Editors4Chem: Implementing Publication Standards in Chemistry

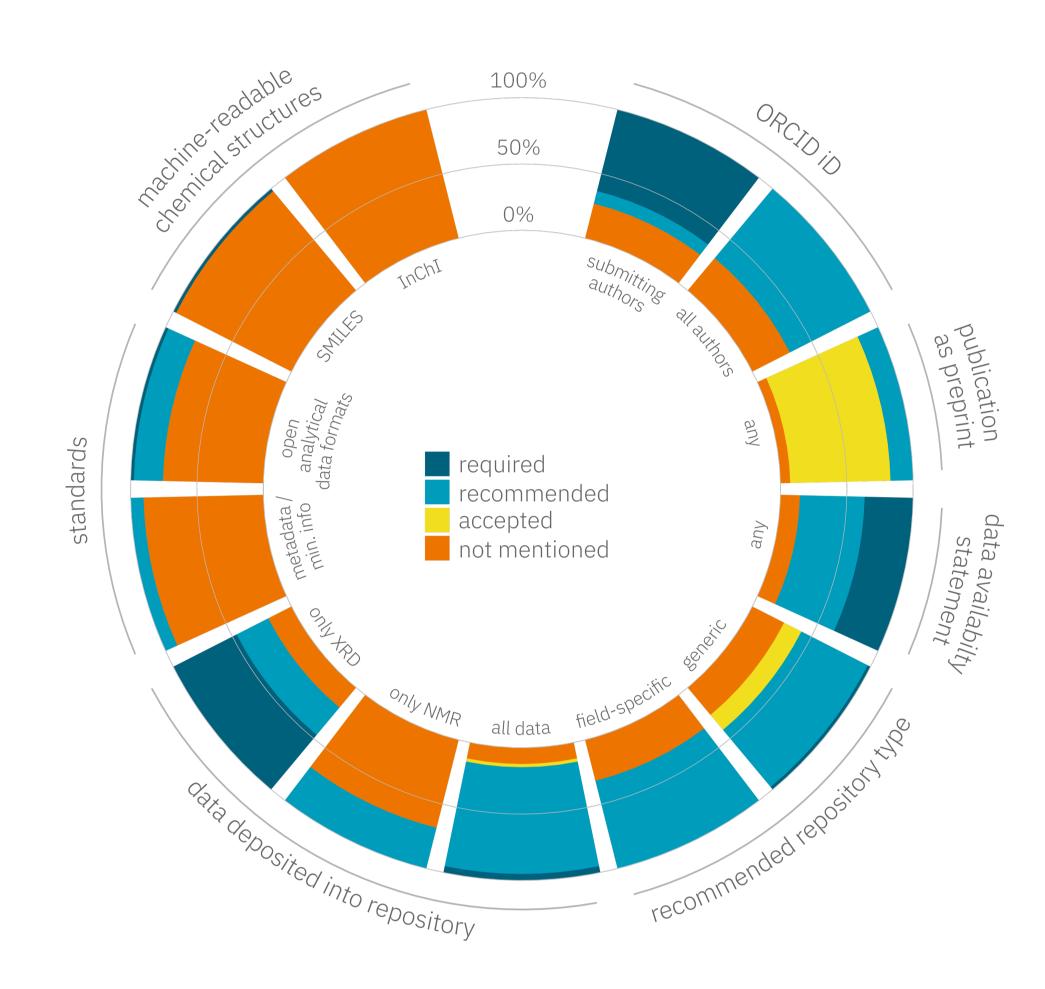**NFDI4Chem**
ENHANCE YOUR DATA.

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Author Guidelines in Chemistry

Our large-scale study of 42 chemistry-related journals from 13 different publishers investigated how the FAIR principles and Open Sciences practices are supported in publishing in chemistry.

The above image shows the surveyed categories and rating, along with the results of the survey. These results can be summarized as:

- All journals provide DOIs for their articles and the use of ORCID iDs is common practice; approx. two-thirds of surveyed journals require them for submitting authors and the same amount recommending them for all authors.

- 82% of journals require or recommend the submission of data availability statements.

- Data sharing is a well-established practice for crystallography, with approx. 75% of journals requiring or recommending XRD data be shared in a research data repository.

- Sharing of all underlying data is recommended by 85% of journals, while only 5% require it.

- The use of standards for metadata / minimum information and analytical data formats were rarely mentioned in the guidelines (10%).

- Machine-readable chemical structures were only mentioned by a single journal.

Read the paper in Pure and Applied Chemistry
DOI: 10.1515/pac-2022-1001

Check out the Data on RADAR4Chem
DOI: 10.22000/702

For more information, visit
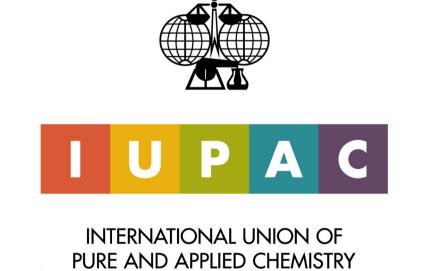www.nfdi4chem.de

Publication Standards

Publishing research data is widely regarded as good scientific practice but is not yet as common as sharing results in scientific articles. With movements towards FAIR data and Open Science practices, various aspects of academic publishing require updates. Standards can assist journals in implementing such updates both in their author guidelines, but also on a technical level.

Editors4Chem Workshop

The biennial Editors4Chem workshop, initially held in 2021, is organized in collaboration with IUPAC. Here, we work directly with journal editors to enhance pre-competitive collaboration between publishers to:

- Enhance recommendations on data publications

- Promote awareness on new developments in data publishing

- Address the implementation of technical solutions, e.g., submission system enhancements that include data publication support

- Gather ideas for additional pilot projects

- Identify opportunities for collaboration

IUPAC
INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

EDITORS 4Chem

The most recent workshop included talks on:

- Data availability statements in Beilstein Open Access journals

- Exchange formats for chemical structures (InChI Trust)

- Developing research data policy frameworks (PLOS)

- Linking Data and Articles via Scholix (CCDC)

- Cultural change in academia: What is holding people back from sharing their Data (NFDI4Chem)

Implementing Standards through Pilot Projects with Publishers

Pilot projects with specific journals and publishers, in which specific standards are implemented, serve as examples for wider rollout.

Some of these pilots are *domain-specific* to chemistry, such as:

- Recommendations on trusted chemistry-friendly repositories in author guidelines

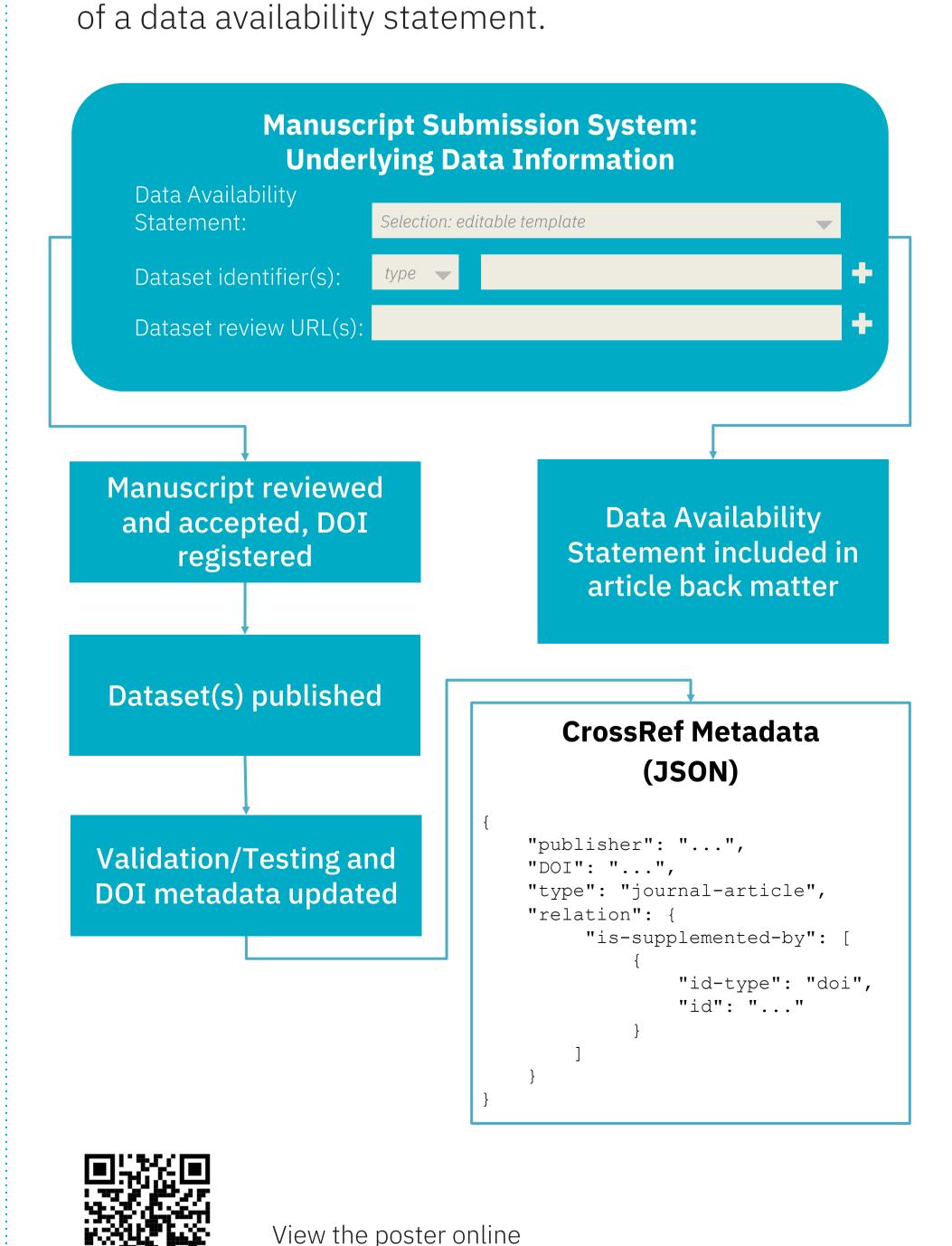- Recommendations to submit machine-readable chemical structures

Other pilots are *domain-independent* such as:

- Implementation of flexible data availability statements

- Metadata enrichment and linking of articles and datasets in their Crossref metadata.

PILOTS 4Chem

Pilot: Link Datasets to Articles in Crossref Metadata

The most recent pilot aims to improve how journals link articles to their respective datasets at Crossref metadata level. Correctly linking the dataset to its respective article is an integral aspect of the FAIR principles (F2, I3). The workflow below shows the proposed steps, including the automated generation of a data availability statement.

Manuscript Submission System: Underlying Data Information
Data Availability Statement:
Selection: editable template
Dataset identifier(s): type
Dataset review URL(s):

Manuscript reviewed and accepted, DOI registered

Data Availability Statement included in article back matter

Dataset(s) published

Validation/Testing and DOI metadata updated

CrossRef Metadata (JSON)

```
{
    "publisher": "...",
    "DOI": "...",
    "type": "journal-article",
    "relation": {
        "is-supplemented-by": [
            {
                "id-type": "doi",
                "id": "..."
            }
        ]
    }
}
```

View the poster online
DOI: 10.18154/RWTH-2023-10440