



**HIGREEW Workshop:**  
**Flow batteries, bringing the technology to  
the market**

**16 and 17 May 2023**  
**Hosted by CIC energiGUNE in Vitoria-Gasteiz (Spain)**

**Want more information about this event?**  
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## Programme 16 May

### Session: Market and Policy

08:30 Welcome session *CIC energiGUNE*

08:45 Energy storage and advanced grid functionalities: the missing piece of the 100% renewable puzzle *Managing director, Gamesa Electric - Juan Barandiaran*

09:05 Why does the electricity grid need storage and what are the best options today and tomorrow *Senior scientist, EDF R&D division, batteries group - Philippe Stevens*

09:25 RFB Market *Director Sales Microgrid Solutions, Enerox GmbH / CellCube - Juan-Carlos Mejia*

09:45 Redox flow battery R&D in Shell *Senior process development chemist, Shell Global Solutions International B.V. Domain lead redox flow battery technology - Peter Klusener*

10:05 Battery Sustainability Regulation in context of redox-flow technology *Scientific officer at Joint Research Centre of EC - Marek Bielewski*

10:25 - 11:00 *Coffee Break*

### Session: Materials

11:00 HIGREEW Project: a journey through new generation AORFB *HIGREEW project coordinator and redox flow research line manager, CIC energiGUNE - Eduardo Sánchez*

11:20 Characterization of AORFB *Researcher, Laboratory of Energy Storage, NTC UWB and UCT Prague - Jiří Charvát*

11:40 Modified anion exchange membranes and other perspectives *PhD student, electrochemistry research group at Applied chemistry-physics faculty, University Autonomous of Madrid - Iván Salmerón Sánchez*

12:00 The importance of the electrolyte-membrane combination for long lifetime Viologen-TEMPO AORFB *PhD student, redox flow research line, CIC energiGUNE - Laura Pastor*

12:20 Membranes for AORFB *Senior Lecturer, Imperial College, Project coordinator of ERC Starting Grant NanoMMES - Qilei Song*

12:40 - 14:10 *Networking Lunch*

### Session: Cell/stack design and modelling

14:10 Engineering Porous Electrodes for Redox Flow Batteries *Assistant Professor, Membrane Materials and Processes Group, department of Chemical Engineering and Chemistry at Eindhoven University of Technology - Antoni Forner-Cuenca*

14:30 How active can be the graphite felt electrode in redox flow battery electrolyte? *Research director, CNRS - Mathieu Etienne*

14:50 Development of a multiphysics model for an aqueous organic redox flow battery *PhD student, redox flow research line, CIC energiGUNE - Aitor Beloki*

15:10 Results of the European project SONAR with Deeper Insight into Microstructure Simulations of Flow Batteries *Research associate, Institute of Mechanical Process Engineering and Mechanics. Karlsruhe Institute of Technology - Amadeus Wolf*

15:30 Printed seals in redox flow batteries *Principle engineer, C-Tech Innovation Ltd - John Collins*

15:50 Ending day 1 - *CIC energiGUNE*

16:00 Visit to CIC energiGUNE's facilities: labs and open platforms (upon registration)

**08:30** Welcome session *CIC energiGUNE*

**08:40** Electrolyte regeneration of vanadium flow batteries *PhD student, Electrochemical Energy Storage and Conversion Laboratory (EESCoLab), University Padova - Nicola Poli*

**09:00** Design and manufacture of a 50 kW vanadium redox flow battery *Composite Materials Group, Department of Materials Science at Spanish National Research Council - Ricardo Santamaría*

**09:20** Scale-Up of AORFB *Co-Founder, PFES - Jaromír Pociď*

**09:40** Modular balance of plant for mass-customized flow battery production *Redox Flow Battery, Applied Electrochemistry, Fraunhofer Institute for Chemical Technology ICT - Michael Schäffer*

**10:00** The installation of a commercial-scale flow battery in the Son Orlandis photovoltaic plant *Project manager R&D Unit- Endesa - Pablo Fontela Martínez*

**10:20** The importance of flow batteries for hybrid generation systems *Head of section renewables & storage power plants integration testing, SGRE - Alberto Alonso Cantalapiedra*

**10:40 - 11:00** *Coffee Break*

### **Session: Non-conventional RFB and hybridization**

**11:00** Hydrogen bromine, case studies to upscale the technology. MELODY project *Senior electrochemist, Elestor and scientific project manager, MELODY project - Kamuran Yasadi*

**11:30** Recent Advances and Future Challenges of Membrane Free Redox Flow Batteries *Senior researcher, IMDEA Energy Institute - Rebeca Marcilla*

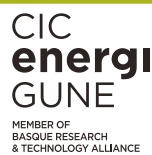
**11:50** Hybrid redox flow batteries: technology upscaling, opportunities and challenges *Senior scientist & team leader, Green Energy Storage - Eneko Azaceta*

**12:10** Hybridization of RFB *Scientific director, Hochschule Landshut, University of Applied Sciences, HyFlow project coordinator - Karl-Heinz Pettinger*

**12:30** Redox-mediated flow batteries: first steps from fundamentals to application *Ramon y Cajal professor at the University of Burgos - Edgar Ventosa*

**12:50** Closing remarks. End of HIGREEW workshop

**13:15** *Networking Lunch*



GamesaElectric



#### **Partner acronyms**

- **CIC energiGUNE** Centro de Investigación Cooperativa de Energías Alternativas Fundación, CIC energiGUNE Fundazioa
- **GAMESA** Gamesa Electric Sociedad Anonima
- **UAM** Universidad Autónoma de Madrid
- **CNRS** Centre National de la Recherche Scientifique
- **C-TECH** C-Tech Innovation Limited
- **UWB** University of West Bohemia New Technologies – Research Centre
- **PFES** Pinflow energy storage, s.r.o.
- **UNR** Uniresearch B.V.
- **SIEMENS GAMESA** Siemens Gamesa Renewable Energy Innovation & Technology S.L
- **FRAUNHOFER** Fraunhofer Institute for Chemical Technology



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