



THE INTERNATIONAL SYMPOSIUM ON ENERGY7

Conference Guide

Mercure Manchester Piccadilly Hotel
Manchester, UK

13-17 August 2017

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ROOM DIRECTORY

Central Park	Floor 4
Congress.....	Floor 2 Mezzanine
Hyde Park	Floor 4
International Suite.....	Floor 3
Park Avenue.....	Floor 4
Park Lane	Floor 4
Portland	Floor 1
Senate	Floor 2 Mezzanine
Victoria Park.....	Floor 4



WELCOME LETTER

Distinguished Delegates,

Welcome to Manchester and the Seventh International Symposium on Energy which this year combines two previous symposia on energy challenges, "Working on Small Scales" and "Towards a Big Picture", into one integrated event.

Manchester has long fostered deep connections to energy development on the world stage. As the first industrialized city, it witnessed the birth of modern environmental concerns. Here, Ernest Rutherford changed the world when he split the atom at the University of Manchester - a breakthrough which resulted in the development of nuclear power.

In the last twenty years, Manchester has been extensively modernized. It's connections to technology continue to this day with the development of the world's first stored-program computer and more recently as "The Home of Graphene" bringing advanced nanotechnology to many energy applications.

This symposium facilitates the multidisciplinary study of energy challenges from an international perspective and is becoming the leading conference in energy research. Energy7 is unique because it brings to together many disparate disciplines in technology, science, economics, ecology, including regulators, administrators, and policy-makers that do not typically meet. Our purpose is to gain a complete view of the world's energy challenges and to identify creative solutions and cross-disciplinary collaborations between the attendees of this summit.

We trust you will take this opportunity to foster many new relationships and collaborations. Feel free to contact the conference organiser or staffs if we can help at any time.

Welcome to Energy7 2017!

Best Regards,

A stylized, handwritten signature in black ink, likely belonging to Dr. Henry Tan.

Dr. Henry Tan
E7 Chairman
University of Aberdeen

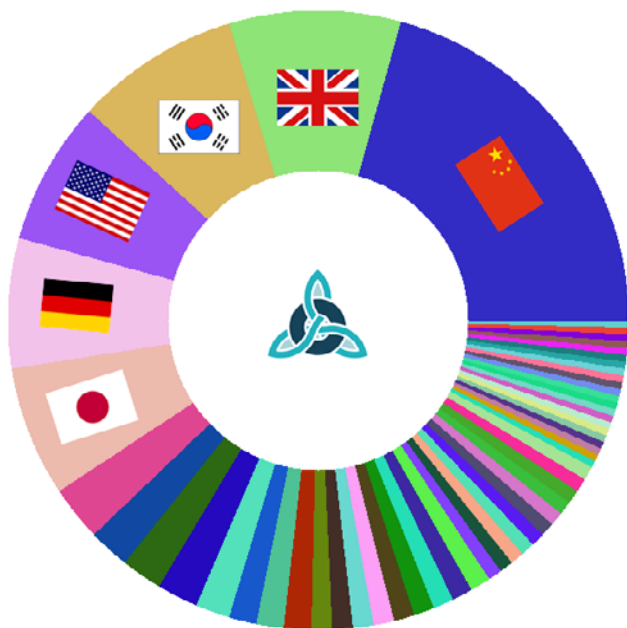
A stylized, handwritten signature in black ink, likely belonging to Prof. Ian Ferguson FRSA.

Prof. Ian Ferguson FRSA
E7 Co-Chairman
Missouri University of
Science and Technology

CONFERENCE SCHEDULE

Sunday, 13 August	DAY 1 Monday, 14 August	DAY 2 Tuesday, 15 August	DAY 3 Wednesday, 16 August	DAY 4 Thursday, 17 August
PRE-REGISTRATION 17:30-20:30 Third Floor Lobby	REGISTRATION 8:00 – 9:00	PRINCIPAL LECTURE 8:30-9:00 International Suite	PRINCIPAL LECTURE 8:30-9:00 International Suite	CLOSING LECTURE & AWARDS BANQUET* International Suite 9:00-10:00 Closing Lecture 10:00-10:15 Break 10:20-10:55 Awards Ceremony 10:55-11:00 Closing Remarks 11:00-12:20 Banquet Lunch
COMMITTEE MEETING 19:30-20:30 Hyde Park Room Floor 4	OPENING REMARKS 9:00 – 9:40 OPENING LECTURE 9:40-10:20 International Suite	BREAK 9:10-9:30	BREAK 9:10-9:30	
	BREAK 10:30-10:50	PARALLEL D 9:30-11:10	PARALLEL G 9:30-11:10	
	PARALLEL A 10:50-12:30	BREAK 11:10-11:30	BREAK 11:10-11:30	
	CATERED LUNCH 12:30-13:50	PARALLEL E 11:30-13:10	PARALLEL H 11:30-13:10	
	PARALLEL B 13:50-15:30	CATERED LUNCH 13:10-14:30	CATERED LUNCH 13:10-14:30	CONFERENCE TOUR* 12:30 - 18:30 *Registered participants only. Bus transportation will be provided. 12:30 Depart Hotel 14:00 Chatsworth House Group Photo 17:00 Meet in the Car Park For Return Journey 18:30 Arrive back at Mercure Manchester Piccadilly Hotel
	BREAK 15:30-15:50	PRINCIPAL LECTURE 14:30-15:00 International Suite	PRINCIPAL LECTURE 14:30-15:00 International Suite	
	PARALLEL C 15:50-17:30	BREAK 15:10-15:30	BREAK 15:10-15:30	
	WELCOME RECEPTION 17:30-19:30 International Suite 18:00 Group Photo 18:30 Poster Session	PARALLEL F 15:30-17:10	PARALLEL I 15:30-17:10	

NATIONAL DISTRIBUTION OF DELEGATES



56 Countries and Regions Represented

- » China
- » United Kingdom
- » South Korea
- » United States
- » Germany
- » Japan
- » India
- » Austria
- » Kuwait
- » Poland
- » Taiwan
- » Belgium
- » Brazil
- » Czech Republic
- » Canada
- » France
- » Hungary
- » Romania
- » Russian Federation
- » Saudi Arabia
- » South Africa
- » Spain
- » Sweden
- » Australia
- » Estonia
- » Iran
- » Israel
- » Mexico
- » Norway
- » Portugal
- » Switzerland
- » Thailand
- » Turkey
- » United Arab Emirates
- » Cambodia
- » Chile
- » Costa Rica
- » Denmark
- » Finland
- » Ghana
- » Indonesia
- » Iraq
- » Ireland
- » Italy
- » Jordan
- » Kazakhstan
- » Netherlands
- » Nigeria
- » Oman
- » Pakistan
- » Paraguay
- » Philippines
- » Qatar
- » Singapore
- » Slovenia
- » Trinidad and Tobago

IMPORTANT POINTS

Getting Here

Address:

Mercure Manchester Piccadilly Hotel
Portland St, Manchester M1 4PH, UK

Tel: 0844 815 9024

Local Taxi Services:

- » 0161 228 7878 (Street Cars Manchester)
- » 0161 850 0500 (All-United Cars)
- » 0161 864 1212 (Manchester Airport Taxis)

Conference Attire

All attendees are asked to wear business casual attire for the duration of the conference.

Identification

All delegates must wear their lanyard name badge at all times. Your badge is your ticket and therefore gives you access to all sessions, lunch catering and the social programme.

Badges are strictly non-transferable. Please ensure you keep these safe. If you cannot provide a badge or identification to verify your booking then you may be asked to leave the event.

Certificate Of Attendance

All delegates had the opportunity to request a certificate during the online booking process (see your registration packet). If you did not request a certificate during booking, an electronic version can be sent to you after the conference. Please notify the organisers at the Information Desk if you require an electronic certificate.

Session Etiquette

Speakers: During the 20-minute break before your session slot, find your presentation room and upload your presentation files to the provided laptop. **Please ensure that you remain within your timeslot for your presentation and the allowed time for Q&A.** It is essential that the conference runs on time.

Moderators: Please arrive for your session at least 5 minutes in advance so you are prepared and ready to begin the session on time. Please complete the Moderator's Report Form which can be picked up from the information desk, and return it back after the session is over.

Audiences: Please note that the use of photography during presentations is strictly forbidden. **It is unethical to take photographs without consent**

OPENING PLENARY LECTURE



Small Data - Big Impact

Prof. Peter Cochrane OBE

Qatar Computing Research Institute, Doha, Qatar

An Advisor to The Qatar Computing Research Institute, consultant and academic, Peter is a former Head of R&D and CTO at BT, visiting Prof for the Public Understanding of Science at Bristol. He is currently a visiting Prof to Suffolk & Hertfordshire Universities. As an entrepreneur Peter started over 20 companies and published over 200 papers, 4 books and 3 patents. His contributions to R&D and international telecommunications saw him receive an OBE, Prince Philip and IEE Millennium Medals along with numerous honorary doctorates.

PRINCIPAL LECTURES



The Global Energy Landscape Beyond The Here And Now

Dr. Hans-Wilhelm Schiffer

*Executive Chair, World Energy Resources Programme
World Energy Council, London*

Dr. Hans-Wilhelm Schiffer is the Executive Chair of the World Energy Resources programme of the World Energy Council, London. He spent more than 20 years working for the RWE group in Essen, Germany and currently serves as a consultant to the Executive Board on issues concerning international energy policy.



Interfacial Science and Engineering of Highly Surfaceous Carbons

Prof. Katsumi Kaneko

Shinshu University, Japan

Katsumi Kaneko is a distinguished professor of the Center for Energy and Environmental Science at Shinshu University. He has published more than 490 papers in international journals and received awards from the Chemical Society of Japan and American Carbon Society. IN addition to his many accolades, he is a fellow of Royal Society of Chemistry, International Adsorption Society, and Chemical Society of Japan.



A Statistics Modeling Approach For The Optimization Of Thin Film Photovoltaic Devices

Prof. Rodrigo Ferrão de Paiva Martins

Uninova / CEMOP, Portugal

Prof. Rodrigo Ferrão de Paiva Martins has been involved in pioneering European research on amorphous silicon semiconductors and passive & active oxides, the so-called transparent electronics. He is also one of the inventors of "paper electronics." He has published more than 720 scientific papers, two books and a set of 22 book chapters; holds 42 patents and 17 pending patents in various fields. He is the Vice president of the European Academy of Sciences.



Digital, Flexible, Sustainable: The Power Market Of The Future

Helen Steiniger

Advisor to the CEOs, Next Kraftwerke GmbH, Germany

Helen Steiniger's research focus is on the development of electricity markets and the opportunities of digital technologies for building a sustainable energy system. Ms. Steiniger holds a M.Sc. in Environmental Studies and Sustainability Science from Lund University, Sweden, and a B.Sc. in Business Administration from the University of Mannheim, Germany

CLOSING PLENARY LECTURE



2017 Perspective of US Nanotechnology & Commercialization

Charlie Gause

Co-Founder & CEO at Technology Development Group LLC, USA

Charles Gause founded AxNano to leverage over 25 years of technology development and commercialization experience with an emphasis in nanotechnology. AxNano's collaborative business model leverages relationships with research institutes such as the Joint School of Nanoscience and Nanoengineering (NC A&T SU & UNCG). Currently, AxNano utilizes early stage innovative technologies for the \$60 billion environmental market to decrease ground contamination in situ - restoring our planets' natural resources.



of a speaker (you may be asked to delete images). Please respect the speakers and limit your photos to before/after the talks.

Slide Copyright: All slides presented are the sole property of each speaker and cannot be copied or redistributed without permission.

Presentation & Technology Tips

Each conference room is equipped with a laptop, projector, and clicker for controlling the PowerPoint presentations.

(1) To access the Microsoft suite, press the windows key (lower left on the keyboard). A start menu will appear where you can click the program you need. Each laptop/projector will be pre-set to the "extend" display setting. This means the laptop will function as one screen and the projector will function as another. When you open a PowerPoint presentation, it will only appear on the laptop screen.

(2a) View the presentation in full screen mode in order to utilize both screens. Choose full screen mode within the slideshow menu or by pressing the F5 key on the keyboard.

(2b) If you are using an Adobe PDF presentation, move the whole PDF window onto the 2nd screen, which is the projector. This is done by clicking and holding onto the title bar of the window and dragging it to the right until it appears onto the projector screen.

Please Note:

- » Our computers are not connected to the Internet and are unable to do so during presentations.
- » All presentations and data left on the Laptops after each day WILL be erased from the computer. However we strongly encourage erasing all data at the end of your session.

Photography Consent

There will be an official photographer during the conference. If you do not wish to have your photograph taken, please notify the organisers at the Information Table.

Smoking Policy

In the UK, smoking anywhere inside a building is forbidden. Please smoke outside at a good distance from the hotel entrance and make use of disposal areas for cigarettes.

SCHEDULE OVERVIEW

Opening Remarks & Lecture

The Energy7 Opening Remarks will be delivered by Dr. Henry Tan in the International Suite at 9:00. This will be followed by the Opening Plenary Lecture by Professor Peter Cochrane OBE.

Lunch

A lunch buffet will be served each day for all Energy7 Participants. Your name badge is your lunch ticket for the duration of the event. Please retain your name badge for all four days.

Welcome Reception & A1 Poster Session

We welcome you to the conference with a reception in the International Suite on Day 1 at 18:30 where you can relax and network with your fellow delegates. Light appetizers, tea and coffee will be provided alongside a cash bar for additional beverages. All registration packages are welcome to attend.

An official Energy7 group photo will be taken at 18:00 for all who wish to join. In addition, the poster session will begin at 18:30. Please take the opportunity to view these as part of your evening.

Refunds

All refund payments and/or reimbursements will be issued at the conference information table during the hours below:

- » Tues. Aug 15, 13:00 - 17:00
- » Wed. Aug 16, 13:00 - 17:00

Principal Lectures

The first Principal Lecture will be delivered at 8:30am on Day 2 by Dr. Hans-Wilhelm Schiffer. The second Principal Lecture will be given by Professor Katsumi Kaneko on Day 2 at 14:30. The third Principal Lecture will be delivered at 8:30 on Day 3 by Professor Rodrigo Ferrão de Paiva Martins. The fourth Principal Lecture will be given by Ms. Helen Steiniger on Day 3 at 14:30. All principal lectures will be located in the International Suite

Closing Lecture & Awards Banquet

The Closing Lecture is by Mr. Charlie Gause and Awards Banquet will take place at 10:20 on Day 4 in the International Suite.

CONFERENCE TOUR

For delegates attending the Chatsworth House tour, transportation to and from the Castle Trip will be provided on Day 4. **Meet in the front car park at 12:15** to board the coaches. We will **depart at 12:30 sharp, so please do not be late**. Your badge is your ticket and must be worn always during the trip. If you are unwell and/or unable to attend the tour, please notify the organisers at the Information Desk.



Destination: Chatsworth House

Chatsworth House is a stately home in Derbyshire, England which is the seat of the Duke of Devonshire and home to the Cavendish family since 1549. The house, set in expansive parkland and backed by wooded, rocky hills rising to heather moorland, contains an important collection of paintings, furniture, Old Master drawings, neoclassical sculptures, books and other artefacts. Chatsworth has been selected as the United Kingdom's favourite country house several times. The property features a tour of the house, 105-acre garden, farmyard and playground.

Return Journey

Please board the coaches for our departure at 17:00. The coaches will depart Chatsworth House at 17:15 and return to the conference hotel by 18:30.

PROCEEDINGS

All presentation abstracts and speaker bios are available on our website:

<http://energy7.nscj.co.uk/Sessions.html>

Quality papers will be selected for publication in the open access Journal of Energy Challenges and Mechanics:

<http://www.nscj.co.uk/JECM>

ORGANISERS

Scientific Committee

Dr Henry Tan, UK, Chairman
Prof. Ian Ferguson FRSA, USA, Co-chairman
Prof. Bingqing Wei, USA
Prof. Dr. Karl Ulrich Kainer, Germany
Prof. Pedram Fatehi, Canada
Prof. Guang Feng, China
Dr. Mark S D Read FRSC, United Kingdom
Mr. Moty Kuperberg, Israel
Mr. Ibrahim Fahmy, UAE
Dr. Jonathan Williamson, USA
Ms. Jingchao Zhang, Japan
Dr. Shen Yu, China
Prof. Gülgün Kayakutlu, Turkey
Dr. Alhussein Albarbar, United Kingdom

Organiser

North Sea Conference & Journal Ltd
Aberdeen, Scotland, UK
Emergency Phone: +44 (0)7898 700203

THANK YOU

To all the delegates and committee members of Energy7: We thank you for your support! It is only through your dedication, commitment and tireless work that this conference could be a success.

CONFERENCE SONG

We Are The Light

Music & Lyrics by Nils Elders

We'll find our destiny
We were born in the stars
This opportunity to know who we are
Let the world know that we can make a change this year
Let time show that we made a difference here

When we feel that we've got a lot to prove
Take a look at everyone around you
Never give up, together we're strong
Just see how far we've come

We are the light
bright like the sun
We are the light
that shines for everyone
We are the sparks that inspire
The flames that keep you right
So let's stand together
We are the light

An idea is a seedling
that you can sow
Determination is a sun beam
That can help it to grow

Let the world know that our intention's clear
Let time show that we made a difference here

When we feel that we've got a lot to prove
Take a look at everyone around you
Never give up, together we're strong
Just see how far we've come

We are the light
that's bright like the sun
We are the light
that shines for everyone
We are the sparks that inspire
The flames that keep us right
So let's stand together
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We are the light
bright like the sun
We are the light
that shines for everyone
We are the sparks that inspire
The flames that keep us right
So let's stand together
We are the light

yeah Together we stand
Together we stand
Together we stand

SESSION TOPICS

The following topics are arranged into Parallel Sessions:

Aachen	Energy policy
Argonne	Energy storage
Arlington	Techniques beneficial to the energy sector
Beijing	China's energy and environmental challenges
Berlin	Climate change and energy
Cambridge	Nano energy
Dallas	Energy catalyst
Dublin	Heating and cooling
Edinburgh	Energy and environment
Haifa	Energy security
Hamburg	Energy economy
Hiroshima	Energy and superconductivity
Houston	Oil and Gas
Juelich	Transformation of energy systems
Liverpool	Energy harvesting
Manchester	Nuclear energy
Oxford	Energy efficiency
Paris	Renewable integration and power distribution
Rutgers	Porous materials and structures for energy applications
Seoul	Bioenergy
Shanghai	Safety and integrity management for the energy industry
Spokane	Optimizing, greening to smarting
Uppsala	Environmental impact of materials
Warsaw	Dealing with waste
Washington	Biomass conversion technologies
Waterloo	Nexus of water systems, food and energy
Windsor	Fuel cells
Yale	Sustainable energy, transportation and urban systems

PLAN YOUR SESSIONS

Use this section to plan your participation at Energy7. Note which sessions you wish to attend or keep track of new colleagues.

My Session Details

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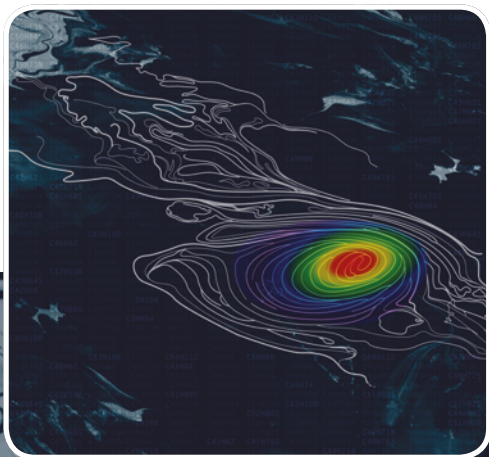
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Session of Interest:

NOTES

NOTES



ENERGY7 RESEARCH IMAGE COMPETITION WINNER

“Petroleomics: Petroleum and its
Molecular Fingerprint”

University of Warwick, UK

Authors: Diana Catalina Palacio Lozano

Mary Thomas

Dr. Mark P. Barrow

Designer: Juan Carlos Mosquera



North Sea
Conference & Journal

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