Motivation for Working Group:

- Develop materials science-specific metadata standards
- Lay groundwork for a network of international Materials Resource Registries
- Can be the basis for other domain-specific metadata schemas

MRR WG comprises

- An international team representing different regions and sectors, including Asia, Europe, and North America
- Materials IG Co-Chairs as ex-officio members
- Co-Chairs who coordinate activities and facilitate interactions with other closely-related Interest and Working groups
- Recommended core members as “doers” in the materials and cognate communities to identify those in their organizations who need to be involved.

RDA as a platform for building international consensus
Core members

- Chandler Becker (NIST), convenor  US
- Scott Henry (ASM Int’l)  US
- Brian Matthews (STFC)  UK
- Debbie Mies (Granta)  UK/US
- Raphael Ritz? (NOMAD)  EU
- Yibin Xu (NIMS)  JP
- Haiqing Yin (Univ. Sci. & Tech.)  CN
- Laura Bartolo (Northwestern), ex officio  US
- James Warren (NIST), ex officio  US
Resource types
- Organizations
- Data collections
- Data sets
- Data services (APIs)
- Websites
- Software

Starting with NIST materials science inputs
- Strawman metadata schema
- Dublin Core plus extensions
- Using controlled vocabulary as much as possible

OAI-PMH for harvesting, synchronization
- Materials Resource Registry
Search for Resources

General Keyword search: compound

Results view:  

Access Policy Public

© 2014-2015 NIST Materials Resource Registry | Privacy Policy | Terms of Use | Credits | Administration
Search Results for 'compound'

All Resources | Organizations | Data Collections | Datasets | Services | Informational Sites | Software

Resource Type: All Resources

AFLOW

Publisher: AFLOW Consortium

Resource Type: Repository

Material Science: Material Types: Metal, Semiconductor, Organic
Morphology/Structures: Crystalline, Bulk, Thin Film, Clusters, Nano-
Materials, Polycrystalline, Phased Structures, Complex Structures

research data sharing without barriers
rd-alliance.org
We would register resources like:

- nanomaterialregistry.org
- nanohub.org
- ...
<table>
<thead>
<tr>
<th>Material Types</th>
<th>Metal</th>
<th>Semiconductor</th>
<th>Ceramic</th>
<th>Polymer</th>
<th>Biomaterial</th>
<th>Organic</th>
<th>Inorganic</th>
<th>Oxide</th>
<th>Composite</th>
<th>Nanomaterials</th>
<th>Superconductor</th>
<th>Non-Specific</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphology/Structures</td>
<td>Crystalline</td>
<td>Amorphous</td>
<td>Fluid</td>
<td>Quasi-periodic</td>
<td>Bulk</td>
<td>2-Dimensional</td>
<td>1-Dimensional</td>
<td>Film</td>
<td>Nanotube</td>
<td>Fiber</td>
<td>Composite</td>
<td>Interphase</td>
<td>Line Defect</td>
</tr>
<tr>
<td>Material Property Classes</td>
<td>Optical</td>
<td>Mechanical</td>
<td>Thermodynamic</td>
<td>Structural</td>
<td>Simulated</td>
<td>Defect</td>
<td>Non-Specific</td>
<td>Other</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Experimental Data Aquisition Methods</td>
<td>Electron Microscopy</td>
<td>Scattering/Diffraction</td>
<td>Calorimetry</td>
<td>Optical Microscopy</td>
<td>Indentation</td>
<td>Dilatometry</td>
<td>Other</td>
<td></td>
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<tr>
<td>Computational Data Aquisition Methods</td>
<td>Density Functional Theory</td>
<td>Molecular Dynamics Simulation</td>
<td>Numerical Simulations</td>
<td>Multiscale</td>
<td>Finite Element Analysis</td>
<td>Computational Thermodynamics</td>
<td>Statistical Mechanics</td>
<td>Dislocation Dynamics</td>
<td>Phase Field</td>
<td>Crystal Plasticity</td>
<td>Other</td>
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<td></td>
</tr>
<tr>
<td>Sample Processing Methods</td>
<td>Casting</td>
<td>Annealing</td>
<td>Vapor Deposition</td>
<td>Milling</td>
<td>Extrusion</td>
<td>Pressing</td>
<td>Exfoliation</td>
<td>Melt Blending</td>
<td>Polymerization</td>
<td>Curing</td>
<td>Evaporation</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>
**Major data providers**

- **Local Publishing Registry**
- **Full Searchable Registry**
- **Materials Resource Registry**

**OAI/PMH**

- *harvest (pull)*

- *search queries*

**Users, applications**

- *replicate*
The National Data Service (NDS) is an emerging vision for how scientists and researchers across all disciplines can find, reuse, and publish data. It builds on the data archiving and sharing efforts already underway within specific communities and links them together with a common set of tools designed around the following capabilities:

- **Search**: The NDS will allow users to easily search for data across disciplinary boundaries. As users hone in on data of interest, they can easily switch to discipline-specific tools.

- **Publish**: The NDS will connect users to tools for building and sharing collections of data. It will help users find and deliver data to the best repository for data-publishing.

- **Link**: The NDS will create robust connections between data and published articles. When researchers reference an article, they have ready access to the underlying data.

- **Reuse**: The NDS will not only provide access to data for download, it will provide tools for transferring data to processing platforms or allow analysis to be attached to the data.

http://www.nationaldataservice.org/