

The NIST Materials Data Curation System: A Practical Approach to the Long Tail of Materials Data and Metadata

ICME 2016

Alden Dima*, **Guillaume Sousa Amaral***, **Sharief Youssef***, **Marcus Newrock***, **Philippe Dessauw***, **Pierre Francois Rigodiat***, **Carelyn Campbell[†]**, **Zachary T. Trautt[†]**,

* Information Technology Laboratory (ITL)
National Institute of Standards and Technology (NIST)
100 Bureau Drive, Gaithersburg, MD 20899, USA
e-mail:alden.dima@nist.gov ,web page: <https://mgi.nist.gov>

[†] Material Measurement Laboratory (MML)
National Institute of Standards and Technology (NIST)
100 Bureau Drive, Gaithersburg, MD 20899, USA
e-mail: zachary.trautt@nist.gov, web page: <https://mgi.nist.gov>

ABSTRACT

Materials researchers attempting to use data-driven techniques to discover and design new materials often face issues that complicate their efforts. Materials data and metadata often exists in a variety of incompatible formats that limit the usefulness of the data to specific tools and uses. Access to scientific data and resources across the materials community is limited and fragmented. This talk will focus on the NIST Materials Data Curation System (MDCS), which provides a means for capturing, sharing, and transforming materials data[1,2]. This talk will provide an overview of the design of MDCS; highlighting how it can be modified by end users to meet domain-specific needs, such as the NIST Materials Resource Registry[3]. This talk will also provide an overview of functions demonstrating how the software can be deployed to address challenges faced by the long tail of materials data and metadata.

REFERENCES

- [1] <https://mgi.nist.gov/materials-data-curation-system>
- [2] <https://github.com/usnistgov/MDCS>
- [3] <https://mgi.nist.gov/materials-resource-registry>