Unifying and Creating Links Between Research Outputs at the Department of Energy

*October 23, 2018*
*FDLP Annual Conference*

**Carly Robinson, PhD**
Acting Associate Director for Access and Operations
Office of Scientific and Technical Information
Office of Science
US Department of Energy
DOE Invests ~$12B per year in R&D

≈ 50,000 STI “products” per year

SCIENTIFIC & TECHNICAL INFORMATION (STI/ R&D Results)
- Journal Articles/Accepted Manuscripts
- Technical reports
- Conference papers
- Theses/Dissertations
- Software/Code
- Datasets
- Patents
- Workshop reports
- Videos

NATIONAL LABS
- Ames
- Argonne
- Brookhaven
- Fermi
- Idaho
- Los Alamos
- Lawrence Berkeley
- Lawrence Livermore
- NETL
- NREL
- Oak Ridge
- Pacific Northwest
- Princeton
- SLAC
- Sandia
- Savannah River
- Thomas Jefferson

GRANTEES
OSTI’s Mission

OSTI has DOE-wide responsibility for ensuring access to DOE-funded scientific and technical information (STI).

Energy Policy Act of 2005: “The Secretary, through the Office of Scientific and Technical Information, shall maintain within the Department publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial applications activities supported by the Department.”

Mission

Advance science and sustain technological creativity by making R&D findings available and useful to Department of Energy researchers and the public.

Core Functions

- Collect
- Preserve
- Disseminate
OSTI’s Core Functions - Collection

- OSTI coordinates the Scientific and Technical Information Program (STIP) which is a Department-wide collaboration, with points of contact at every DOE office, laboratory, and facility.

- OSTI uses the DOE corporate system (E-Link) to collect the results of DOE-funded research results from DOE labs and grantees
Digitization of 1 million papers dating to Manhattan Project

- Including works by Fermi, Wigner, Teller, Seaborg, Nobel Laureates
- ≈600,000 still need to be digitized

- Fulfills DOE’s obligations to NARA (National Archives and Records Administration)
- Maintains backup and mirror site for disaster recovery
- Hosts dark archive for distributed content
OSTI’s Core Functions - Dissemination

- Develops and hosts search tools to make DOE R&D results available

- Federates search tools across U.S. and international science agencies

- Partners with Google, Bing, and others to make DOE’s deep database content accessible to surface web search engines
Primary Search Tool – OSTI.GOV

https://www.osti.gov/
Submit Research Results

What is STI?

Scientific research and development findings are scientific and technical information (STI), and there are many types of STI: journal articles, technical reports, scientific software, data, bibliographic citations, patents, conference papers, books, multimedia, and others. While most STI from DOE research and development (R&D) activities is unclassified and publicly available, STI may also be Classified, Unclassified Controlled Nuclear Information (UCNI), or Controlled Unclassified Information (CUI). DOE-funded STI originates primarily from research and other activities performed by site/facility management contractors (e.g., DOE national labs), direct DOE-executed prime procurements, DOE-operated research facilities, and financial assistance recipients or grantees, in addition to DOE employees.

Why Submit Your STI?

Under the law, DOE is required to broadly disseminate unclassified, non-sensitive STI. Beyond helping DOE account for the results of its R&D investments, submitting your DOE-funded STI increases the knowledge base for everyone, advances science as a whole, and increases technological creativity. OSTI.GOV and other specialized Search Tools from OSTI offer free public access to DOE's research results. Our partnerships with commercial search engines further the discoverability of DOE-funded research. Comprehensive submission of STI by DOE national laboratories, facilities, and programs, and by DOE financial assistance recipients and grantees, advances science and supports DOE's scientific and technological innovation mission. In support of comprehensive STI submissions, OSTI manages the Scientific and Technical Information Program (STIP).

How to Submit Your STI?

Choose your affiliation below to learn more about submitting STI to OSTI.
Public Access Policy

Public access comprises the efforts of U.S. federal science agencies to increase access to unclassified scholarly publications and digital data resulting from federal research and development (R&D) funding. While OSTI has provided public access to DOE's unclassified R&D results throughout its history, the incremental change reflected in the DOE Public Access Plan is the addition of final accepted manuscripts/journal articles, which OSTI makes publicly available within 12 months of publication. Access is provided through both OSTI.GOV and the DOE Public Access Gateway for Energy and Science (DOE PAGES).

Below are links to key information about DOE's public access efforts.

Data Services & Developer Tools

The Office of Science and Technical Information (OSTI) offers data services and developer tools to ensure that DOE researchers have efficient access to the research and development (R&D) information they need to speed the pace of discovery. Through the tools below, we aim to provide comprehensive data support for records available on OSTI.GOV and other search tools.
About

About the DOE Office of Scientific and Technical Information (OSTI)

The Department of Energy (DOE) Office of Scientific and Technical Information (OSTI), a unit of the Office of Science, is responsible for collecting, preserving, and disseminating both classified and declassified scientific and technical information. OSTI receives and manages approximately 70% of all DOE-funded research and development (R&D) activities at DOE national laboratories. As a trusted steward of science, the Office of Scientific and Technical Information (OSTI) provides online access to DOE's scientific and technical information on a broad range of topics. OSTI manages the DOE fulltext search engine, which leverages metadata from the DOE fulltext database to provide quick and easy access to fulltext documents. It also maintains several important DOE information systems, including the DOE Environmental Management Information System (EMIS) and the Integrated Computational Materials Information (ICMI) System.

Established in 1947, OSTI grew out of the post-World War II initiative to make the scientific research of the government available to the public. Its corporate function is authorized in several laws covering DOE and its predecessors. The U.S. Code (241.18) designates OSTI as the office responsible for the management and control of DOE scientific and technical information. OSTI is appropriately managed as part of the DOE mission to advance scientific knowledge and expand the use of information technology.

About OSTI.gov

OSTI.gov is the primary search tool for DOE science, technology, and engineering research and development information. It consolidates OSTI's home page and database interfaces.

OSTI.gov makes available over 70 years of research results from DOE and its predecessor agencies through its DOE Digital Library, which includes over 450,000 full-text documents. OSTI.gov also provides access to DOE's fulltext search engine and a variety of other tools and resources. OSTI.gov includes a variety of search filters, including DOE-funded R&D results, technical support for submitting research results using OSTI's online resources, and information about the Office of Scientific and Technical Information and its resources.

In consultation with researchers across the DOE complex, OSTI works continuously to improve the process tools and to make access to DOE R&D results quicker, more convenient, and more complete than ever before. These innovations and enhancements are part of OSTI's ongoing efforts to make science more open, efficient, and reproducible – and to better serve the needs of DOE-funded scientists and the American public.
ScienceCinema Improvements and Progress

Searching ScienceCinema is better and faster thanks to a complete overhaul of the search code which optimized and increased speed and responsiveness. The search results allow for quick viewing of the video snippets without leaving the results page. ScienceCinema records have been reprocessed to expand the amount of searchable audio content, and to ensure that result snippets are up-to-date. New thumbnails and more accurate descriptors and metadata have also been added, so videos are even more findable....
OSTI.GOV Searching

- Basic Search
- Advanced Search

- Two methods of searching:
  - Semantic Search – uses keyword-to-concept mapping to expand upon your chosen search terms
    - Available via the basic search box
  - Term search – uses Boolean operators to perform a search based only on the terms you provide
    - Available in every field in the Advanced Search
1. Production rate measurement of Tritium and other cosmogenic isotopes in Germanium with CDMSlite

Agneres, R.; Aciak, T.; Aramaki, T.; Aste Particle Physics

Future direct searches for low-mass dark matter particles with germanium detectors, such as SuperCDMS SNOLAB, are expected to be limited by backgrounds from radioactive isotopes activated by cosmogenic radiation inside the germanium. There are limited experimental data available to constrain production rates and a large spread of theoretical predictions. We examine the calculation of expected production rates, and analyze data from the second run of the CDMS low ionization threshold experiment (CDMSlite) to estimate the rates for several isotopes. We model the measured CDMSlite spectrum and fit for contributions from tritium and other isotopes. Using the knowledge of the detector history, these results are converted to cosmogenic production rates at sea level. The production rates in atoms/kg.

DOI: 10.1016/j.astrophys.2018.06.005

2. One-step nonlinear electrochemical synthesis of Te x S y @PANI nanorod materials for Li-Te x S y battery

Li, Jun; Yuan, Yifan; Jin, Hulla; Aste Energy Storage Materials

As a promising cathode material for rechargeable lithium-ion batteries, tellurium has attracted great deal of attention due to its high conductivity and high theoretical capacity. Yet, the large volume expansion (~104 vol%) during Li+Te alloying process prevents the application of Li-Te battery. Here, by using a novel one-step nonlinear electrochemical approach, we prepared a Te6xS4y@polyaniline nanorod composites, in which elemental sulfur is successfully embedded into tellurium matrix to effectively tackle the volumetric variation problem. In situ transmission electron microscopy (TEM) of the Li-Te (de)alloying process on single Te6xS4y@polyaniline particle demonstrated that the volumetric variation was efficiently suppressed.

DOI: 10.1916/j.jesm.2018.04.019

3. Timescales of energy storage needed for reducing renewable energy curtailment

Denholm, Paul; Miall, Trea; Aste Renewable Energy

Integrating large amounts of variable generation (VG) resources such as wind and solar into a region's power grid without causing significant VG curtailment will likely require increased system flexibility via changing grid...
1. Production rate measurements of cosmogenic isotopes in Germanium with CDMSlite

Agnese, R.; Aralia, T.; Aramaki, T.; ... - Astroparticle Physics

Future direct searches for low-mass dark matter particles with germanium detectors, such as SuperCDMS SNOLAB, are expected to be limited by backgrounds from radioactive isotopes activated by cosmogenic radiation inside the germanium. There are limited experimental data available to constrain production rates and a large spread of theoretical predictions. We examine the calculation of expected production rates, and analyze data from the second run of the CDMS low ionization threshold experiment (CDMSlite) to estimate the rates for several isotopes. We model the measured CDMSlite spectrum and fit for contributions from tritium and other isotopes. Using the knowledge of the detector history, these results are converted to cosmogenic production rates at sea level. The production rates in atoms/(kg

DOI: 10.1016/j.astropartphys.2018.08.006

2. One-step nonlinear electrochemical synthesis of Te x S y @PANI nanorod materials for Li-Te x S y battery

Li, Jun; Yuan, Yifei; Jin, Hui; ... - Energy Storage Materials
Conductive two-dimensional titanium carbide ‘clay’ with high volumetric capacitance

Ghidiu, Michael; Lukatskaya, Maria R.; Zhao, Meng-Qiang; ... - Nature (London)

Safe and powerful energy storage devices are becoming increasingly important. Charging times of seconds to minutes, with power densities exceeding those of batteries, can in principle be provided by electrochemical capacitors—in particular, pseudocapacitors. Recent research has focused mainly on improving the gravimetric performance of the electrodes of such systems, but for portable electronics and vehicles volume is at a premium. The best volumetric capacitances of carbon-based electrodes are around 300 farads per cubic centimetre; hydrated ruthenium oxide can reach capacitances of 1,000 to 1,500 farads per cubic centimetre with great cyclability, but only in thin films. Recently, electrodes made of more »
Conductive two-dimensional titanium carbide 'clay' with high volumetric capacitance

Abstract

Safe and powerful energy storage devices are becoming increasingly important. Charging times of seconds to minutes, with power densities exceeding those of batteries, can in principle be provided by electrochemical capacitators—in particular, pseudocapacitors. Recent research has focused mainly on improving the gravimetric performance of the electrodes of such systems, but for portable electronics and vehicles volume is at a premium. The best volumetric capacitances of carbon-based electrodes are around 300 farads per cubic centimetre; hydrated ruthenium oxide can reach capacitances of 1,000 to 1,500 farads per cubic centimetre with great cyclability, but only in thin films. Recently, electrodes made of two-dimensional titanium carbide (Ti$_3$C$_2$, a member of the 'MXene' family), produced by etching aluminium from titanium aluminium carbide (Ti$_3$AlC$_2$, a 'MAX' phase) in concentrated hydrofluoric acid, have been shown to have volumetric capacitances of over 300 farads per cubic centimetre. In this paper, we report a method of producing this material using a solution of lithium fluoride and hydrochloric acid. The resulting hydrophilic material swells in volume when hydrated, and can be shaped like clay and dried into a highly conductive solid or rolled into films tens of micrometres thick. Additive-free films of this titanium carbide...
ORCID Integration

OSTI.GOV | U.S. Department of Energy
Office of Scientific and Technical Information

Search 2.14 million Department of Energy research results

Submit Research Results | Search Tools | Public Access Policy | Date Services & Dev Tools | About | FAQs | News

Sign In

If you already have an OSTI-GOV GoToChet or DOE PAGES account, enter your email address and password below to sign in. OSTI has recently added new features for members of the DOE community that may be activated with some additional account information. When signed in, please visit your account management screen to ensure that your account information is complete and up-to-date. You may view saved searches, export bibliographies and create content alerts from your account management screen. Your current login credentials may be used across OSTI discovery tools.

Email Address: [Field]
Password: [Field]

Create Account
Sign In

ORCID Account Integration

ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. Find out more.

If you have an ORCID ID, you have everything you need to authorize OSTI-GOV to add items to your ORCID Works. Once authorized, you will be able to browse OSTI-GOV search results for your documents and add them directly to your ORCID Works information.

You also have the option to authorize OSTI, if any records are submitted to OSTI via via EVA with your ORCID identifier numbers to automatically add them to your ORCID Works. To ensure you benefit from this service, please leave the authorization service box checked on your ORCID account.

For more detailed information, please visit our ORCID FAQ.

Create or connect your ORCID ID
ORCID Account Integration

ORCID provides a persistent digital identifier that distinguishes researchers through integration in key research workflows such as manuscript submission, automated linkages between you and your professional activity, and recognition. Find out more.

If you have an ORCID id, you have everything you need to authenticate through ORCID Works. Once authorized, you will be able to browse ORCID documents and add them directly to your ORCID Works info.

You also have the option to authorize OSTI, if any records are associated with your ORCID identification number, to automatically add them to your OSTI profile from this service, please leave the authorization selection blank.

For more detailed information, please view our ORCID FAQ.

Create or connect your ORCID ID
ORCID Account Integration

ORCID Account Details

Name: Carly Robinson

ORCID: https://orcid.org/0000-0002-8523-1478
Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization

Studwell, Sara; Robinson, Carly; Elliott, Jamee

April 2017 - Data Science Journal

Scientific research is producing ever-increasing amounts of data. Organizing and reflecting relationships across data collections, datasets, publications, and other research objects are essential functionalities of the modern science environment, yet challenging to implement. Landing pages are often used for providing 'big picture' contextual frameworks for datasets and data collections, and many large-volume data holders are utilizing them in thoughtful, creative ways. The benefits of their organizational efforts, however, are not realized unless the user eventually sees the landing page at the end point of their search. What if that organization and 'big picture' context could benefit the user at the... more >

DOI: 10.5334/dsj-2017-017
Full Text Available
Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization

Studwell, Sara; Robinson, Carly; Elliott, Jannean

April 2017 - Data Science Journal

Scientific research is producing ever-increasing amounts of data. Organizing and reflecting relationships across data collections, datasets, publications, and other research objects are essential functionalities of the modern science environment, yet challenging to implement. Landing pages are often used for providing 'big picture' contextual frameworks for datasets and data collections, and many large-volume data holders are utilizing them in thoughtful, creative ways. The benefits of their organizational efforts, however, are not realized unless the user eventually sees the landing page at the end point of their search. What if that organization and 'big picture' context could benefit the user at the...
ORCID Account Integration

ORCID Account Details

ORCID Works in OSTI.GOV

Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization
Carly Robinson

You haven't added any funding, add some now

Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization
Data Science Journal
2017-04 | journal-article
DOI: 10.5334/dsj-2017-017
OTHER ID: 1352141

Optical growth of highly viscous organic/sulfate particles
J Atmos Chem
2014-06 | journal-article
DOI: 10.1007/s11087-014-9287-8

Impact of Organic Coating on Optical Growth of Ammonium Sulfate Particles
2013 | journal-article
DOI: 10.1021/es4023128

Thermal desorption metastable atom bombardment ionization aerosol mass spectrometer
International Journal of Mass Spectrometry
2011-06 | journal-article
DOI: 10.1016/j.ijms.2011.01.027
Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization

Abstract

Scientific research is producing ever-increasing amounts of data. Organizing and reflecting relationships across data collections, datasets, publications, and other research objects are essential functionalities of the modern science environment, yet challenging to implement. Landing pages are often used for providing 'big picture' contextual frameworks for datasets and data collections, and many large-volume data holders are utilizing them in thoughtful, creative ways. The benefits of their organizational efforts, however, are not realized unless the user eventually sees the landing page at the end point of their search. What if that organization and 'big picture' context could benefit the user at the beginning of the search? That is a challenging approach, but The Department of Energy's (DOE) Office of Scientific and Technical Information (OSTI) is redesigning the database functionality of the DOE Data Explorer (DDE) with that goal in mind. Phase I is focused on redesigning the DDE database to leverage relationships between two existing distinct populations in DDE, data Projects and individual Datasets, and then adding a third intermediate population, data Collections. Mapped, structured linkages, designed to show user relationships, will allow users to make informed search choices. These linkages will be sustainable and scalable, created automatically with the use of more »

Authors:

Studwell, Sara [ ]; Robinson, Carly [ ]; Elliott, Jannean [ ]

Publication Date:

2017-04-04

Research Org.:

Office of Scientific and Technical Information, Oak Ridge, TN (United States)
**OSTI Use of Digital Object Identifiers (DOIs)**

**DOI Benefits**
- DOIs enable researchers to more easily discover, access, and reuse STI
- DOIs facilitate linkages among documents or published articles, their underlying datasets, and other related research objects
- DOIs make STI more citable and easy to cite in a standardized way, encouraging authors to include this step in their writing/publishing activities

**Crossref – Joined in 2004**
- Assign Crossref DOIs to DOE-funded technical reports

**DataCite – Joined in 2011**
- Assign DataCite DOIs to datasets
- OSTI provides the DOE Data ID Service, a free DOI assignment service for DOE-funded research data
- Provide a DOI service to other federal agencies through cost recovery model
- In 2017, began assigning DataCite DOIs to software through DOE CODE
DOE Data ID Service – Assigning DataCite DOIs

BES Data Client: Materials Project

OSTI has assigned over 72,000 DOIs for DOE-funded datasets

This high-volume client submits automatically via OSTI’s API and has registered over 70K DOIs.

DOI links back to MP data.

Record with a live DOI becomes available in OSTI.GOV and DDE.

DOI links back to MP data.

DOI "10.17188/1342472"

Validated and minted by

Journal article cites MP data.

DOI links back to MP data.
Data Discovery – DOE Data Explorer

DOE Data Explorer

Explore science, technology, and engineering data from the US Department of Energy

Explore DOE Data

Explore Projects

Explore Collections

Explore Datasets

A data Project is a specific research group, data center, user facility, or other DOE-funded endeavor that is creating research data.

A data Collection is a package of related datasets with a DOI for the entire Collection.

A Dataset is a single instance of data whose boundaries have been defined by the data creator, with a DOI associated.
Search for: climate

1. Climate Change Science Institute (CCSI)
Climate Change Science Institute (CCSI), Oak Ridge National Laboratory (ORNL), Oak Ridge, TN (United States)

   The Climate Change Science Institute (CCSI) was formed in 2009 to integrate climate science activities across Oak Ridge National Laboratory. Approximately, 130 scientists are doing research in the areas of (i) earth system modeling, (ii) data integration, dissemination, and informatics, (iii) integrative ecosystem science/terrestrial ecosystem [more]

2. Next-Generation Ecosystem Experiments (NGEE) - Tropics
Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States); NCEE-TRPC (Next-Generation Ecosystem Experiments – Tropics); Brookhaven National Laboratory (BNL), Upton, NY (United States); Los Alamos National Lab. (LANL), Los Alamos, NM (United States); Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States); Pacific Northwest National Lab. (PNNL), Richland, WA (United States); National Institute of Amazonian Research (INPA), Petrópolis, Manaos (Brazil); International Institute of Tropical Forestry (IITF), San Juan, Puerto Rico; National Aeronautics and Space Administration (NASA), Washington, D.C. (United States); National Center for Atmospheric Research (NCAR), Boulder, CO (United States); Smithsonian Tropical Research Institute, Ancon, Panama City (Panama)

   The Next-Generation Ecosystem Experiments—Tropics, or NGE-Tropics, is a ten-year, multi-institutional project aiming to fill the critical gaps in knowledge of tropical forest-climate system interactions. The overarching goal of NGE-Tropics is to develop a predictive understanding of how tropical forest carbon balance and climate system feedbacks [more]

3. Next-Generation Ecosystem Experiments (NGEE) - Arctic
Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States); Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States); University of Alaska Fairbanks, Fairbanks, AK (United States); Los Alamos National Lab. (LANL), Los Alamos, NM (United States)

   The Next-Generation Ecosystem Experiments (NGEE Arctic) is a 10-year project (2012 to 2022) to reduce uncertainty in ESMs through developing a predictive understanding of carbon-rich Arctic system processes and feedbacks to climate. This is achieved through experiments, observations, and synthesis of existing datasets that [more]
ARM focuses on obtaining continuous measurements—supplemented by field campaigns—and providing data products that promote the advancement of climate models. ARM data include routine data products, value-added products (VAPs), field campaign data, complementary external data products from collaborating programs, and data contributed by ARM principal investigators for use by the scientific community. Data quality reports, graphical displays of data availability/quality, and data plots are also available from the ARM Data Center. Serving users worldwide, the ARM Data Center collects and archives approximately 20 terabytes of data per month. Datasets are generally available for download within 48 hours.

Product Type: Project

Project Lead: Prakash, Girilal

Research Org(s): Argonne National Lab. (ANL), Argonne, IL (United States); Brookhaven National Laboratory (BNL), Upton, NY (United States); Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States); Lawrence Livermore National Lab. (LLNL), Livermore, CA (United States); Los Alamos National Laboratory (LANL), Los Alamos, NM (United States); National Renewable Energy Lab. (NREL), Golden, CO (United States); Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States); Pacific Northwest National Lab. (PNNL), Richland, WA (United States); Sandia National Lab. (SNL-CA), Livermore, CA (United States)

Sponsoring Org: USDOE Office of Science (SC), Biological and Environmental Research (BER) (SC-23)

Geolocation: -84.306185, 35.924878

Subject: 54 ENVIRONMENTAL SCIENCES; climate research; atmospheric radiation; precipitation radar; instrument; cloud radar; carbon flux, carbon concentration, climate model; broadband radiometer, ARM

OSTI Identifier: 1374161

Project Location: Oak Ridge, TN
1. ARM: Balloon-borne sounding system (BBSS): Vaisala-processed winds, press., temp, and RH
   Richard Coulter; Jenni Kyrycz; Donna Holdridge
   Balloon-borne sounding system (BBSS): Vaisala-processed winds, press., temp, and RH
   DOI: 10.5439/1021460
   [Details] [View Dataset]

2. ARM: Aerosol Observing System (AOS): auxiliary data
   Ogren, John; Jefferson, Anne; Sheridan, Patrick
   Aerosol Observing System (AOS): auxiliary data
   DOI: 10.5439/1025148
   [Details] [View Dataset]

3. ARM: Baseline Solar Radiation Network (BSRN): solar irradiances
   Anderberg, Mary; Reda, Ibrahim; Andreas, Athis; Kuchenreuter, Mark; Habte, Aron; Doornlag, Mike
   Baseline Solar Radiation Network (BSRN): solar irradiances
   DOI: 10.5439/1025163
   [Details] [View Dataset]

4. ARM: GRAMS: calibration information for the total solar broadband radiometer (TBBR)
   Tooman, Tim
   GRAMS: calibration information for the total solar broadband radiometer (TBBR)
   DOI: 10.5439/1025164
   [Details] [View Dataset]
Submit a New Software Project

More detailed information on this process can be found on our Help page

**Repository Information (Fields Required)**

* Project Type
  - Open Source, Publicly Available Repository
  - Open Source, No Publicly Available Repository
  - Closed Source, Site Hosted
  - Closed Source, OSTI Hosted

**Product Description (Fields Required)**

**Developers (Fields Required)**

**DOI and Release Date**

- Show Additional Optional Fields
- Save Your Progress
- Submit Project
Submit a New Software Project

More detailed information on this process can be found on our Help page

Repository Information (Fields Required)

Product Description (Fields Required)

* Software Title (Required Field)

* Description/Abstract (Required Field)

* Licenses (Required Field)

Select your license(s)

Programming Languages (Optional Field)

Select your programming language(s)

Version Number (Optional Field)

Documentation URL (Optional Field)

Developers (Fields Required)

DOI and Release Date

Show Additional Optional Fields

Save Your Progress

Submit Project
Submit a New Software Project

More detailed information on this process can be found on our Help page

Repository Information (Fields Required)

Product Description (Fields Required)

Developers (Fields Required)

DOI and Release Date

DOI (Optional Field)

Release Date (Optional Field)

Show Additional Optional Fields  Save Your Progress  Submit Project
Repository Services

Through DOE CODE, the Department of Energy (DOE) Office of Scientific and Technical Information (OSTI) offers DOE-funded developers and researchers both public and private software/code repository service options:

- Developers can use the OSTI GitHub repository to develop or host open source projects.
- Developers can use the Internal DOE CODE GitLab instance to develop or host projects needing controlled access.

Both of these repository services are optional and separate from the submission process of software/code to DOE CODE.

If you are interested in making use of the GitHub or GitLab services and would like to request to join the DOE CODE GitHub community, please fill out the request form. For any questions about the repository services, contact doecoderpositories@osti.gov.

If you already have a repository account with DOE CODE:

Create a new project on our open source GitHub community. Create a new project on our internal DOE CODE repository where you can control access to the project.
DOE CODE Developed Open Source

DOE CODE
DOE code repositories collected and preserved by the USDOE Office of Scientific and Technical Information. To join email doe coderespositories@ost.gov.

Grow your team on GitHub
GitHub is home to over 28 million developers working together. Join them to grow your own development teams, manage permissions, and collaborate on projects.

Sign up

client
The project containing the client implementation for DOECode.
- HTML: Updated an hour ago

server
Back-end services and application for the DOECode web app.
- Java: Updated an hour ago

dev-test-repo
This is a repository used by the DOE Code development team for testing.
1. T2Well/ECO2N Version 1.0: Multiphase and Non-Isothermal Model for Coupled Wellbore-Reservoir Flow of Carbon Dioxide and Variable Salinity Water

Oldenburg, Curt; Pruess, Karsten; Wu, Yu-Shu;  Release Date: 2018-09-19

T2Well/ECO2N is a coupled wellbore and reservoir model for simulating the dynamics of CO2 injection and leakage through wellbores. It can be seen as an extension to standard TOUGH/ECO2N V2.0, and can be applied to situations relevant to geologic CO2 storage involving upward flow (e.g., leakage) and downward flow (injection). The new simulator integrates a wellbore-reservoir system by assigning the wellbore and reservoir to two different sub-domains in which flow is controlled by appropriate physical laws. In the reservoir, we model flow using a standard multiphase Darcy flow approach. In the wellbores, we use the Drift-Flux Model and related conservation principles. More>>

DOI: 10.11578/dc.20180919.3 | Landing Page

2. LOOP-LESS CODE GENERATOR FOR WELL-DEFINED COMPUTATIONAL TASKS

Wang, Jesse; Release Date: 2016-09-06

Loop-Less Code Generator for small even-size matrices multiplication for AMD GPUs.

---

**SEARCH FOR:**

All Projects

**REFINE BY:**

PROJECT TYPE

- Open Source, Publicly Available Repository
- Open Source, No Publicly Available Repository
- Closed Source, Site Hosted
- Closed Source, OSTI Hosted

LICENSES

- Other (Commercial or Open-Source)
- Apache License 2.0
- GNU General Public License v3.0
- MIT License
- BSD 2-clause "Simplified" License
- BSD 3-clause "New" or "Revised" License
- Eclipse Public License 1.0
- GNU Affero General Public License v3
- GNU General Public License v2.0
1. **T2Well/ECO2N Version 1.0: Multiphase and Non-Isothermal Model for Coupled Wellbore-Reservoir Flow of Carbon Dioxide and Variable Salinity Water**
   
   Oldenburg, Curt; Pfuehs, Karsten; Wu, Y. Shu ...  Release Date: 2018-09-19

   T2Well/ECO2N is a coupled wellbore and reservoir model for simulating the dynamics of CO2 injection and leakage through wellbores. It can be seen as an extension to standard TOUGH/ECO2N v2.0, and can be applied to situations relevant to geologic CO2 storage involving upward flow (e.g., leakage) and downward flow (injection). The new simulator integrates a wellbore-reservoir system by assigning the wellbore and reservoir to two different sub-domains in which flow is controlled by appropriate physical laws. In the reservoir, we model flow using a standard multiphase Darcy flow approach. In the wellbores, we use the Drift-Flux Model and related conservation.  

   DOI: 10.11578/dc.20180919.3  Landing Page

2. **LOOP-LESS CODE GENERATOR FOR WELL-DEFINED COMPUTATIONAL TASKS**
   
   Yang, Jie  Release Date: 2018-09-06

   Loop-Less Coe Generator for small even size matrices multiplication for AMD processor systems. Matrices are stored in double precision row-wise. Defining the sizes of double precision matrices required. Output is an assembly listing file. Stored as a text file.  

   Repository Link

3. **Global-Address Space Networking for Exascale**
   
   Basnet, Dan; Hargrove, Paul  Release Date: 2018-09-05

   GASNet-EX is a portable, open-source, high-performance communication library designed to efficiently support the networking requirements of Partitioned Global Address Space (PGAS) runtime systems and other alternative models in future exascale machines. The library is an evolution of the popular GASNet communication system, building upon over 15 years of lessons learned. GASNet is a language-independent, networking middleware layer that provides network-independent, high-performance communication primitives including Remote Memory Access (RMA) and Active Messages (AM). It has been used to implement parallel programming models and libraries such as UPC, Co-Army Fortran, Titanium, Legion, Chapel, and many others. The interface is primarily intended as.  

   More>>
Interlinking Research Results

End goal: interlinking all related research results (e.g., from publication to related data to related software)
OSTI’s Interlinking Data Sources

Scholix: A Framework for Scholarly Link Exchange

- Initiative to provide links between scholarly literature, data, and other research outputs
- Linkages provided by publishers, data centers, and global service providers
- OSTI assigned DOIs contributed to Scholix via Crossref and DataCite
- Scholix data provides related research outputs and defines the relationship between the outputs

US Patent and Trademark Office (USPTO)

- Ingesting USPTO references for DOE-funded patents
- All references are curated before linkages added to OSTI.GOV
Rare earth separations by selective borate crystallization

Abstract

Lanthanides possess similar chemical properties rendering their separation from one another a challenge of fundamental chemical and global importance given their incorporation into many advanced technologies. New separation strategies combining green chemistry with low cost and high efficiency remain highly desirable. We demonstrate that the subtle bonding differences among trivalent lanthanides can be amplified during the crystallization of borates, providing chemical recognition of specific lanthanides that originates from Ln $^{3+}$ coordination alterations, borate polymerization diversity and soft ligand coordination selectivity. Six distinct phases are obtained under identical reaction conditions across lanthanide series, further leading to an efficient and cost-effective separation strategy via selective crystallization. As proof of concept, Nd/Sm and Nd/Dy are used as binary models to demonstrate solid/aqueous and solid/solid separation processes. Controlling the reaction kinetics gives rise to enhanced separation efficiency of Nd/Sm system and a one-step quantitative separation of Nd/Dy with the aid of selective density-based flotation.

Authors:

Yin, Xueqiao $^{1}$; Wang, Xuying $^{1}$; Bai, Xiaojing $^{2}$; Wang, Yuqun $^{1}$; Chen, Lanhua $^{1}$; Xiao, Chengliang $^{1}$; Bi, Juan $^{1}$; Du, Shiyu $^{1}$; Chai, Zhifang $^{1}$; Albrecht-Schmitt, Thomas E. $^{3}$; Wang, Shuoo $^{1}$.

Publication Date: 2017-03-14
Rare earth separations by selective borate crystallization

This record is supplemented by:

CCDC 1521491: Experimental Crystal Structure Determination

DATASET, JANUARY 2017
Yin, Xuemiao; Wang, Yaxing; Bai, Xiaojing
Cambridge Crystallographic Data Centre
DOI: 10.5517/ccdc.csd.cct1n27cb

CCDC 1521492: Experimental Crystal Structure Determination

DATASET, JANUARY 2017
Yin, Xuemiao; Wang, Yaxing; Bai, Xiaojing
Cambridge Structural Database (CSD)
DOI: 10.5517/ccdc.csd.cct1n27dc

CCDC 1521493: Experimental Crystal Structure Determination

DATASET, JANUARY 2017
Yin, Xuemiao; Wang, Yaxing; Bai, Xiaojing
Cambridge Structural Database (CSD)
DOI: 10.5517/ccdc.csd.cct1n27ed
Device and method for upgrading petroleum feedstocks and petroleum refinery streams using an alkali metal conductive membrane

Works referenced in this record:

**Electrolytic Process and Cell**
- Patent: JULY 1924
- Downe, James
- US Patent Document #: 1,501,756
- URL: http://paaff.uspto.gov/eta/cgl/nph-Parse?Sect2=PTO1& Sect2=HITOFF&g=1&url=/search-browser.html&r=1&f=G=50&...

**Process of Producing Lubricating Oil**
- Patent: SEPTEMBER 1926
- Yose, Richard
- URL: http://paaff.uspto.gov/eta/cgl/nph-Parse?Sect2=PTO1& Sect2=HITOFF&g=1&url=/search-browser.html&r=1&f=G=50&...

**Method of Decreasing Metal Corrosion**
- Patent: JULY 1947
- Wilcox, Carroll; Morrell, Charles
- URL: http://paaff.uspto.gov/eta/cgl/nph-Parse?Sect2=PTO1& Sect2=HITOFF&g=1&url=/search-browser.html&r=1&f=G=50&...
Campaign datasets for Observations and Modeling of the Green Ocean Amazon (GOAMAZON)

Works referenced in this record:

Convective storms and non-classical low-level jets during high ozone level episodes in the Amazon region: An ARM/GOAMAZON case study

JOURNAL, APRIL 2017

Dias-Júnior, Cléio Q.; Dias, Nelson Luís; Fuentes, José D.
Atmospheric Environment, Vol. 155, p. 199-209
DOI: 10.1016/j.atmosenv.2017.02.006

Tropical Convective Transition Statistics and Causality in the Water Vapor–Precipitation Relation

JOURNAL, MARCH 2017

Kuo, Yi-Hung; Neelin, J. David; Mechoso, C. Roberto