

THE POWER OF INTERFACES 2024 DETAILED PROGRAM

Venue: Palma CaixaForum (Plaza de Weyler, 3. 07001 Palma)

	Wednesday, Apr 3 rd		Thursday, Apr 4 th	Friday, Apr 5 th
	Meetings	School	Workshop	Workshop
	Room: Miquel del Sants Oliver	Room: L. Dòmenec i M. auditory	Room: Lluís Dòmenec i Muntaner auditory	Room: Lluís Dòmenec i Muntaner auditory
	Floor 3	Floor -1	Floor -1	Floor -1
8:30	Registration		Registration and opening	
9:00	9:00 - 14:00 Hype 3D meeting	09:00 - 11:00 Session I	9:00-10:45 Session 1 - Modelling	9:00-11:15 Session 5 - Advanced materials
10:00		Break	Break	Break
11:00		11:30-13:30 Session II	11:15-12:45 Session 2 - Advanced Manufacturing	11:45-13:15 Session 6 - Batteries
12:00		13:30-15:30 Lunch	12:45-14:30 Lunch	Closing remarks
13:00	14:00-15:00 Lunch	15:30-18:00 Session III	14:30-16:15 Session 3 - Stack and Systems	
14:00	15:00-18:30 Epistore meeting (Room Miquel del SO)		Break	
15:00	17:00 Zen24/7 meeting (Room Alexandre Rosselló, Floor -1)		16:30-18:00 Session 4 - Advanced Characterization Techniques	
16:00	19:30-22:00 Welcome reception for all the participants	18:00-19:30 Poster session (Room la Roqueta, Floor -1)		
17:00		21:00 Social gathering		
18:00				
19:00				
20:00				
21:00				
22:00				

DAY ONE

Wednesday, 3rd of April Project meeting and School

Registration starts at 8:00, Floor -1

PoI24 SCHOOL

Room Lluís Dòmenec i Muntaner (auditorium)

Session I	09:00	Thermodynamics of fuel cells	Federico Baiutti
	10:00	Introduction to high pressure SOEC	Lucile Bernadet
Session II	11:00	Break	
	11:30	CVD/ALD techniques for thin film oxides	Monica Burriel and David Munoz-Rojas
	12:30	Reversible SOC systems for energy markets and industry	Kyriakos Panopoulos
	13:30	Lunch*	
Session III	15:30	SOFC/SOEC operation	Xiufu Sun
	16:45	Innovate, Create, Produce: The Rise of Ceramic 3D Printing in Meeting Industry Demands	Christophe Chaput

*Wednesday's lunch is not provided, participants are encouraged to taste the local restaurants around the venue

PROJECT MEETINGS (for project members only)

09:00 – 14:00	Hype 3D project meeting	Room: Miquel del Sants Oliver, Floor 3
	Lunch*	
14:00 – 15:00	Epistore project meeting	Room: Miquel del Sants Oliver, Floor 3
15:00 – 18:30	ZEN24/7 project meeting	Room Alexandre Rosselló, Floor 2

*Wednesday's lunch is not provided, but participants are encouraged to taste the local restaurants around the venue

WELCOME RECEPTION

Welcome reception for all the PoI24 participants

19:30	Adalt Brewing C/ de l'Arxiduc Lluís Salvador, 40, 07004 Palma
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DAY TWO

Thursday, 4th of April Power of Interfaces workshop

Registration starts at 8:00, Floor -1

POWER OF INTERFACES WORKSHOP

Room: Lluís Dòmenec i Muntaner (auditorium) Floor -1

8:45 **Opening**

Session 1 - Modeling (Chair: Albert Tarancón)

9:00	I	Daniel Mira	HPC framework for multi-physics simulations of solid oxide cells
9:30	I	Kuilbir Ghuman	Understanding Ion Diffusion through Grain Boundaries in Ceramics: A Focus on Lithium Lanthanum Titanate and Ytria-Stabilized Zirconia
10:00	C	Alexander Bonkowski	Molecular-dynamics simulations of oxygen diffusion in polycrystalline (La,Sr)FeO _{3-δ} perovskite
10:15	C	Adrian Usler	Reading between the grain of oxide-ion conductors: the thermal history of space-charge layers
10:30	C	Carlota Bozal-Ginesta	Prediction of oxygen reduction performance of perovskites La _{0.8} Sr _{0.2} (Co,Fe,Mn)O ₃ with machine learning based on spectroscopic characterization data

10:45 **Coffee-break**

Session 2 – Advanced Manufacturing (Chair: Mihails Kusnezoff)

11:15	I	Alessandra Sanson	Key issues in the innovative manufacturing processes for SOC
11:45	I	Federico Smeacetto	Innovative manufacturing technologies for solid oxide cells; from joining and integration challenges to recycling strategies
12:15	C	Miguel Laguna-Bercero	Optimization of current collection and operation under pressure on microtubular solid oxide cells
12:30	C	Simone Anelli	Protonic Ceramic Electrolysis Cells: from the 3D printing to integration issues

12:45 **Lunch (at Caixaforum restaurant)**

Session 3 – Stack and systems (Chair: Federico Smeacetto)

14:30	I	Mihails Kusnezoff	Solid Oxide Cell stack performance and durability in electrolysis, co-electrolysis and reversible operation
15:00	I	Jan Pieter Ouweltjes	r-SOC system for Power-to-Power applications
15:30	I	Nicoleta Muresan	Johnson Matthey's Ambition in driving decarbonization through electrolysis
16:00	C	Emre Avci	Target cost of reversible fuel cell systems

16:15 **Coffee-break**

Session 4 - Advanced Characterization Techniques (Chair: Monica Burriel)

16:30	I	Carlos Escudero Rodríguez	ALBA Synchrotron: A powerful tool for operando characterization of energy-relevant materials
17:00	I	Katherine Develos-Bagarinac	Probing oxide ion transport and degradation behavior at interfaces via SIMS and other techniques
17:30	C	Juan Carlos Gonzalez-Rosillo	Towards operando characterization of electroceramics via Tip-Enhanced Raman Spectroscopy
17:45	C	Zonghao Shen	Isotopic Exchange Raman Spectroscopy (IERS) multidimensional analysis on Pr and Gd-doped ceria

18:00-19:30 **Poster session – List of posters at the end of the extended program**

Room la Roqueta (next to the auditorium, Floor -1)

I: invited talk C: contribution

SOCIAL GATHERING

21:00	Social gathering	A social meeting point will be proposed during the opening session
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DAY THREE

Friday, 5th of April
Power of Interfaces workshop

POWER OF INTERFACES WORKSHOP

Room: Lluís Dòmenec i Muntaner (auditorium) Floor -1

Session 5 – Advanced Materials (Chair: John Kilner)

9:00	C	Rahul Majee	Nanoparticle Exsolution at Low-Temperature Induced by Ga-doping
9:15	I	Tatsumi Ishihara	Interface as active site for oxygen dissociation on Co ₃ O ₄ air electrode
9:45	I	Miriam Botros	Complex Materials for Energy Applications
10:15	I	Nini Pryds	Thin films materials and devices for energy
10:45	C	HyoYoung Kim	Advanced Functional Layer of Pr doped CeO ₂ -BaZr(Ce, Y)O ₃ on Protonic Ceramic Fuel Cells
11:10	C	Matthew Wells	Performance Enhancement of Low-Temperature Solid Oxide Cells with Vertically Aligned Nanocomposite Films

11:15 Coffee-break

Session 6 – Batteries (Chair: Juan Carlos Gonzalez-Rosillo)

11:45	I	Ainara Agüero	Halides electrolytes for all-solid-state batteries
12:15	I	Alexander Schmid	High temperature energy Harvesting and Storage with mixed conducting perovskites
12:45	C	Silvère Panisset	How good is La ₂ NiO _{4+δ} as an electrode for rechargeable Oxygen-Ion Batteries?
13:00	C	Fabiana D'Isanto	Joining and integration challenges in Sodium-Zinc molten salt batteries

13:15 Closing and remarks

I: invited talk C: contribution

POSTER SESSION

DAY TWO – Thursday, 4th of April (18:00-19:30)

Poster contributions

Athina Souvalioti	Enhanced rSOC operation of Ni/GDC by means of Fe-Au doping: Physicochemical and electrochemical investigation for the optimum Fe-Au content
Simon Vernier	Optimisation of YSZ electrolyte deposition by MOCVD for all thin film SOCs
Cristina García Torrejón	Engineering of interfaces of Na solid-state electrolytes for anode-free batteries. Study of the interface by Raman spectroscopy.
Antoine Duhain	Deposition of ZrO ₂ and CeO ₂ thin films by AP-SALD for electrochemical applications
Ismael Babeli Aguilera	Enhancement of mechanical and electrochemical properties of SOC electrolytes by 3D printing
Marlene Anzengruber	Sacrificial layers for freestanding oxygen conducting thin films
Lisa Laa	Elemental mapping of thin-film based material libraries using GD-OES
Chenyang Liao	Probing low temperature protonic diffusion in BaZr _{0.1} Ce _{0.7} Y _{0.1} Yb _{0.1} O _{3-d} system
Claudia Steinbach	Predicting Space Charge Effects at Ionic and Electronic Conducting Oxide Heterojunctions
Barbara Wagner	Exploring the Potential of LSCrMn in Oxygen Ion Batteries via Chemical Capacitance Measurements
Kirsten Rath	Expanding Horizons – A Multi-analytical Study of Chemical Expansion in Gd-doped Ceria
Milena Zehetner	New materials for powder-based oxygen ion batteries
Mina Ghorbanzadeh	Characterization of SrTiO ₃ thin films prepared by sol-gel process as electrode material for oxygen ion batteries
Da Prato Francesco	Design and processing of glass-ceramic sealant for protonic ceramic cell assembly
Paweł Boguszewicz	Design and Validation of a Compact Heat Recovery System for SOC Stack Testing: A Flow-through Approach
Maciej Bąkała	Analysis of pressurized electrolysis and co-electrolysis of H ₂ O/CO ₂ in solid oxide cells
Chun Huang	Processing and 3D characterisation of electrode microstructure for lithium batteries
Magdalena Kosiorek	Development of 3D-Printed Glass-Zirconia Composite Seals for Solid Oxide Electrolyzers

Organizers



En col·laboració



Fundación "la Caixa"