



FCH2 2015
TECHNICAL CONFERENCE

FUEL CELL & HYDROGEN TECHNICAL CONFERENCE

19TH - 21ST MAY 2015

**MILLENNIUM POINT
BIRMINGHAM, UK**

THE UK PLATFORM FOR FUEL CELL & HYDROGEN RESEARCHERS AND INDUSTRY
TO MEET AND DISCUSS NEW DEVELOPMENTS, TRENDS AND DEPLOYMENT ISSUES.

 **FCH2 CONFERENCE**

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**UNIVERSITY OF
BIRMINGHAM**

H₂FC SUPERGEN
THE HYDROGEN AND FUEL CELL RESEARCH HUB



Fuel Cell and Hydrogen Technical Conference

19th -21st May 2015 – Millennium Point, Birmingham, B4 7XG

Conference Chair

Prof. Robert Steinberger-Wilckens, *University of Birmingham*



Scientific and Organising Committee

Prof. Robert Steinberger-Wilckens, *University of Birmingham*

Dr. Aman Dhir, *University of Birmingham*



Dr. Surbhi Sharma, *University of Birmingham*



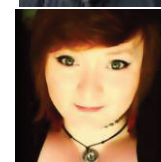
Dr. Sukhdev Gill, *University of Birmingham*



Dr. Neil Rees, *University of Birmingham*



Sophie Archer, *University of Birmingham*



John Hooper, *University of Birmingham*



Keynotes – Giant Screen Theatre		
09:00 – 09:15	Welcome & Conference Opening	
09:15 – 09:45	Celia Greaves - UK HFCA	Opportunities and Trends in the UK Hydrogen and Fuel Cells arena
09:45 – 10:15	David Hart - E4tech	A Review of the Fuel Cell Industry in 2014 and a Prognosis for 2015
10:15 – 10:45	Robert Evans - CENEX	Hydrogen Vehicle Roll-Out Across the UK
10:45 – 11:15	Coffee Break	
11:15 – 11:45	Naveed Akhtar - AFC Energy	Development and Operation of Alkaline Fuel Cell Stacks at AFC Energy
11:45 – 12:15	Michael Priestnall - Innovate UK	Fuel Cell Portfolio
12:15 – 12:45	Rolf Schicke - Hycells UG (tbc)	Novel Hydrogen Storage Technologies
12:45 – 14:00	Lunch and Poster Session	
	Fuel Cells (1) – Thinktank Theatre, 3rd Floor	Materials & Processes (1) – Lodge room, 3rd Floor
14:00 – 14:30	Charles Morgan - Morgan Motor Company	Gareth Hinds - National Physical Laboratory In Situ Diagnostics for PEM Fuel Cells and Electrolysers
14:30 – 15:00	Simon Mylius - Arcola Energy	Joachim Kroemer - BORIT New Options for Interconnects and Bipolar Plates
15:00 – 15:30	John Jostins - Microcab	Pagona Papakonstantinou - University of Ulster 2D Electrocatalysts for Oxygen and Hydrogen involving Energy Conversion Reactions
15:30 – 16:00	Coffee Break	
	Fuel Cells (2) – Thinktank Theatre, 3rd Floor	MMLCR=SOFC Session – Lodge room, 3rd Floor
16:00 – 16:30	Christian Engelke - Viessmann	MicroCHP Field Trials
16:30 – 17:00	Richard Morris - Mira	Recent Hydrogen Activities at MIRA Public Session
17:00 – 17:30	Ramaiyan Kannan - University of Birmingham	FePt Supported on Functionalized Reduced Graphene Oxide for Catalyst Application towards Oxygen Reduction Reaction in PEFC
17:30 – 18:00	Poster Session	18:00

19th MAY 2015



Hydrogen– Brindley room, 3rd Floor		
Tristan Kretschmer - McPhy	Electrolyser Development at McPhy	
Emma Guthrie - Air Products	Hydrogen Deployment and Infrastructure	
Simon Graham - Commercial Group	Incorporating Hydrogen into Fleet Operations	
Hydrogen and Analysis – Brindley room, 3rd Floor		
Paul Dodds - University College London	Green Hydrogen	
Quentin Meyer - University College London	Hydro-Electro-Thermal Analysis of Air-Cooled Open Cathode Fuel Cells: Combined Localised Current Density, Temperature and Neutron Mapping	
Rui Chen - Loughborough University	Polymer Electrolyte Fuel Cell Stacks Performance Analysis Using Electrochemical Impedance Spectroscopy	
End Of Day 1		

20th MAY 2015

Millennium Point



SUPERGEN HUB – Brindley room

Funding Opportunities & Networks – Giant Screen Theatre			
09:00 – 09:30	Oliver Philips - EPSRC	EPSRC Energy Programme & Funding Opportunities	
9:30 – 10:00	Amrit Chandan - Blue Vine Consultants	Fuel Cell Patent & Industry Overview 2015	
10:00 – 10:30	Zeynep Kurban – SUPERGEN HUB	SUPERGEN: Driving UK's hydrogen & Fuel Cell Research Forward	
10:30 – 11:00	Coffee Break		
Socio-Economics – Giant Screen Theatre			
11:00 – 11:30	Eric Shiu - UoB Business School	Innovation Management	
11:45 – 12:15	Richard Baines - BCHA	“Customers View” of What We Want from Static H2FC CHP Systems	
12:15 – 12:45	Sophie Archer - University of Birmingham	Understanding the Environmental Sustainability of Hydrogen from Biomass for Energy Uses – a Palm Oil Biodiesel Case Study	
12:45 – 14:00	Lunch and Poster Session		
Project Showcase (1) – Thinktank Theatre, 3rd Floor		Materials & Processes (2) – Lodge room, 3rd Floor	
14:00 – 14:30	Kate Jerney - Research & Innovation Services (UoB)	University - Business Collaboration and Funding	Shanwen Tao - University of Strathclyde
	Alvaro Monteiro Fernandes - TU Delft	Our Car as a Power Plant	Study on Direct Flame Solid Oxide Fuel Cell using Flat Burner and Ethylene Flame
14:30 – 15:00			Daping He – University of Bath
15:00 – 15:30	Lisa Nyquist - McCamley	McCamley:Aberdeen Wind to Hydrogen Project	Intrinsically Porous Polymer Protection Improves Durability of Pt/C Catalyst
			Kranthi Kumar Maniam - University of Manchester
15:30 – 16:00	Coffee Break		A Biomass Based Activated Carbon as the Cathode Gas Diffusion Layer in Low Temperature Polymer Electrolyte Fuel Cells
Project Showcase (2) – Thinktank Theatre, 3rd Floor		Hydrogen Production & Storage – Lodge room, 3rd Floor	
16:00 – 16:30	Shangfeng Du & Mark Worall - UoB & UoN	Durable Low Temperature Solid Oxide Fuel Cell Tri-Generation System for Low Carbon Buildings	Dennis Gammer - ETI
	Mussawar Ahmad - WMG	Development of a PEM Fuel Cell Ontology to Facilitate Assembly Line Generation using a Semantic Approach	Storage, Combustion and System Benefits of H2 in Power
16:30 – 17:00			Naser Al-Mufachi - University of Birmingham
17:00 – 17:30	Jong-Eun Hong - University of Birmingham	SCORED:Properties of Manganese Cobalt Spinel Protective Layers Prepared by Wet Powder Spray Method for Metallic Interconnect of Solid Oxide Fuel Cells	Effects of Palladium Thin Films on the Hydrogen Permeability of Pd-Cu Alloy Membranes
			Muhammad Ibadurrohman - Imperial College London
17:30 – 18:00	Poster Session and Networking	19.00	Morphological Modification of TiO2 Thin Films as Highly Efficient Photoanodes in Photoelectrochemical Hydrogen Production Systems
			Conference Dinner “Caxton House”
			21.45

Introduction

White Paper
Energy Security

Findings 1

Findings 2

KnowHy Session – Brindley room

Closed Private Session

21st MAY 2015

Millennium Point

Fuel Cells (4) – Thinktank Theatre, 3rd Floor	
09:00 – 09:30	Trevor Davies - University of Chester
Facilities – Thinktank Theatre, 3rd Floor	
09:30 – 10:00	Katie Dryden-Holt - RSC Funding
10:00 – 10:30	Kellye Curtis - University of Leeds
10:30 – 11:00	<i>Coffee Break</i>
Public Outreach – Thinktank Theatre, 3rd Floor	
11:00 – 11:30	Jon Wood
11:30 – 12:00	Aimee Jackson James Walker Laura Allerston
12:00 – 12:30	University of Birmingham
12:30 – 14:00	<i>Lunch and Poster Session</i>
Student Projects (3) – Thinktank Theatre, 3rd Floor	
14:00 – 14:30	Sean Goodwin - University of Nottingham
14:30 – 15:00	Vikrant Venkataraman - University of Birmingham
15:00 – 15:30	<i>Student Poster Awards, Presentation Awards & Close</i>

Student Projects (1) – Lodge room, 3rd Floor	
Gan-Zuei Chang - Oxford University	In situ ATR-IR spectroelectrochemical study of the deactivation of Pd/C catalysts used in DFAFC by common impurities found in formic acid
Kathrin Preuss - Queen Mary University of London	Pt-free Electro-catalysts for the Oxygen Reduction Reaction in Fuel Cells
Student Projects (2) – Lodge room, 3rd Floor	
Shiela Samsatli - Imperial College London	Optimal Design and Operation of Integrated Wind-Electricity-Hydrogen Networks for Decarbonising the Domestic Transport Sector in Great Britain
Ashley Fly - Loughborough University	Model Based Investigation of Liquid Water Addition Strategies for Evaporatively Cooled PEM Fuel Cells
Harvind Arjun Rai - UoB	Steady-state Multiplicity in a Solid Oxide Fuel Cell under a Constant Ohmic Load Operation
Student Projects (4) – Lodge room, 3rd Floor	
Yaxiang Lu - University of Birmingham	PEFC Cathodes Based on PdPt Nanodendrites
Lina Troskalina - University of Birmingham	Improving Performance of Anode Supported SOFC Operating on Biogas using Sn-infiltrated NiYSZ Anode
Conference Ends	
15:30	15.30

Exhibition & Equipment Demo

Exhibition & Equipment Demo

*Brindley Room
3rd Floor*

Exhibitor Pitch – Brindley room

**Technical
Equipment
Presentations**

MKS Instruments
Cache Instruments
Bronkhorst
Metrohm
Blue Scientific
Forresters
APC

Equipment Demonstration

**Hitachi
Table Top
SEM
Equipment
Demo**

Exhibition &
Equipment Demo

*Brindley Room
3rd Floor*