JP AMPEA-DfE & COST-Action EU-MACE WORKSHOP

"Digitalization and Automation Boost Energy Materials Research"

CNR-headquarter, Rome, Italy, January 24-25, 2024

Call for Abstracts

The EERA JP AMPEA and DfE join forces with the COST-Action EU-MACE (European Materials Acceleration Center for Energy) to hold their first joint workshop on "Digitalization and Automation boost Energy Materials Research." The 2-day workshop is dedicated to showcasing the latest numerical tools, methodologies, and applications that are revolutionizing the way we design, analyze, and develop advanced energy materials. It will be a platform for experts, researchers, and innovators from diverse backgrounds to converge and share their insights into the latest and future autonomous materials acceleration platforms. We invite academic and industry researchers to present the state-of-the-art progress in digital and automation methodologies for materials research, without delving excessively into technical details while demonstrating their relevance to addressing the broader, overarching challenges encountered by the community.

Suggested topics:

- AI applied to energy and materials design, characterization and assembly, Material discovery/improvement through database screening
- Coupling characterizations and simulations (connection between the material properties derived from experimentation to the one obtained in-silico): e.g., dislocation densities, residual stresses for characterization methods
- Multi-physics and multi-scale simulations of energy sources and materials' property – breaching scales: e.g. Atomistic to microstructure, corrosion-wear, thermomechanical for simulation of materials/bridging length scales
- The role of energy in the road to exascale
- Automation methods & Robotics
- Digital twin
- Sensorization of labs (Connecting virtualized labs and sensorized infrastructures)
- Incorporating "Sustainable and Safe by Design" tools into materials design
- SSH approach (The human-centric approach in the digitalisation of the energy sector)
- Data Science (e.g., Metadata structuring, FAIR adoption, data quality assessment)
- Open materials data (what's out there, and how to join and use them efficiently, state of the art, which kind of material properties?)
- Education and training: Effective training methods for young/old scientists

Abstract Submission Guidelines/Important Dates:

- No more than 350 words. (please use the provided template)
- Submission via email to: ampea@eera-set.eu.
- Please indicate your membership: JP AMPEA, JP DfE, EU-MACE or "other" in the subject line when submitting
- Abstract Submission Deadline: [November 27th, 2023]
- Notification of Acceptance: [December 8th, 2023]