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## Enhancing Research Data Management: A Chemistry-Specific Exercise Catalogue

Workshops for researchers or students on research data management (RDM) skills are often offered by central RDM service facilities at universities or non-university research institutions. Although the basic aspects of RDM are discussed, there are often no discipline-specific examples or tools, so participants often lack a tangible relevance to their own research activities and would like to see more practical examples from their daily laboratory work.

NFDI4Chem, the chemistry consortium of the National Research Data Infrastructure, has been offering RDM training courses since 2021, teaching the basics of RDM in a chemistry context. Through a series of practical exercises, both face-to-face and online, participants create entry points into RDM and develop practical procedures for generating FAIR research data.

In order to enable the reusability of the workshop, NFDI4Chem is currently developing a catalogue of exercises that will provide both disciplinary and non-disciplinary RDM staff with specific examples and suggestions for designing an RDM workshop with a high degree of practical relevance to chemistry. The catalogue will categorise exercises by RDM topic and exercise type. Information on the duration of the exercise, a detailed description of the exercise with equipment requirements, recommendations for embedding in the overall context and examples enable direct implementation in RDM training courses or curricular teaching. The exercises included have been tested and developed within NFDI4Chem by its RDM trainers or have been inspired by previously published RDM training materials.

The exercises use portals such as the PubChem database, the re3data registry, the Chemotion and RADAR4Chem repositories, the NFDI terminology service and the open access Beilstein Journal of Organic Chemistry. In addition, the importance of metadata can be explored using reaction schemes, NMR spectra or microscopy images. A catalogue of requirements for the use of electronic laboratory books or a data management plan based on a chemical project description can be developed. Suggestions for generic exercises with chemistry-specific recommendations, e.g. on data lifecycle, FAIR principles, process management, data storage or repetition of previously taught aspects of RDM complete the exercise catalogue.

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