

**8-10 MARCH 2023**

**3<sup>rd</sup> MOMENTOM  
INTERNATIONAL CONGRESS**

**ENERGY AT  
THE CROSSROADS:**

Accelerating innovation in the age of disruption



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**Maison des  
Sciences de  
l'Homme  
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Day 1 - March, 8th				Location	Chairwoman / Chairman
8:30 -9:30	Welcome coffee			Emmy Noether Hall	
9:30-10:00	Introductory words: UPSaclay, IES, MSH				
10:00-10:45	Elena Baranova	Hydrogen from Water electrolysis for a Changing World	Plenary #1	Grand Amphi	Hynd Remita / Loïc Assaud
10:45-11:15	Valérie Briois	Synchrotron Radiation at the Crossroads of the Sustainable Energy Science from Today to Tomorrow	Keynote #1		
11:15-11:35	Emmanuel Cadot	Chalco-POM based catalysts: from fundamentals to hydrogen evolution real-life application	O#1		
11:35-11:55	Jean-Paul Kleider	Status and perspectives of photovoltaics	O#2		
11:55-12:10	Short presentations: booths				
12:10-14:00	Lunch			Emmy Noether Hall	
14:00-14:45	Ivana Hasa	Sodium-ion Batteries: challenges and opportunities for an alternative sustainable energy storage technology	Plenary #2	Grand Amphi	Magali Gauthier
14:45-15:15	Bénédicte Menez	Geologic Hydrogen: sources, fluxes and relationships with deep microbial activity and abiotic organic synthesis	Keynote #2		
15:15-15:45	Damien Ernst	Reinforcement learning for electrical markets and the energy transition	Keynote #3		
15:45-16:15	Coffee Break			Emmy Noether Hall	
<b>3 parallel sessions</b>					
<b>Session 1: Energy Production - Photovoltaics</b>					
16:15-16:30	Lise Watrin	Routes for low cost III-V solar cells	O#3	Grand Amphi	Emmanuel Cadot
16:30-16:45	Fatima Santos	Solid-state monolithic dye-sensitized solar cell exceeding 10 % of power conversion efficiency using a copper-complex HTM and a carbon counter-electrode	O#4		
16:45-17:00	Sookyung Kang	High bandgap triple mesoscopic perovskite solar cells	O#5		
17:00-17:15	Thomas Campos	Study of the formation of 2D/3D perovskite heterostructures for solar cells	O#6		
17:15-17:30	Zeyu Chi	Promising Ultra-wide Bandgap Spinel ZnGa2O4 for Energy Storage and Conversion	O#7		
<b>Session 2: Energy Storage - batteries / supercaps</b>					
16:15-16:30	Xavier Mascarenhas	Deep eutectic solvents as sustainable electrolytes for supercapacitors	O#8	Room 1B26	Fabien Miomandre
16:30-16:45	Margarita Bosmi	Functionalizing graphene with tetrazine derivatives to design new materials for supercaps	O#9		
16:45-17:00	Julius Akinribido	A multiscale study of the electronic and ionic transport processes influencing the performance of Lithium-ion batteries	O#10		
17:00-17:15	Ivan Leteyi Mfiban	A study of sulfide-based solid electrolytes (SSEs) sensitivity towards humidity: gas evolution quantification and degradation mechanisms investigation	O#11		
17:15-17:30	Malaurie Paillot	Fundamental understanding of concentrated aqueous electrolytes for batteries	O#12		
17:30-17:45	Said Yagoubi	Multi-scale study of lithium diffusion in garnet-type solid electrolyte: Neutron powder diffraction and NMR spectroscopy analysis.	O#13		
<b>Session 3: Energy and Society</b>					
16:15-16:30	Jean-Marc Salotti	Alternative scenario for the energy transition	O#14	Room 1B36	Pierre Guibentif / Patrick Schembri
16:30-16:45	Elena Apostoli Cappello	Local narratives and energyscapes. Energy transition seen from the margins of a coal region	O#15		
16:45-17:00	Cedric Gossart	Measuring the ecological impacts of digital organisations: Organisational learning and indirect effects	O#16		
17:00-17:15	Katia Radja	Testing the impacts of disaggregated renewable energy sources on economic growth: evidence of spatial spillover effects for developing countries	O#17		
17:15-17:30	Fawaz Salihou	The impacts of combining incentives on carpooling for commuting in Paris Metropolitan area	O#18		
17:45-19:45	Poster session #1 + Cocktail			Emmy Noether Hall	

Day 2 - March, 9th					
3 parallel sessions				Location	Chairwoman / Chairman
<b>Session 1: Energy Networks</b>					
9:00-9:15	Gabriela Nascimento Da Silva	Evaluation of industrial hubs designs to enable the infrastructure for a hydrogen market	O#19	Grand Amphi	Marc Petit
9:15-9:30	Clément Lasselin	From energy technology complexity to socio-technical approach: the bioenergy example	O#20		
9:30-9:45	Murilo Cardoso De Miranda	Use of reversible pump-turbines (RPT) as an alternative to expand "submotorized" hydropower plants (HPP) in Brazilian Electric System - Case Study of Foz do Areia	O#21		
9:45-10:00	Angela Rosa Angelica Maragno	Scalability of an Integrated-PEC for high efficiency Hydrogen production	O#22		
<b>Session 2: Energy conversion - hydrogen</b>					
9:00-9:15	Mohamed Nawfal Ghazzal	Bandgap tuning of Graphdiyne to promote photogenerated charge separation and Photocatalytic Hydrogen Production	O#23	Room 1B26	Johnny Deschamps
9:15-9:30	Jennifer Peron	Highly Porous Iridium Oxides Electrocatalysts for Proton Exchange Membrane Water Electrolyzers	O#24		
9:30-9:45	Karine Philippot	Ruthenium nanocatalysts for electrocatalytic hydrogen evolution reaction	O#25		
9:45-10:00	Clothilde Mariusse	Challenge and prospects for the development of hydrogen and renewable Gases in France	O#26		
<b>Session 3: Energy and CO2 conversion</b>					
9:00-9:15	Dorota Rutkowska-Zbik	Density Functional Studies on Photocatalytic Methane Coupling over Au/TiO2	O#27	Room 1B36	Anne Dolbecq
9:15-9:30	Phong Duong Hong	Selective electrochemical reduction of CO to n-propanol and ethanol by nitride-derived bimetallic catalysts	O#28		
9:30-9:45	Philipp Gotico	Shaping the Electrocatalytic Performance of Metal Complexes for CO2 Reduction	O#29		
9:45-10:00	Si Thanh Dong	Forming multiple C-C bonds upon electrocatalytic reduction of CO2 by molecular transition metal macrocycles	O#30		
10:15-10:45	Coffee Break			Emmy Noether Hall	
10:45-11:30	Stéphane Goutte The challenges of rare earths in the energy transition		Plenary #3		
11:30-12:00	Nicolaos A. Cutululis	Offshore energy hubs	Keynote #4	Grand Amphi	Yara Hodroj
12:00-12:05	Anne Dolbecq DIM MaTerRE				
12:00-14:00	Lunch			Emmy Noether Hall	
<b>Innovation Session</b>					
14:00-14:30	Pascal Boulanger Vertically Aligned Carbon Nanotubes – a new material for energy, from the lab to mass production		Plenary #4	Grand Amphi	Stanislas Pommeret / Elsa Couderc
14:30-15:30	Andrea Klochko	Airthium, an engine to decarbonize the planet			
	Ana Rocha	Innovation across organizational and disciplinary boundaries at Lemon Energy: enhancing industrial energy performance based on data			
	Erwan Pannier	Low-electricity Hydrogen Production with Methane Pyrolysis Catalyzed by NanoPulsed Plasma			
	Daniel Lincot / Jean-Michel Lourtioz	SoY PV: the photovoltaic innovation in action			
	Alexandre Marc	Combustion engines, the only viable and scalable means of decarbonizing maritime mobility immediately			
15:30-16:30	Round Table Energy at the crossroads				
16:30-18:00	Poster session #2			Emmy Noether Hall	
20:00-23:00	Gala Dinner in Paris				

Day 3 - March, 10th				Location	Chairwoman / Chairman
9:30-10:15	Michael Grätzel	Perovskite Photovoltaics for Electricity and Fuel Generation from Sunlight	Plenary #5	Grand Amphi	Emmanuelle Deleporte
10:15-10:45	Arnaud Barichella	Cybersecurity in the Energy sector: Challenges, Perspectives and Policy Approaches	Keynote #5		
10:45-11:15	Coffee Break			Emmy Noether Hall	
	<b>3 parallel sessions</b>				
	<b>Session 1: Bio-inspired energy production</b>				
11:15-11:30	Théodore Bouchez	Microbial electrochemical technologies for taking advantage of the energy and carbon content of organic waste to fuel the bioeconomy sector	O#31	Grand Amphi	Philipp Gotico
11:30-11:45	Catherine Even	Microalgae for CO2 capture	O#32		
11:45-12:00	Frederic Lantz	Development of the Biofuel industry in Europe: interactions with the oil industry and the agricultural supply through a modeling approach	O#33		
12:00-12:15	Chanjuan Zhang	Bio-Inspired Bimetallic Cooperativity Through a Hydrogen Bonding Spacer in CO2 Reduction	O#34		
	<b>Session 2: Energy production - electrocatalysis/photoelectrocatalysis</b>				
11:15-11:30	Wojciech Macyk	Solar to chemical energy conversion - what is the potential of photocatalysis?	O#35	Room 1B26	Dorota Rutkowska-Zbik
11:30-11:45	Pablo Jimenez-Calvo	Sulfur-doped carbon nitride hybrid materials tested under green light for photoelectrocatalytic benzylamine oxidation and oxygen evolution reactions	O#36		
11:45-12:00	Henri Perez	Synthesis developments and performances of non-noble metal ORR electrocatalysts by ammonia induced CO2 laser pyrolysis of liquid droplet aerosol	O#37		
12:00-12:15	Catia Azenha	Tuning the syngas composition obtained via electrochemical reduction of CO2 by in situ potential cycling	O#38		
	<b>Session 3: Energy production and storage - hydrogen</b>				
11:15-11:30	Srabanti Ghosh	Conducting Polymer-Based Heterojunction for Photocatalytic Hydrogen Generation	O#39	Room 1B36	Guilhem Dezanneau
11:30-11:45	Michel Prestat	Corrosion of metallic bipolar plates and porous transport layers in proton exchange membrane water electrolyzer anodes	O#40		
11:45-12:00	Giulio Cordaro	Development of a High-Throughput Approach for the Research of Materials for Protonic Ceramic Cells	O#41		
12:00-12:15	Pascale Launois	Hydrogen storage in clay materials	O#42		
12:30-14:00	Lunch			Emmy Noether Hall	
14:00-14:45	Sara Cavaliere	Structure-Reactivity Relationship for Pt-Rare Earth Nanoalloy Electrocatalysts for Fuel Cell Cathodes	Plenary #6	Grand Amphi	Hynd Remita
14:45-15:15	Awards Ceremony & Acknowledgements				Ally Aukaloo
	<b>3 parallel sessions</b>				
	<b>Session 1: Energy production - solar fuels</b>				
15:15-16:30	Fadila Maroteaux	Analysis of Low Temperature Combustion (LTC) process in internal combustion engines	O#43	Grand Amphi	Macyk Wojciech
15:30-15:45	MariaMendez	Bifunctional earth-abundant catalysts for solar to hydrogen fuel production	O#44		
15:45-16:00	Amanda Lyn Robinson	Unveiling the Mechanism of the Photocatalytic Reduction of CO2 to Formate Promoted by Porphyrinic Zr-Based Metal-Organic Frameworks	O#45		
16:00-16:15	Encarnacion Torralba	Synthesis of p-Silicon/Agx Cu100-x Photocathodes applied to light-assisted CO2 reduction	O#46		
	<b>Session 2: Energy harvesting - microdevices</b>				
15:15-16:30	Marie-Amandine Pinault-Thaury	Diamond semiconductor: its challenging n-type doping	O#47	Room 1B26	Remith Pongilat
15:30-15:45	Quang-Chieu Bui	Influence of GaN NW diameter on their piezo-conversion properties: Effect of the surface charges	O#48		
15:45-16:00	Ann-Lenaig Hamon	Micro-device optimization for energy harvesting applications	O#49		
16:00-16:15	Jokotadeola Odutola	Unlocking the photophysics of mesoporous graphitic-carbon nitride (mpg-CN)	O#50		
	<b>Session 3: Energy transition</b>				
15:15-16:30	Dirk Lauinger	On Robust Optimization, Blackouts and the Law	O#51	Room 1B36	Natalia Zugravu
15:30-15:45	Diana Monroy	Predator-Prey model of a technological renewable-based energy transition	O#52		
15:45-16:00	Alexandre Mathieu	A meta-analysis of the concept of "green jobs" : the search for sustainable development paths in developing countries	O#53		
16:00-16:15	Matteo Capaldo	Damping analysis of Floating Offshore Wind Turbine (FOWT): a new control strategy reducing the platform vibrations	O#54		

Poster session day #1			
1	Alessandro Perazio	Acidic Electroreduction of CO2 to Multi-Carbon Products with Continuous CO2 Recovery from Carbonate	P#1
2	Olivier Plantevin	Strain and Optoelectronic tuning in Mixed Halide Perovskites with Ion Irradiation	P#2
3	Maria El Khoueiry	Characterization of molecular catalysts by Atomic Force Microscopy combined to Scanning Electrochemical Microscopy for the Hydrogen Evolution Reaction	P#3
4	Yassine Naciri	Compositional, Structural, and Surface Characterization of Titanium doped Imogolite Clay Nanotubes: Implications for Photocatalytic Hydrogen Production	P#4
5	Yutzil Segura	Copper-based nanoparticles for CO2 electroreduction	P#5
6	Sharyal Zafar	Decentralized Control of EVs in Smart Grid using Multi-Agent Multi-Armed Bandits	P#6
7	Marie-Sophie Dias Fernandes	Direct Synthesis and Electrochemical Characterization of Nasicon-Type Li2NaV2(PO4)3 Cathode	P#7
8	Caroline Mary	Doping influence on g-C3N4 based heterojunction for hydrogen production by water splitting under solar irradiation	P#8
9	Narimane Meziani	Effect of hydration on the properties of a superionic conductor M2Ti2O5.(H2O)x	P#9
10	Emma Stephan	Electrical behavior and stability under real outdoor working conditions of triple-mesoscopic perovskite solar cells.	P#10
11	Elio El Semaan	State estimation of low voltage networks using machine learning techniques	P#11
12	Ahmed Ihlal	Experimental investigations on atmospheric water harvesting using composite desiccant-based solar collector	P#12
13	Alexandre Bach	Fault location on MV distribution grids with distributed measurements	P#13
14	Wahid Ullah	Graphdiyne quantum dots: new metal free co-catalyst for efficient photocatalytic hydrogen generation	P#14
15	Mahmoud Attia	Investigations of diffusion and NMR properties in LLAZO through a multiscale simulations approach linked to experimental data	P#15
16	Ana Rocha	Innovation across organizational and disciplinary boundaries at Lemon Energy: enhancing industrial energy performance based on data analysis	P#16
17	Adrien Smith	Metalloporphyrins bearing imidazolium groups for CO2 reduction	P#17
18	Qingyang Xi	Molecular engineering of hole transporting molecules for high efficient and enhanced thermal stability perovskite solar cell	P#18
19	Girli Eunice Lopez	Photocatalytic Oxygen Reduction to Hydrogen Peroxide from Oxygen and Water by Metal- free Nano-Polypyrrole	P#19
20	Haroon Rashid	Polymeric porphyrin-based material for the activation and reduction of CO2	P#20
21	Alisha Khan	Porous Composite Nanomaterials Based On MOFs For Green Hydrogen Production	P#21
22	Emile Emery	Power Grid Structure for the Energy Transition	P#22
23	Ana Andrea Mendez Medrano	Enhancement of Photocatalytic Hydrogen Generation on TiO2 by AuPd nanoalloys	P#23
24	Sawako Nakamae	Thermogalvanic Energy Conversion Improvement in Ionic Liquids Redox Solvation and Coordination Chemistry	P#24
25	Catherine Harvey	Towards the Electrolysis of Seawater by Iridium and Iridium Mixed Based Oxide Nanoclusters for the Generation of the Hydrogen Energy Carrier	P#25
26	Joseph Scola	Interfacial properties of a ZnO-polymer nanocomposite for PENG applications	P#26
27	Dana Stanesco	Intrinsic photoanode band engineering: surface segregation mediated enhanced solar water splitting efficiency in Ti-doped hematite nanorods	P#27
28	Julius Akinribido	A multiscale study of the electronic and ionic transport processes influencing the performance of Lithium-ion batteries	P#28
Poster session day #2			
29	Lise Watrin	Routes for low cost III-V solar cells	P#29
30	Hanah Matmati	3 generation of green gas: from the circular economy of the territory to the resilience of gas networks	P#30
31	Vien-Duong Quach	Artificial strong metal-support interaction on plasmonic core-shell nanostructures for photo(electro)catalytic reaction	P#31
32	Sébastien Votat	Bioremoval of dyes in a microbial fuel cell by the fungus Trichoderma harzanium : a sustainable approach in energy production	P#32
33	Amaury Chevillard	GaN nanowire-based piezoelectric devices for energy harvesting: Impact of the NW/polymer matrix composite	P#33
34	Xingze Wang	Heterometallic (MIV/MII) MOFs as a versatile platform for the photocatalytic overall water splitting reaction	P#34
35	Marie-Amandine Pinault-Thaury	Ionic analysis of phosphorus doped-diamond homoepilayers grown with different carbon isotopic abundances	P#35
36	Marie-Amandine Pinault-Thaury	Locally Ion Implantation and Annealing Effects in Diamond	P#36
37	Thanh-Tuan Bui	Molecular engineering of hole transporting molecules for high efficient and enhanced thermal stability perovskite solar cell	P#37
38	Matthieu Haake	Selective Aqueous Electrochemical CO2-to-CO Reduction with a Cobalt-based Molecular Cathode	P#38
39	Cong Wang	Structure-Engineered TiO2: Harvesting Light for Photocatalytic H2 Production	P#39
40	Marie Le Pivert	ZnO nanostructures based photocatalytic civil engineering materials development for urban pollution remediation	P#40
41	Valentin Delachaux	Why are photovoltaic/thermal solar collectors (PVT) yet on the way to be a key technology of buildings energy transition, especially for DHW preparation?	P#41
42	Raihana Benyahia	Nickel based anodes for the electro-oxidation of urea and synthetic urine in alkaline media	P#42
43	Moataz El Sied	The way to 100% MW scale renewable power systems: future challenges and promising solutions	P#43
44	Peigen Xie	Smart building simulation and control	P#44
45	Nicolas Dubouis	How R&D Can Help us Transform into a Clean H2 Economy	P#45
46	Qingyang Xi	Nb, N co-doped TiO2 nanoparticles for broad spectrum solar light activation photocatalysis	P#46
47	Corentin Chatelet	Vertically aligned carbon nanotubes on aluminum foils: one-step synthesis from bio-sourced precursors and electrochemical characterization	P#47
48	Lauro Ferreira	Operation of Power Diodes at Cryogenic Temperature	P#48
49	Viet-Dung Duong	Semiconducting conjugated oligomers for photo-driven water oxidation	P#49
50	Ashutosh Kumar	Thermoelectric Properties of high-entropy rare-earth cobaltates	P#50
51	Hanah Matmati	3rd gas revolution: challenges and prospects for the development of renewable gases	P#51
52	Eva Pugliese	Photo-induced Fe(III)-hydroperoxo generation for oxygen atom transfer reaction	P#52
53	Yuan Xiaojiao	Molecular imprinted butterfly-shaped micromotors for selective target recognition	P#53
54	Ankush Bathia	New insights on the charge storage mechanism of thin films electrode materials by Raman spectroscopy	P#54