



# OSCAR

Open Science Clusters' Action  
for Research & Society

## Funded Project

# MatScatNet

Principal Investigator: Maxwell W. Terban, Momentum Transfer

Project team members: Bernd Hinrichsen, Maxwell W. Terban, Didier Blanchard, Momentum Transfer Jakub Drnec, ESRF

Implemented by



# 1st Open Science Experimental Powder Diffraction Database

**OSCARS Funding:**

€ 250.000

**Project Start:**

[01 NOV. 2024]

**Project End:**

[31 OKT. 2026]

**Field: Materials Science**

momentum-transfer.com

**Principal Investigator:**Maxwell W. Terban,  
Momentum Transfer**Other Researchers  
involved:**Bernd Hinrichsen, Didier  
Blanchard (Momentum  
Transfer), Jakub Drnec  
(ESRF)

## Open Database of Experimental Powder Diffraction Data

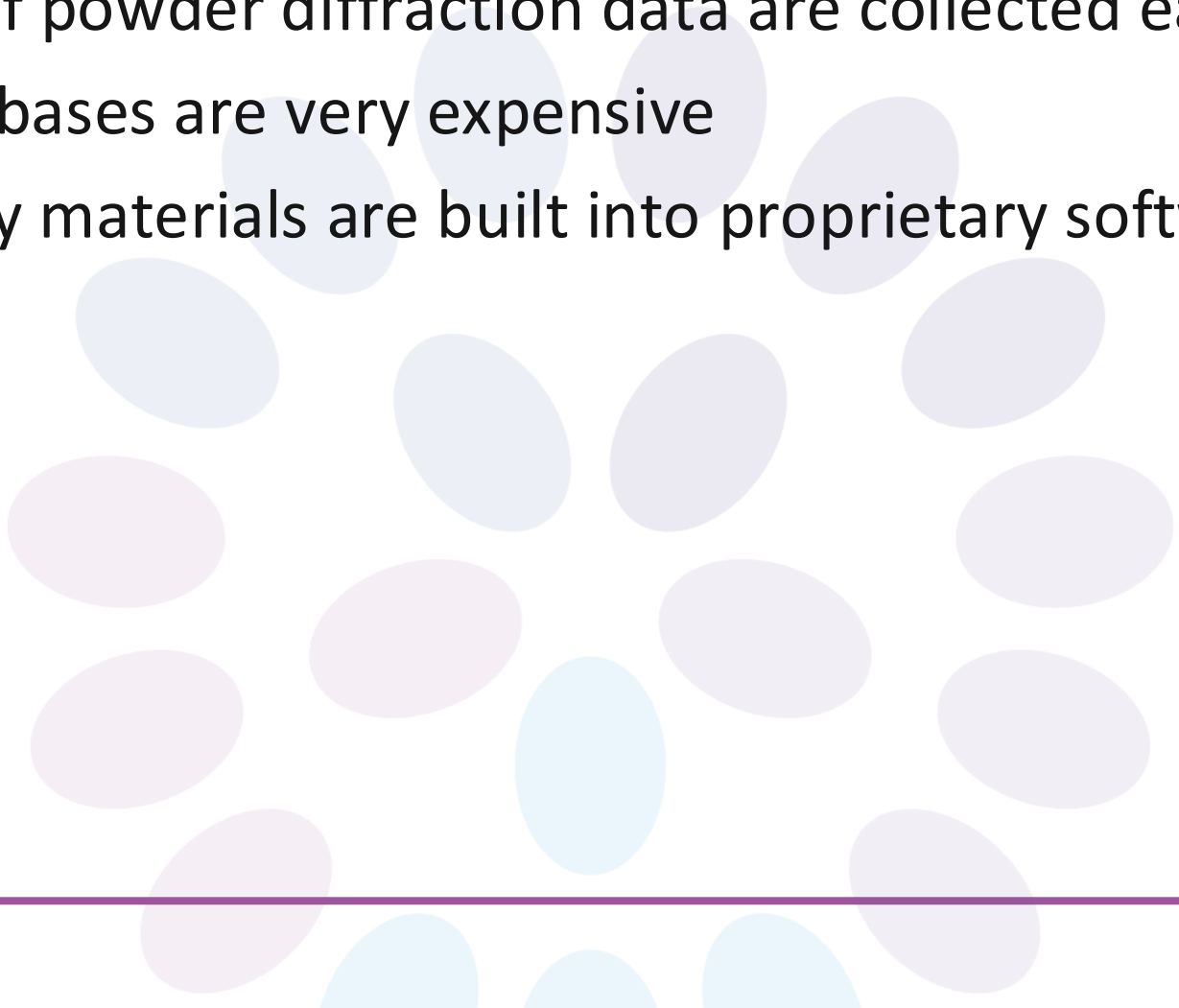


## IMPACT

Enable easy open and free sample identification from powder diffraction data.

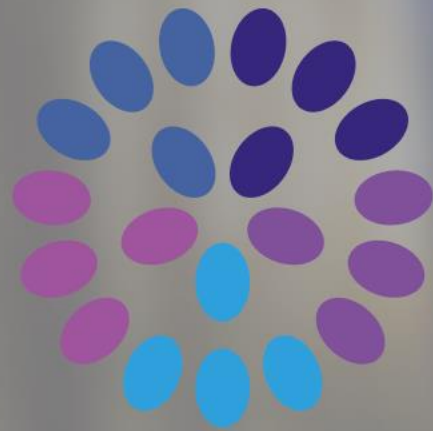
**Organisations involved:**

- Measure 1000's of powder samples from researchers around the world using our high-throughput setup developed with the ESRF
  - Build a database containing experimental data & valuable metadata
  - Make this DB available to researchers as an open-science tool
  - Create tools for searching and identifying similar materials to user uploaded data
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- Huge amount of powder diffraction data are collected each year
  - Reference databases are very expensive
  - Tools to identify materials are built into proprietary software
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- Enable the comparison powder diffraction data against a reference data of real experimental data.
  - Allows comparison of “similar but different” materials e.g. carbons
  - (Place a picture of Graphite versus disordered carbon)
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- What is going to change thanks to your project?
    - It is going to be easier and cheaper for researchers to identify materials in their samples
  - Are you generating new knowledge, or making existing datasets more accessible, or creating new services that might be helpful to others?
    - We will be creating a new service for researchers to enable the identification of their samples and proceed with the analysis of their materials
  - Are your solutions usable beyond your own community, and how are you going to make sure that they don't disappear again after the end of the project?
    - The solution will be generally applicable to all powder diffraction and total scattering/PDF users.
  - How do you plan to make your results sustainable?
    - The DB will be curated and extended as part of a service to the community by Momentum Transfer, a company making available low cost Synchrotron Powder Diffraction measurements.
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OSCARS

Thank you