japan

**12G** 17th August 2016, Wednesday, 9:30-11:15

Topic: New energy vehicles

Moderator: Geoff Southall, University of Liverpool, United Kingdom

Location: Culcabock

- Design of the reference cornering response for energy-efficient fully electric vehicles with multiple motors (20 minutes) - Basilio Lenzo, University of Surrey, United Kingdom

- Novel high-capacity positive electrode material for Li-ion battery using electrical vehicle (20 minutes) - Mitsuharu Tabuchi, National Institute of Advanced Industrial Science and Technology (AIST), Japan
- Charging scheduling of electric vehicles in community parking (20 minutes) - Ramiro Varela, University of Oviedo, Spain

**15G** 17th August 2016, Wednesday, 9:30-11:15

Topic: Renewable energy technologies

Moderator: Prof. Massimo Innocenti, University of Florence, Italy

Location: Kingsmills

- Capacitor-less linear-assisted DC-DC regulators as candidate topology for photovoltaic solar facilities (20 minutes) - Herminio Martinez-Garcia, Technical University of Catalonia - BarcelonaTech (UPC), Spain
- The performance improvement of the solar thermal conversion system in insufficient solar energy zones (20 minutes) - Yong DING, Chongqing University, China
- Optimization of a parabolic trough solar collector with twisted tape inserts for low enthalpy processes (20 minutes) - Monica Borunda, Electric Research Institute, Mexico

**24G** 17th August 2016, Wednesday, 9:30-11:15

Topic: Energy, water, and human survival

Moderator: Prof. Nadhir Al-Ansari, Lulea University of Technology, Sweden

Location: Burns

- Paradigm shift in agriculture: agro-ecological transition and ecological intensification. Two case studies in Reunion Island and Senegal (20 minutes) - Pascal Clouvel, CIRAD (Agricultural French Research Institute), France
- "Neil Armstrong Syndrome" and Impaired Thermoregulation (20 minutes) - William J Rowe, Medical University of Ohio at Toledo, United States
- Understanding the nexus between energy and water: A basis for continual sustainability of both sectors in South Africa (20 minutes) - Olusola Ololade, University of the Free State, South Africa

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