

Findable Big Data from Various Material Characterisation Techniques



By bridging semantic gaps and establishing coherent classification systems towards ontology harmonisation, the project paves the way for seamless data discovery and analysis, empowering researchers to advance their Open Science initiatives across diverse materials characterisation techniques.



Challenge

Findability of experimental datasets presents significant challenges, particularly at Photon and Neutron (PaN) facilities, where data is abundant yet often dispersed across diverse platforms and repositories. The complexity of finding relevant data highlights the need for improved ontology harmonisation to optimise the data discovery process.

Solution

Extend and integrate the PaNET ontology into the research data management platform NOMAD, and to the metadata ecosystem of institutions, such as ESRF, or HZB. This will enhance FAIRification, by ensuring comprehensive descriptions of experimental endeavours and facilitating precise identification of the techniques utilised in each instance.

Scientific Impact

The project will enhance data findability, which lays the groundwork for comprehensive analysis of experimental big data, also leveraging tools, such as the NOMAD's Artificial Intelligence Toolkit.

Partners

FAIR Data Infrastructure for Physics, Chemistry, Materials Science, and Astronomy e.V. (FAIR-DI), Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), European Synchrotron Radiation Facility (ESRF)

<https://www.oscars-project.eu/projects/findable-big-data-various-material-characterisation-techniques-0>