

Hyceltec 2017 Detailed Scientific Programme

Monday, June 19	
17:00	Registration & Welcome Reception
Tuesday Morning, June 20	
08:30	Opening Ceremony
09:00	PL1: Claes-Göran Granqvist – Chair: Verónica Bermudez Electrochromics and Thermochromics for Glazing: Towards a New Architecture.
Session A – FCs (Room 105) Chair: Felix Barreras + Ben Davies	
10:00	K1_A: Ben Davies Investigation of PEMFC fault diagnosis with consideration of sensor reliability.
10:30	O1_A: Pauli Koski Development of reformed ethanol fuel cell system for backup and off-grid applications - Initial testing of the subsystems.
10:50	O2_A: Francesco Sergi Design and test of a hybrid fuel cell/battery generator for telecom applications.
Coffee Break	
Session A – FCs (Room 105) Chair: Manuel Alvarez-Guerra + Emilia Morallon	
11:40	O3_A: Felix Barreras Remodelling of a commercial plug-in battery electric vehicle to a hybrid configuration with PEM fuel cell.
12:00	O4_A: Jordi Renau Towards an optimal design of a fuel cell-based power plant for a high altitude unmanned aerial vehicle.
12:20	O5_A: Arianna Baldinelli On-farm biogas-to-electricity conversion through Solid Oxide Fuel Cells: a matter of durability and profitability.
12:40	K2_A: Manuel Alvarez-Guerra CO ₂ to useful products: Electrochemical processes for carbon utilisation.
Session B: Batteries (Room 022)- Chair: Claes-Göran Granqvist + Verónica Bermudez	
10:00	K1_B: Luís Pereira Design and synthesis of WO ₃ nanoparticles for electrochromic and sensing devices.
10:30	O1_B: Fabiola Pantò Electro-spun cobalt oxide fibres as anode material for sodium-ion rechargeable batteries.
10:50	O2_B: Raquel Alves Electrolytes containing chitosan and samarium triflate for application in ECDs.
Session B: Batteries (Room 022)- Chair: Luís Pereira + Justo Lobato	
11:40	K2_B: Justo Lobato Application of RFBs for sustainable removal of pollutants by electrocoagulation.
12:10	O3_B: Perla Alday Development of a paper-based redox flow battery with quasi-steady capillary flow-through electrodes.
12:30	O4_B: Alessandra di Blasi Electrospun urchin-like V ₂ O ₅ -CNF composite nanostructure for vanadium redox flow battery.
12:50	O5_B: Arun Meena High entropy oxides as new promising materials for improved energy storage application.

Lunch			
Tuesday Afternoon, June 20			
14:30	PL2: Pedro Gómez-Romero Chair: Paulo Ferreira New Old Trends in Electrochemical Energy Storage: From Batteries to Supercapacitors.		
Session A – FCs (Room 105) Chair: Qiong Cai + Ángel Rodríguez Pierna		Session B: Batteries (Room 022) Chair: Paulo Ferreira + Pedro Gómez-Romero	
15:30	K3_A Qiong Cai Three-dimensional lattice-Boltzmann model for liquid water transport and oxygen diffusion in cathode electrode of PEM fuel cell with electrochemical reaction.	15:30	K3_B: Paulo Ferreira Understanding the Surface of LiMn ₂ O ₄ Spinel Cathodes with Aberration-Corrected HAADF STEM and EELS KNB3.
16:00	O6_A: Pierre Carrère Liquid Water in Gas Diffusion Layer of PEMFC : Insights from Pore Network Simulations.	16:00	O6_B: Jadra Mosa Thin-film Li ₄ Ti ₅ O ₁₂ Electrodes by Sol-Gel for Li-ion Microbatteries: influence of Mesoporosity in the Electrochemical behaviour.
16:20	O7_A: Oscar Santiago Concentration and polarization curve models for implantable glucose fuel cells.	16:20	O7_B: Qiong Cai Materials design for sodium ion batteries using molecular simulations.
16:40	O8_A: Uxía Reija Modelling a High Temperature PEM Fuel Cell focusing on its thermal behaviour.	16:40	O8_B: Mazharul Islam Ion Diffusion in Solid State Materials: Insights from Theory.
17:00	O9_A: Ángel Rodríguez Pierna Effect of carbon support on electrocatalytic performance in PEMFC.	17:00	O9_B: ChangHee Lee A Novel Superconcentrated Aqueous Electrolyte for Calcium Secondary Batteries.
		17:20	O10_B: Luís Branco Electrochromic devices based on Functional Ionic Liquids.
Poster Session			

Wednesday Morning, June 21			
08:30	PL3: Marshall C. Smart Chair: Daniel Abraham The Use of Lithium-Ion Batteries on NASA JPL's Mars Rovers		
Session A – FCs (Room 105) Chair: Stefania Specchia + Marivi Martinez		Session B: Batteries (Room 022) Chair: Marshall C. Smart + Daniel Abraham	
09:30	K4_A: Frano Barbir Diagnostics of fuel cells degradation.	09:30	K4_B: Daniel Abraham Electrode cross-talk during electrochemical cycling of lithium-ion cells.
10:00	O10_A: Renate Hiesgen Ionomer layers in fuel cell electrodes: thickness and conductivity measured by Atomic Force Microscopy.	10:00	O11_B: Patrick Lagonotte New insight of capacitance (F) for electrochemical capacitors and batteries.
10:20	O11_A: Ivan Khalakhan Deterioration of the Pt-Ni fuel cell catalyst prepared by magnetron sputtering during accelerated durability test studied by EC-AFM.	10:20	O12_B: Vincenzo Baglio Oxygen electrode based on cobalt-decorated electrospun carbon nanofibers for alkaline metal-air batteries.
10:40	O12_A: Florencio Fernandez Methodology to investigate the corrosion resistance of Ni-coatings on simulated cathodic operating environment in PEMFCs using EIS.	10:40	O13_B: Horacio Corti Transport of Li ⁺ and O ₂ in glymes in relation to lithium-air batteries.
Coffee Break			
Session A – FCs (Room 105) Eva Chinarro + Horacio Corti		Session C: Hydrogen (Room 022) Chair: Jose Angel Peña + Alfredo Ortiz	
11:30	K5_A: Stefania Specchia M-M'-N-C (M, M' = Fe, Co, Cu, Zn) catalysts for oxygen reduction reaction derived from transition metal phthalocyanines: on the beneficial effects of using two metals.	11:30	K1_C: Narcis Homs H ₂ production from acetone steam reforming over Ni/ZnO-based catalysts; the effect of CeO ₂ addition.
12:00	O13_A: Marivi Martinez Investigation of graphene-composites Ti-based non-noble catalysts for the electrochemical reduction and evolution of oxygen.	12:00	O1_C: Kepa Bizkarra Steam reforming of a model bio oil/bio glycerol mixture using different nickel based silico aluminates.
12:20	O14_A: Virginija Kepenienė Comparison of electrocatalytic activity of the Pt and PtCo catalysts deposited on the CeO ₂ /graphene and Nb ₂ O ₅ /graphene surfaces towards ethanol oxidation and oxygen reduction reactions.	12:20	O2_C: Javier da Costa Serra Catalysts based on Co-Birnessite and Co-Todorokite for the efficient production of hydrogen by bioethanol steam reforming.
12:40	O15_A: Alejandro Ortega Pd nanoparticles supported on carbon materials as electrocatalyst for oxygen reduction reaction.	12:40	O3_C: Pilar Ramírez de la Piscina An in-situ DRIFTS-MS study of the photocatalytic transformation of ethanol (aq) vapour over Pt/TiO ₂ -based catalysts; the effect of Ga ₂ O ₃ component on the photoreforming performance to H ₂ .
Lunch			

Wednesday Afternoon, June 21			
14:30	PL4: Andreas Friedrich Chair: Elena Pastor Technical Electrocatalysis for Electrolysers: Addressing the Challenges of High Activity, Stability and Cost Effectiveness		
Session A – FCs (Room 105) Chair: Renate Hiesgen + Elena Pastor		Session C: Hydrogen (Room 022) Chair: Narcis Homs + Jaime Soler	
15:30	K6_A: Maria Retuerto Organic Framework Non-Precious Metal Fe/N/C Catalysts with Marked Activity for the ORR in Alkaline Media.	15:30	K2_C: Jose Angel Peña High purity hydrogen from biogas via SIP: preventing reactor coke clogging.
16:00	O16_A: Atsushi Gabe Key factors improving oxygen reduction reaction activity in cobalt nanoparticles modified carbon nanotubes.	16:00	O4_C: Katarzyna Siwek Hydrogen evolution on nanostructured nickel foams with different morphologies.
16:20	O17_A: Juan Calderon Oxygen reduction reaction on Pt-Pd catalysts supported on carbon xerogels: effect of the synthesis method.	16:20	O5_C: Consuelo Alvarez Cermets (Ni) _{0.1} (Ce _{0.9} B _{0.1} O _{1.95}) _{0.9} (B = Gd, La, Nd and Sm) prepared by solution combustion method as catalysts for hydrogen production by Partial Oxidation of Methane.
16:40	O18_A: Miguel A. Peña BaNiO ₂ : An oxide with elevate electrocatalytic activity to oxygen evolution reaction in alkaline media.	16:40	O6_C: Jaime Soler Hydrogen production by dry reforming of biogas and separation by metallic membranes in a TZFB reactor.
Coffee Break			
Session A – FCs (Room 105) Chair: Maria Retuerto + Miguel A. Peña		Session C: Hydrogen (Room 022) Chair: José Luis Viviente + Duncan Fagg	
17:30	O19_A: Maria Retuerto Perovskite oxides with improved oxygen evolution activity and stability in acidic media.	17:30	O7_C: Raquel Busqué Experimental analysis and numerical modeling of metal hydride desorption process for hydrogen storage.
18:00	K7_A: Elena Pastor New insights on the methane formation during the ethanol oxidation reaction.	17:50	O8_C: Jordi Renau An energy management strategy for a combined heat and power micro-installation design based on a high temperature PEM fuel cell with on-site renewable hydrogen production.
18:20	O20_A: Jorge Torrero IRRAS study of ethanol electrooxidation in alkaline media.	18:10	O9_C: Zouhair Boukha Catalytic properties of cobalt-promoted Pd/HAP catalyst for CO Preferential Oxidation in H ₂ -rich Stream and Water-Gas Shift Processes.
18:40	O21_A: Lucía Santos Composite cathodes for Solid Oxide Fuel cells prepared by spray-pyrolysis.	18:30	O10_C: Carmen Rangel Photocatalytic Hydrogen generation using Pt-Titania-reduced Graphene oxide nanocomposites.

Session A – FCs (Room 105)		Session A – FCs (Room 022)	
19:00	O22_A: Antony Thomas New Methodology based on Electrochemical Noise Analysis applied to PEMFC.	18:50	O23_A: Karmele Vidal Effect of the synthesis conditions on the properties of an iron perovskite series.
19:20	O24_A: Suwaphid Ochin xPtyPd Electrodeposited on Manganese Dioxide Modified Carbon Nanotubes for Methanol Oxidation.	19:10	O25_A: Aritza Wain-Martin Effect of doping level x and fuel on glycine-nitrate combustion synthesis of (La,Nd) _{1-x} (Sr,Ca) _x Cr _{0.9} Ni _{0.1} O ₃ (x<=0.25) perovskites as anode materials for SOFCs.
19:40	O26_A: Bruno Ameduri Revisiting the Radical copolymerization of Vinylidene Fluoride with Perfluoro (4-methyl-3,6-dioxaoct-7-ene) sulfonyl fluoride.	19:30	O27_A: Duncan Fagg Conductivity recovery by redox cycling of yttrium doped barium zirconate proton conductors and exsolution of Ni-based sintering additives.

Thursday Morning, June 22	
08:30	PL5: Steven Holdcroft – Chair: Adélio Mendes Canadian Research Strategies for the Advancement of (Automotive) Fuel Cells
09:30	Session on European Projects related to the conference topics (Room 105) Chair: Steven Holdcroft + Adélio Mendes FERRET José Luis Viviente Life + Rewind Javier Carroquino Don Quichote Ahmed Aly PEMBeyond Pauli Koski PEMFC-SUDOE Alfredo Ortiz FluidCELL José Luis Viviente
Lunch	

Thursday Afternoon, June 22	
Social Programme - Visit to the city of Guimarães. Departure from the conference venue at 14:15.	
Conference Dinner at Quinta de Paredes (more information in the website, Social Programme).	

Friday Morning, 23 June 2017			
08:30	PL6: Frano Barbir - Chair: Andreas Friedrich Status of Hydrogen Technologies and their Role in Energy Future		
Session A – FCs (Room 105) Chair: Andreas Friedrich + Diogo Santos		Session C: Hydrogen (Room 022) Chair: Frano Barbir + Pilar Ramírez de la Piscina	
09:30	O28_A: Miguel Angel Raso Polypyrrole and platinum deposited on carbon substrate to enhance fuel cell electrodes behaviour. Electrochemical study.	09:30	O11_C: Iveta Boshnakova Investigation of Montmorillonite as carrier for PEM water electrolysis OER catalysts.
09:50	O29_A: Paula Barbosa Poly(lactide) Stereocrystallization with a Cholinium Organic Ionic Plastic Crystal.	09:50	O12_C: Elitsa Petkucheva Gold-supported Magnetron sputtered Ir catalysts for Hydrogen Energy Systems.
10:10	O30_A: Diogo Santos Investigation of borohydride oxidation reaction at Pd-ion exchanged X zeolite.	10:10	O13_C: Tiago Lagarteira Highly Active Screen Printed Ir-Ti ₄ O ₇ Anodes for Proton Exchange Membrane Electrolyzers.
10:30	O31_A: Raisa Oliveira Lignin recovery from black liquor electrolysis: a chronoamperometric and chronopotentiometric study.	10:30	O14_C: Qiong Cai Optimal control strategies for hydrogen production when integrating electrolyzers with renewable energies.
Coffee Break			
11:20	O32_A: Victoria Manzi-Orezzoli Synthesis of Microporous Layers with Patterned Wettability for Polymer Electrolyte Fuel Cells.	11:20	O15_C: Pauli Koski Measurements of reactive impurities in hydrogen fuel of automotive grade.
11:40	O33_A: Antony Bazan Electrocatalysis of methanol oxidation of PtRu catalysts supported on hierarchical porous, a DEMS study.	11:40	O16_C: Paulo Ribeirinha Internal reforming and in-situ hydrogen purification in high temperature polymer electrolyte membrane fuel cell: Experimental and Modelling.
Concluding Remarks: Closing Speech and Awards Ceremony			
Lunch			