OSCARS
Open Science Clusters' Action for Research & Society

Funded Project

FAIR Open Infrastructure for Modelling Hydrogen Storage & Rare-Earth Magnetic Materials

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Implemented by

MESO
Testing Laboratory

Department of Materials Science and Engineering

What problems are you going to solve?

- Fragmented materials data slows green innovation

- Experimental data for hydrogen storage and rare-earth magnets are fragmented and instrument-specific

- Lack of harmonised metadata limits interoperability and reuse

- Materials datasets are rarely FAIR-compliant

- Poor integration with EOSC infrastructures

- Slow transition to data-driven materials discovery

What are you planning to do to solve the problem?

- Bridging experimental research and digital infrastructure
- Structuring experimental materials data into reusable digital assets
- Defining minimum metadata standards and controlled vocabularies
- Harmonising workflows for XRD, DSC/DTA, SEM and related techniques
- Aligning outputs with FAIR principles
- Integrating with EOSC-compatible infrastructures

What will be the results and how do you plan to make them available to the broader community?

What changes because of HYDRA?
- Reusable, structured datasets for hydrogen and magnetic materials
- Cross-project comparability through harmonised metadata
- Increased visibility of materials research within EOSC
- Reduced duplication of experimental effort
- Foundation for predictive, data-driven materials modelling

Access:
- Open repositories with DOIs
- Open licensing
- EOSC integration

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Who is doing it?

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