

# Beware the Hype of Digital Publishing

## Creating Useful Information Requires Work

by Martin G. Hicks and Carsten Kettner

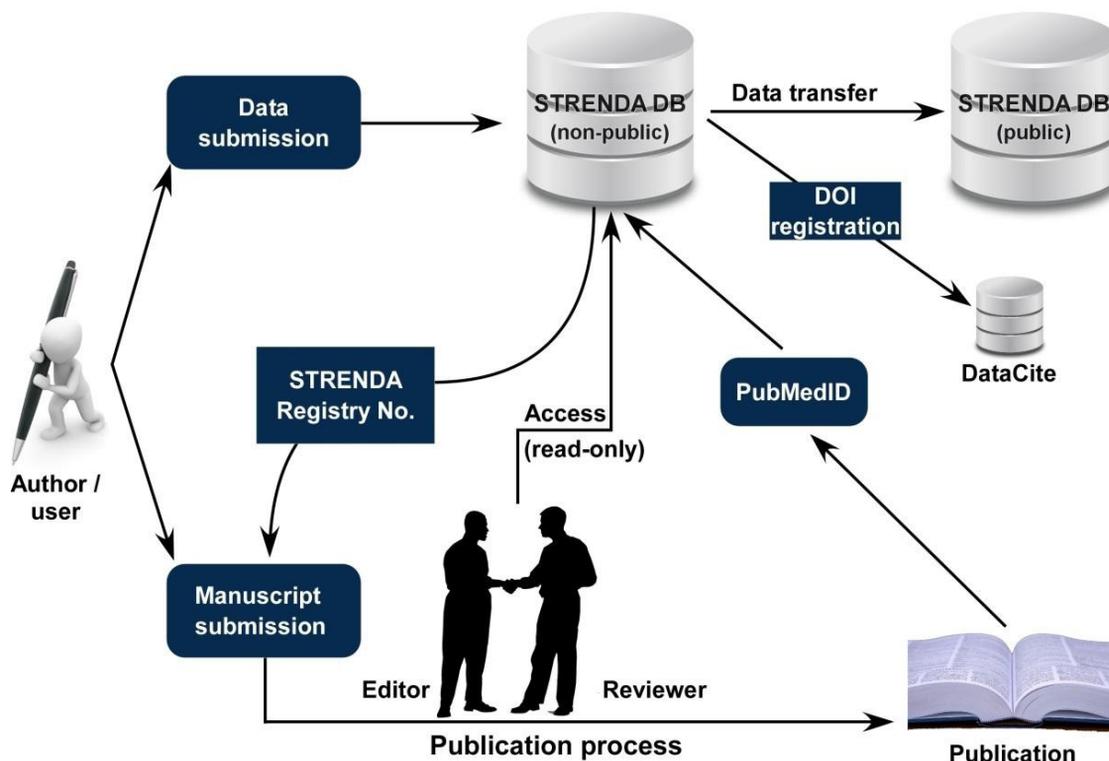
Scientific publishing is changing; Open Access allows for published information to be freely shared, and Open Data repositories [1] are improving our ability to share and (re-)use data. These and initiatives such as RDA, FORCE11, and FAIR, [2-4] are changing the way we perceive the notion of publishing science. In the laboratory, equipment is becoming interconnected and new technologies are producing vast amounts of data; transformative change is underway. New publication practices are required that address the needs of the data producers and the data users. Many community-based grassroots projects and initiatives have already successfully set up infrastructures for storing and sharing data.

With this background of change and disruption, we must not lose sight of the fact that science can only thrive if the research produces high quality, reproducible

results and data. 'Publish or perish' is the result of false incentivization. More and faster often translates into superficial and incremental. Thus, while new technologies should be embraced, they need to be implemented in ways that ensure good data reporting and allow validation, verification, and sharing.

The Beilstein-Institut publishes two platinum Open Access journals: the *Beilstein Journal of Organic Chemistry* and the *Beilstein Journal of Nanotechnology*. These two journals are unique in their fields, in that neither have APCs nor any other fees for authors or readers and both have been awarded the DOAJ Seal, [5] confirming an exceptionally high level of publishing standards and best practices. The Beilstein-Institut was one of the first publishers to check all incoming manuscripts for text similarity. In addition to the standard peer-review process, submitted manuscripts are checked by PhD scientists for consistency and plausibility. Through our internal editorial team, we see the many advantages that electronic publishing brings. However, there are disadvantages, such as the contribution of easy copy and paste to the prevalence of text plagiarism, and many potential advantages have yet to be realized, for example the routine reporting of validated experimental data.

Figure 1. The workflow for STRENDA-DB. The linking of validated data input with peer-reviewed article publishing ensures that the data are not only complete but have also been reviewed by experts.



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With its longstanding history in high-quality chemistry data, the Beilstein-Institut has initiated and runs two data standards projects: STRENDA and MIRAGE, [6,7] guidelines for data reporting in the areas of enzyme chemistry and glycomics. Both projects aim at proposing reporting guidelines to allow the readers to analyse, validate, corroborate, and interpret the findings in the publications. The guidelines are developed by a panel of leading international scientists in each of the corresponding fields in a consensus-driven process and in close consultation with the wider community. The STRENDA reporting guidelines are recommended by the major journals in biochemistry and the MIRAGE guidelines are starting to be adopted by the major journals in glycobiology. To improve their practical use by both authors and journals, the STRENDA guidelines have recently been implemented as a web-based front-end for STRENDA-DB. [8] This supports authors by providing a data submission form that automatically checks the manuscript data for compliance with the STRENDA guidelines prior to or during the publication process. The successful formal assessment is documented in a fact sheet that can be submitted with the manuscript to the journal. In addition, each dataset is assigned a DOI to allow the easy tracking and referencing of data. The data become publicly available in the open access database only after the corresponding article has been peer-reviewed and published in a journal. The workflow for manuscript and data processing is shown in Figure 1.

STRENDA-DB demonstrates how a community-driven initiative can not only produce data reporting guidelines, but, when combined with innovative software, can turn those guidelines into a practicable data validation and reporting system for research scientists, putting the data at the center of the publication process.

### References

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8. [www.beilstein-strenda-db.org](http://www.beilstein-strenda-db.org)

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## Celebrating 17 Years of InChI

### Status and Future of the IUPAC InChI: context and use cases

Building on the past and ongoing work of InChI working groups, a three-day meeting will be held next year on **16-18 August 2017** (Wed-Friday) on the main National Institutes of Health (NIH) campus in Bethesda, MD (short Metro/Subway ride from downtown Washington DC). The meeting will bring together the current InChI community and working groups that define the current state of the InChI project, together with other interested stakeholders. The aim is to discuss what is needed for the chemical, biomedical, materials, and related academic and industry communities for proper and useful structure standard representation of both small and large molecules, and the future direction and activities of InChI development will be a major goal of the meeting.

There is no registration fee to attend the meeting!

If you wish to attend, please sign up at [www.inchi-trust.org](http://www.inchi-trust.org)

We welcome suggestions for the meeting agenda and also offers of assistance in planning the meeting—please contact Steve Heller, the project director, at [steve@inchi-trust.org](mailto:steve@inchi-trust.org)