



SFERA-III/ACES2030 Joint Workshop (ONLINE) on MST-Materials for Solar Thermochemistry

- Date and time: December 10th, 2020, 14:30 – 17:40 (UTC+1)
- Organizer: IMDEA Energy Institute, Spain
- Registration: <https://forms.gle/JViRQT3ccCuTY8QDA>



The energy transition to a climate neutral economy by year 2050, based upon the massive deployment of renewable energy and the circular economy, makes compulsory to promote new technological solutions for decarbonization of transport and key industrial sectors like chemical industry that are currently not on track to achieve the objectives for 2030 and 2050. Solar chemistry by using concentrating solar systems and thermodynamic cycles based on metal oxides for the water splitting (alone or combined with CO₂) or for thermochemical storage may have a relevant role in this context. However, the associated technology challenges, such as the ultra-high irradiance and temperature of operation in the solar reactor and the preservation of high material performance after numerous cycles, are key subjects for its eventual implementation.

The EU project Sfera-III (<https://sfera3.sollab.eu/>) and the Comunidad de Madrid project ACES2030 (<https://aces2030.es/>) are partnering in the organization of this joint workshop that addresses the most recent advances on materials R&D for solar thermochemistry

- **Registration required:** The participation is **free of charge** and requires registration.
 - To register for the event, please fill in the online [registration form](#).
 - For additional information, email us at teresa.martin@imdea.org

Agenda

Start –End time	Title	Speaker
14:10 -14:30	<i>Virtual platform opens. Login participants</i>	
14:30-14:40	Welcome and introduction to the Workshop	
14:30-14:35	Welcome and brief presentation of ACES2030 project	Manuel Romero, IMDEA Energy
14:35-14:40	Welcome and brief presentation of SFERA-III WP8	Brendan Buffin, ETHZ Zürich
14:40-16:00	Session 1: Materials development Chair: José González-Aguilar (IMDEA Energy)	
14:40-15:00	Advances and Challenges in the Development of Redox Materials for Thermochemical Storage	Juan Coronado, ICP-CSIC, Spain
15:00-15:20	Oxide-based materials for hydration/dehydration and carbonation/calcination thermochemical storage cycles	George Karagiannakis, CPERI-CERTH, Greece
15:20-15:40	Materials Discovery, Development and Characterization for Near-Isothermal Thermochemical H ₂ Production	Jonathan Scheffe, Univ. Florida, USA
15:40-16:00	<i>Joint discussion</i>	
16:00 –16:10	<i>Coffee break</i>	
16:10-17:00	Session 2: KPI, kinetics and testing protocols Chair: Martin Roeb (DLR)	
16:10-16:30	Thermodynamics and kinetics in redox cycles	Sossina Haile, Northwestern Univ., USA
16:30-13:50	Benchmarking and Protocols for redox active metal oxide materials' R&D	Ellen Stechel, Arizona State Univ. USA.
16:50-17:10	Proposal of IEAH2 Task on renewable hydrogen production: KPIs and methodologies for the assessment of different technologies.	Luca Turchetti, ENEA, Italy
17:10-17:30	<i>Joint discussion</i>	
17:30- 17:40	Wrap up of Workshop	Manuel Romero, IMDEA Energy Brendan Buffin, ETHZ

- *SFERA-III, Solar Facilities for the European Research Area, is a project funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No 823802.*
- *ACES2030-CM (S2018/EMT-4319) is a Programme funded by the Regional Government of Comunidad de Madrid through the Programme of R&D Activities among Research Groups of Comunidad de Madrid in Technologies 2018. Co-funded with structural funds of the European Union*