Radiopurity.org Materials Database Development

Chris Jackson

What is radiopurity.org?

A database to track and share radioactive assay results

What is the aim?

Support the fundamental physics community designing and building low background experiments

What is the framework?

- Material Assay Data Format (MADF)
  - Standardized, but flexible, json format
- Database Assistant
  - Open-source format for storing, displaying and manipulating MADFs
- Public Instance
  - Maintained by SNOLAB
  - Can share results easily with community when ready

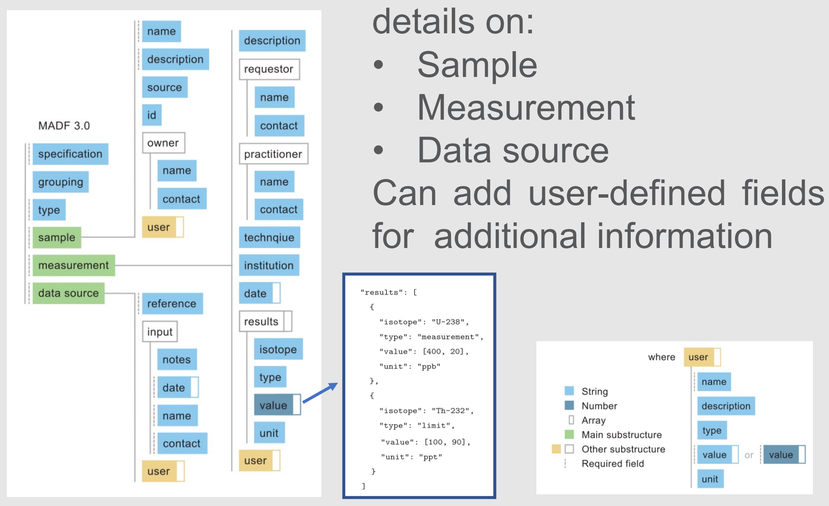
radiopurity.org

Data format:

MADF is a data format designed for assays. Tracks details on:

- Sample
- Measurement
- Data source

Can add user-defined fields for additional information



Visit the site:

www.radiopurity.org

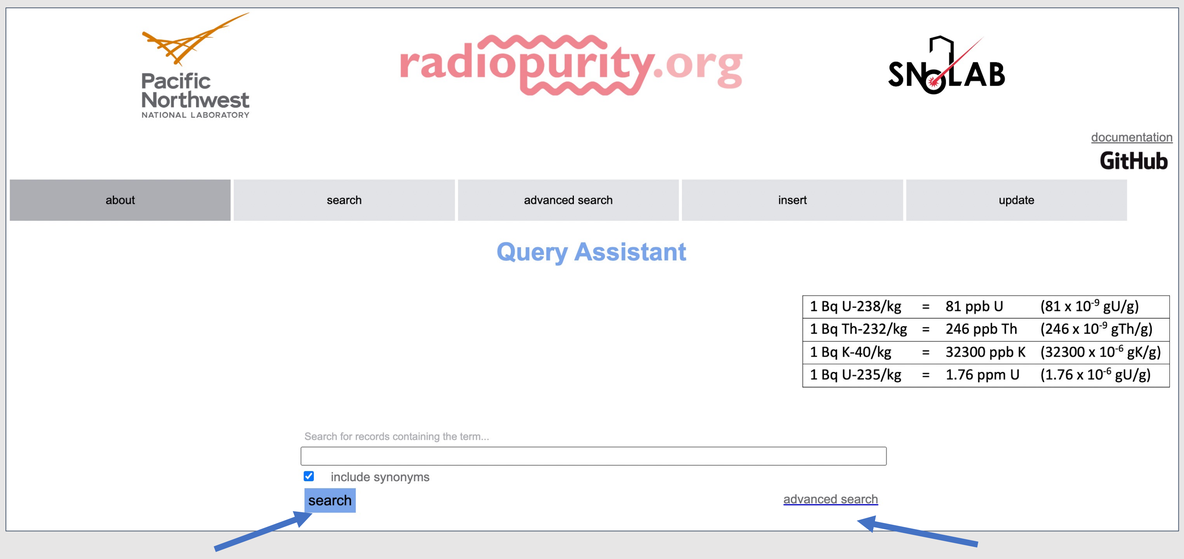
Feedback? Data to share?

radiopurity@snolab.org

Download the open-source code:

github.com/pnnl/Radiopurity-database-assistant

How to use:

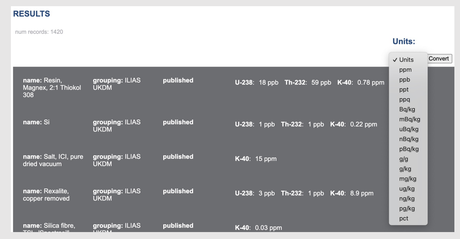


Search from homepage

Advanced search

Recent development:

- Search improvements
  - Search all, summary Information
  - New synonym capability (e.g. Cu/copper)
  - New published/unpublished data flag
  - New unit conversion
- Guided data entry page
- Data update feature



Backend Development:

- New modern MongoDB database, replacing deprecated CouchDB tools
- New python-based toolkit for access and large dataset upload
- Improved data security, database changes tracked and versioned
- Improvements to website uptime
- Containerized deployment

Coming soon:

- Docker tools for easy database deployment
  - Dedicated radiopurity.org for your experiment, institution, group
  - Allows easy option to share data (when ready)
- Cloud-based website deployment
  - Full uptime for database

Future plans:

- Federated database structure. Simple sharing of data when ready to share.
- Supporting the low background RDC collaborations

What else would help your experiment? Let us know?

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