

# 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



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

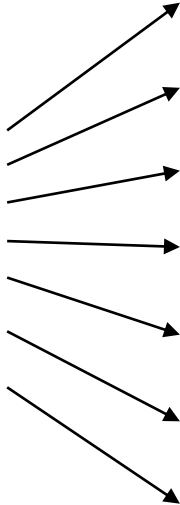
Office of Scientific and  
Technical Information

# DOE Invests ~\$12B per year in R&D



U.S. DEPARTMENT OF  
**ENERGY**

**R&D Funding**

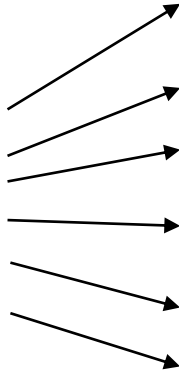


### **NATIONAL LABS**

- 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**

### **SCIENTIFIC & TECHNICAL INFORMATION (STI/ R&D Results)**



- Journal Articles/Accepted Manuscripts
- Technical reports
- Conference papers
- Theses/Dissertations
- Software/Code
- Datasets
- Patents
- Workshop reports
- Videos

≈ 50,000 STI “products” per year

# 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.

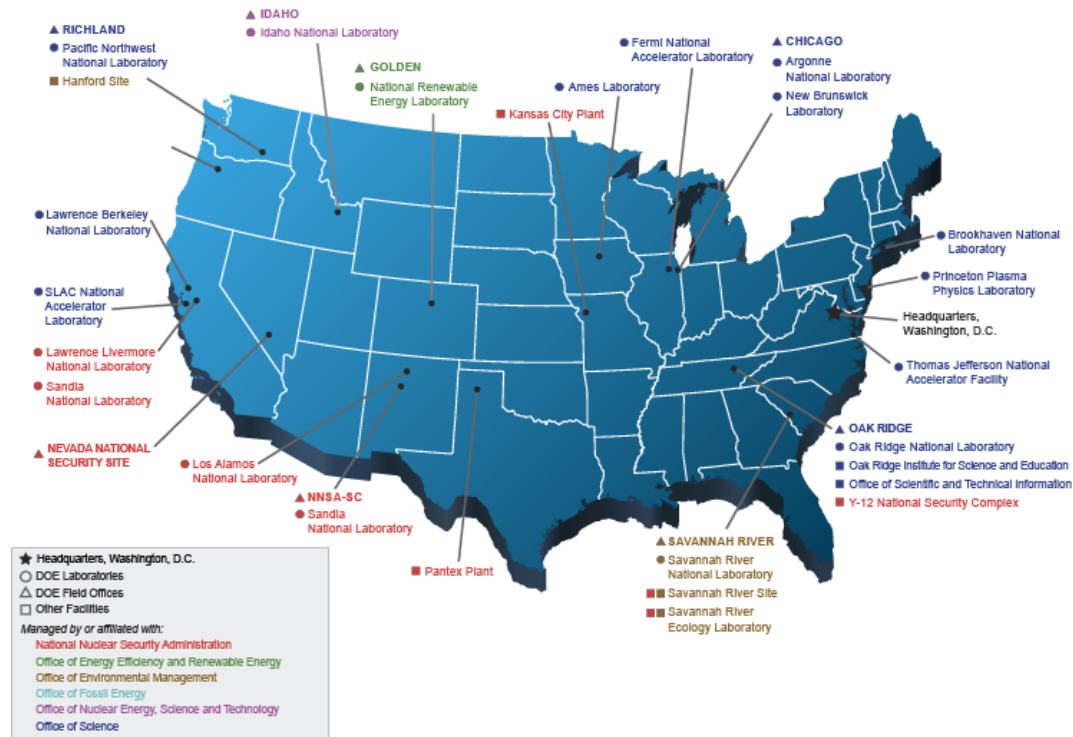
## Core Functions

- 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

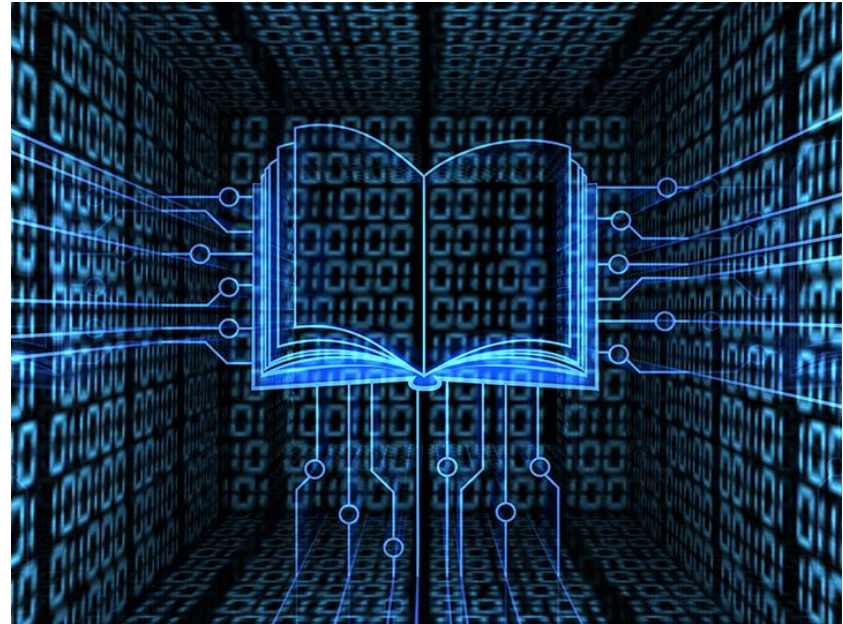


# STIP

# OSTI's Core Functions - Preservation

## **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

The screenshot shows the OSTI.GOV homepage with a blue background. At the top left is the U.S. Department of Energy seal. The main heading is 'OSTI.GOV' in large white letters, followed by 'U.S. Department of Energy' and 'Office of Scientific and Technical Information'. A search bar is centered, containing the text 'Search 2.9+ million Department of Energy research results' and a green search button. Below the search bar are seven navigation icons: 'Submit Research Results' (arrow), 'Search Tools' (magnifying glass), 'Public Access Policy' (lock), 'Data Services & Dev Tools' (database), 'About' (info), 'FAQs' (question mark), and 'News' (document). The footer contains the U.S. Department of Energy logo, 'Office of Science' and 'Office of Scientific and Technical Information' text, and social media icons for website policies, contact, Facebook, Twitter, Google+, and YouTube.



## 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.



[DOE Public Access Plan](#)



[Public Access to Publications Policy](#)



[Public Access FAQs](#)



[Research Data Management Policy](#)

## 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.



[Data ID Services](#)



[API Documentation](#)



[DOE MARC Records System](#)



[Open Archives Initiatives](#)

## 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 Scientific and Technical Information, is responsible to collect, preserve, and disseminate both unclassified and classified scientific and technical information from DOE-funded research and development (R&D) activities at DOE national laboratories and facilities and at other DOE sites nationwide. OSTI provides access to DOE STI through a suite of web-based, searchable discovery tools and engines, offering ever-expanding sources of R&D information to DOE, the research community, and the public.

Established in 1947, OSTI grew out of the post-World War II initiative to make the scientific research of the Department of Energy available to the public as possible, and its corporate function is authorized in several laws covering DOE and its predecessor agencies. The Energy Research Administration (ERA) Act of 1947 (Public Law 80-199) designates OSTI as the office responsible for DOE STI management and calls on DOE offices, contractors, and other agencies to provide STI to OSTI. OSTI is appropriately managed as part of the DOE mission to enable the advancement of scientific knowledge.

### About OSTI.GOV

OSTI.GOV is the primary search tool for DOE science, technology, and engineering research and development information about the DOE Office of Scientific and Technical Information. It consolidates OSTI's home page and SciTech Connect.

OSTI.GOV makes available over 70 years of research results from DOE and its predecessor agencies including journal articles/accepted manuscripts and related metadata; technical reports; scientific research datasets and conference and workshop papers; books and theses; and multimedia. OSTI.GOV contains nearly 3 million records, including 1 million journal articles, 1 million of which have digital object identifiers (DOIs) linking to full-text articles on public access. OSTI.GOV also contains 445,000 full-text DOE-funded STI documents. OSTI.GOV provides access to this DOE STI by offering numerous search and customization options; and for the DOE community, additional citation information is available to help researchers find related research.

OSTI.GOV also provides information about the Office of Scientific and Technical Information and its other services. This information includes information about OSTI's organization, leadership, and strategic plan; policy and guidance regarding DOE-funded R&D research results to OSTI; technical support for submitting research results using OSTI's resources about data services and developer tools, including Data ID Services, API documentation, OAI services, and more. For more information about OSTI and its search tools and services, visit [OSTI.GOV](#).

In consultation with researchers across the DOE complex, OSTI works continuously to increase the precision and accuracy of its search tools, and to make access to DOE R&D results quicker, more convenient, and more complete than ever before. These enhancements and innovations 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.



[OSTI Strategic Plan](#)



[OSTI's Vision, Mission, Goals](#)



[Organization Chart](#)

## FAQs

- [What is OSTI.GOV?](#)
- [What does OSTI.GOV contain?](#)
- [How is OSTI.GOV related to OSTI, DOE PAGES, and other search tools?](#)
- [Where is SciTech Connect?](#)
- [How are records submitted to OSTI.GOV?](#)
- [What is E-link?](#)
- [How does E-link relate to OSTI.GOV?](#)
- [What bibliographic metadata is collected for OSTI.GOV records?](#)
- [Does OSTI.GOV provide the full-text or resource for all of its content?](#)
- [Are there restrictions on the use of the material in OSTI.GOV?](#)
- [What subject areas are covered in OSTI.GOV?](#)
- [What are the "Full Text/Resource Available" and "Citation Only" filters?](#)
- [What can be found with each of the OSTI.GOV resource type filters: journal articles, datasets, patents, etc.?](#)
- [How do I search in OSTI.GOV?](#)
- [What is the difference between Term and Semantic search?](#)
- [How do I use the Advanced Search?](#)
- [What information is found in the Full Record in OSTI.GOV?](#)
- [Can I sort or filter my results?](#)
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- [Can I bulk download a number of records?](#)
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- [How do I register for an OSTI.GOV account? What are the benefits of being a registered user?](#)
- [Does OSTI.GOV offer an Alerts service?](#)
- [Can I get a full text copy of one of the citations I've found in OSTI.GOV where electronic full text is not available?](#)
- [What kinds of software are available in OSTI.GOV?](#)
- [How is ORCID integrated into OSTI.GOV?](#)



## 69 Results

## ARTICLE TYPES

- News (35)
- Blog (20)
- Events (6)
- Updates and Tips (36)

## PRODUCTS AND SERVICES

- Data ID Service (10)
- E-Link (5)
- MARC Records (2)
- ORCID (2)
- OSTI.GOV (3)
- DOE PAGES (16)
- DOE CODE (5)
- DOE Data Explorer (9)
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- DOE R&D Accomplishments (9)
- ScienceCinema (3)
- SciTech Connect (11)
- Science.gov (2)
- WorldWideScience.org (2)
- DOE Research & Development (R&D) Accomplishments (2)
- Scientific and Technical Information Program Website (1)

## News



07/18/2018

News

## 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....

[Read More](#)

07/18/2018

News

Updates and Tips

### ScienceCinema Improvements and Progress

07/11/2018

News

Updates and Tips

### Navigating DOE Data Explorer Video

07/11/2018

News

Updates and Tips

### Find Nobel Prize Winning Research at OSTI.GOV



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### Advanced Search Options

Advanced Search queries use a traditional Term Search. For more info, see our [FAQ](#).

[More Options ...](#)

All Fields:

Full Text:

Title:

Resource Type:

Creator / Author:

Subject:

Identifier Numbers:

Site:

Publication Date:

to

Research Org:

Sponsoring Org:

Update Date:

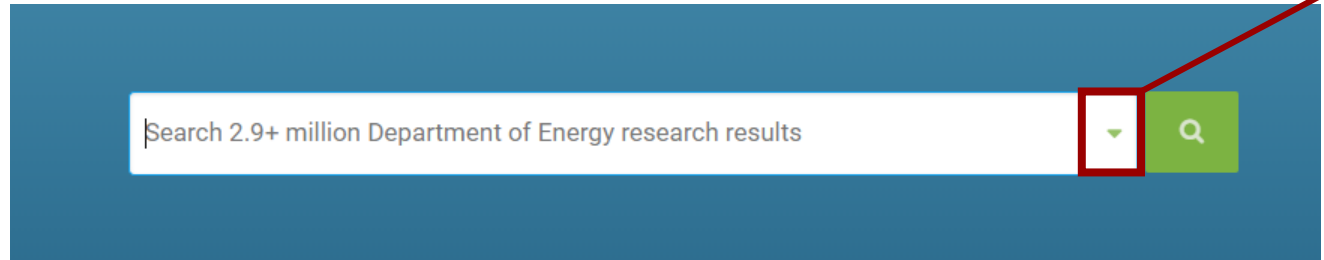
to

Limit to INIS / NSA records only

Limit to Nobel Prize winning records only

Search

# 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

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Advanced Search Options  
Advanced Search queries use a traditional Term Search. For more info, see our [FAQ](#).

All Fields:

Title:

Creator / Author:

Identifier Numbers:

Publication Date:  
 to

[More Options ...](#)

Full Text:

Resource Type:

Subject:

Site:

Research Org:

Sponsoring Org:

Update Date:  
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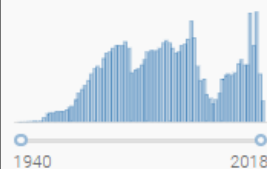
RESOURCE TYPE

- Journal Article
- Technical Report
- Data
- Software
- Patent
- [more](#)

AVAILABILITY

- Full Text / Resource Available
- Citation Only

PUBLICATION DATE



CREATOR / AUTHOR

- Kristin Persson (69,693)
- Wang, J. (2,097)
- Zhang, J. (2,054)
- Chen, Y. (1,823)
- Liu, Y. (1,740)
- [more](#)

RESEARCH ORGANIZATION

- Lawrence Berkeley National Lab.

### 1. Production rate measurement of Tritium and other cosmogenic isotopes in Germanium with CDMSlite

Agnese, R. ; Aralis, 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 [more](#) »

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, Huile ; ... - Energy Storage Materials

As a promising cathode material for rechargeable lithium ion batteries, tellurium has attracted a 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 TexSy@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 TexSy@polyaniline particle demonstrated that the volumetric variation was efficiently suppressed in [more](#) »

DOI: 10.1016/j.ensm.2018.04.019

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

Denholm, Paul ; Mai, Trieu - 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



## 3,007,059 Search Results

SEARCH FOR:

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RESOURCE TYPE

- Journal Article
- Technical Report
- Data
- Software
- Patent
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AVAILABILITY

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PUBLICATION DATE

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Sort by Date (newest first)

Sort by Date (oldest first)

Sort by Relevance

Sort by Most Cited

## 1. Production rate measurements of $^{65}\text{Zn}$ and $^{67}\text{Zn}$ in Germanium with CDMSlite

Agnese, R. ; Aralis, 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 [more](#) »

DOI: 10.1016/j.astropartphys.2018.08.006

## 2. One-step nonlinear electrochemical synthesis of $\text{Te}_x\text{S}_y$ @PANI nanorod materials for $\text{Li}-\text{Te}_x\text{S}_y$ battery

Li, Jun ; Yuan, Yifei ; Jin, Huile ; ... - 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 »](#)

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DOI: [10.1038/nature13970](https://doi.org/10.1038/nature13970)

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# Conductive two-dimensional titanium carbide 'clay' with high volumetric capacitance

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 Accepted Manuscript (DOE)

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DOI: [10.1038/nature13970](https://doi.org/10.1038/nature13970)

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## 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 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 two-dimensional titanium carbide ( $\text{Ti}_3\text{C}_2$ , a member of the 'MXene' family), produced by etching aluminium from titanium aluminium carbide ( $\text{Ti}_3\text{AlC}_2$ , 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 [more »](#)

Authors: [Ghidiu, Michael](#) <sup>[1]</sup>; [Lukatskaya, Maria R.](#) <sup>[1]</sup>; [Zhao, Meng-Qiang](#) <sup>[1]</sup>; [Gogotsi, Yury G.](#) <sup>[1]</sup>; [Barsoum, Michel W.](#) <sup>[1]</sup>

[+ Show Author Affiliations](#)

Publication Date: 2014-11-26

Research Org.: Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States)

Sponsoring Org.: USDOE Office of Science (SC)

OSTI Identifier: 1286827

Grant/Contract Number: AC05-00OR22725



# ORCID Integration

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## ORCID Account Integration

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Name: Carly Robinson

ORCID:  <https://orcid.org/0000-0002-8523-1478>





## 1 Search Results

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CREATOR / AUTHOR

studwell, robinson [x]

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## RESOURCE TYPE

- Journal Article
- Technical Report
- Data
- Software
- Patent
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## AVAILABILITY

- Full Text / Resource Available
- Citation Only

CREATOR / AUTHOR

studwell, robinson

## 1. 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 [more](#)

DOI: 10.5334/dsj-2017-017

Full Text Available

[Add to ORCID Works](#)

## Add this item to your ORCID Works?

*Redesigning the DOE Data Explorer to embed dataset relationships at the point of search and to reflect landing page organization*  
(OSTI ID 1352141)

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## 1 Search Results

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## SEARCH FOR:

All Records

## CREATOR / AUTHOR

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[x clear all] [Q modify this search]

## REFINE BY:

## RESOURCE TYPE

- Journal Article
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## AVAILABILITY

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## CREATOR / AUTHOR

- studwell, robinson

## RESEARCH ORGANIZATION

- Office of Scientific and Technical Information, Oak Ridge, TN (United States) (1)

Search research orgs ...



## 1. 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 [more](#)

DOI: 10.5334/dsj-2017-017 | [Full Text Available](#)

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



**Carly Robinson**

Biography



ORCID ID

https://orcid.org/0000-0002-8523-1478

View public version

Display your ID on other sites

Public record print view

Get a QR Code for your ID

Also known as

Country

United States

Keywords

Websites

Emails

carly.robinson33@gmail.com

Other IDs

Scopus Author ID: 23036765000

Education (3)

Employment (3)

Funding (0)

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Works (7 of 7)

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Data Science Journal

2017-04 | journal-article

DOI: 10.5334/dsj-2017-017

OTHER-ID: 1352141

Source: DOE / OSTI

Preferred source

Optical growth of highly viscous organic/sulfate particles

J Atmos Chem

2014-06 | journal-article

DOI: 10.1007/s10874-014-9287-8

Source: CrossRef Metadata Search

Preferred source (of 2)

Impact of Organic Coating on Optical Growth of Ammonium Sulfate Particles

Environ. Sci. Technol.

2013 | journal-article

DOI: 10.1021/es4023128

Source: CrossRef Metadata Search

Preferred source (of 2)

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



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## 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](#)  <sup>[1]</sup>; [Robinson, Carly](#)  <sup>[1]</sup>; [Elliott, Jannean](#)  <sup>[1]</sup>

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Publication Date: 2017-04-04

Research Org.: Office of Scientific and Technical Information, Oak Ridge, TN (United States)

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Search OSTI.GOV for ORCID "0000-0002-8523-1478"  
Search orcid.org for ORCID "0000-0002-8523-1478"



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- Assign Crossref DOIs to DOE-funded technical reports

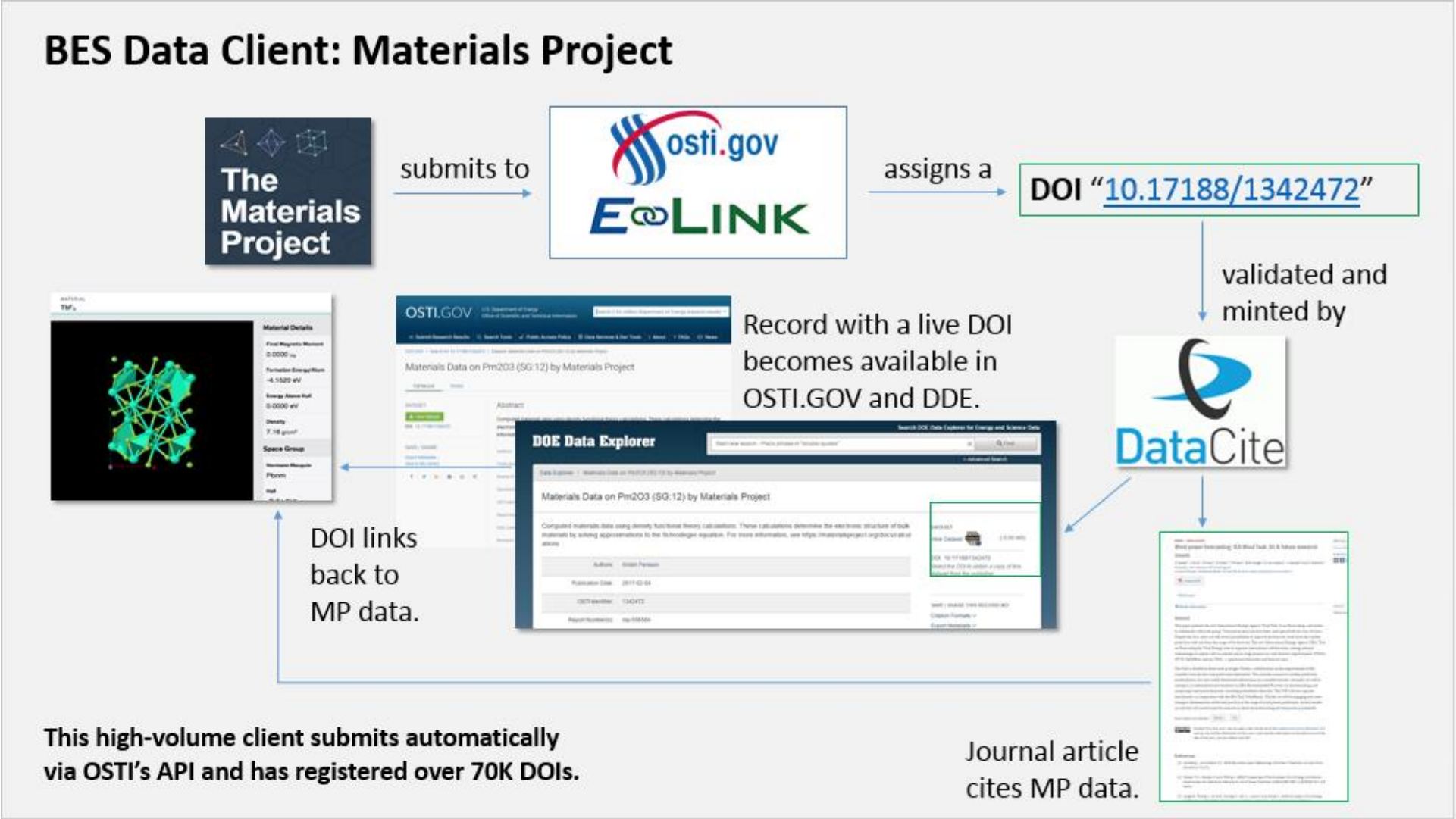


## DataCite – Joined in 2011

- 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



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

# Data Discovery – DOE Data Explorer

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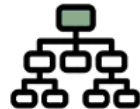
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#### Explore Datasets



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

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## RESEARCH ORGANIZATION

- ▾ Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States) (4)
- ▾ Oak Ridge National Lab. (ORNL), Oak Ridge, TN (United States) (4)
- ▾ Brookhaven National Laboratory (BNL), Upton, NY (United States) (2)
- ▾ Los Alamos National Lab. (LANL), Los Alamos, NM (United States) (2)
- ▾ Pacific Northwest National Lab. (PNNL), Richland, WA (United States) (2)

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Projects (5) Collections (0) Datasets (215)

## 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. [more »](#)

2 Datasets

0 Collections

## 2. Next-Generation Ecosystem Experiments (NGEE) - Tropics

Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States); NGEE-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), Petropolis, Manaus (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 NGEE-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 NGEE-Tropics is to develop a predictive understanding of how tropical forest carbon balance and climate system feedbacks. [more »](#)

16 Datasets

0 Collections

## 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

## Atmospheric Radiation Measurement (ARM) Data Center

**Project Details**[Associated Collections \(0\)](#)[Associated Datasets \(851\)](#)

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. Datastreams are generally available for download within 48 hours.

Product Type:	Project
Project Lead:	<a href="#">Prakash, Giri</a>
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

**PROJECT DETAILS**<https://www.arm.gov/data>

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climate



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## Atmospheric Radiation Measurement (ARM) Data Center

Project Details

Associated Collections (0)

Associated Datasets (851)

1. ARM: Balloon-borne sounding system (BBSS): Vaisala-processed winds, press., temp, and RH

Richard Coulter ; Jenni Kyrouac ; 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, Afshin ; Kutchenreiter, Mark ; Habte, Aron ; Dooraghi, 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: 10.5439/1025100

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Data Product: Balloon-borne sounding system (BBSS): Vaisala-processed winds, press., temp, &RH



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Showing 1-20 of 352 measurements

DQR Resolution: 7 Days

Page Size: 20

	2005	2010	2015
<input type="checkbox"/> <b>sondownpn b1 @ ena C1</b> // Balloon-borne sounding system (BBSS): Vaisala-processed winds, press., temp, &RH (Expand)			
<input type="checkbox"/> <b>★3</b> // Atmospheric pressure // Pressure, atmospheric, at altitude			
<input type="checkbox"/> // Horizontal wind // Wind speed, at altitude			
<input type="checkbox"/> // Horizontal wind // Wind speed, W-to-E component, at altitude			
<input type="checkbox"/> // Atmospheric temperature // Temperature, dry bulb, at altitude			



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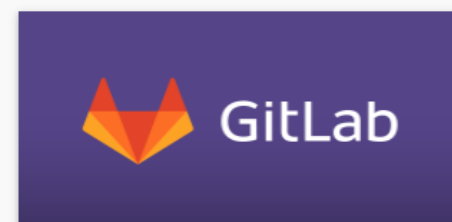
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### client

The project containing the client implementation for DOECode.

HTML ★ 1 4 BSD-3-Clause Updated an hour ago



### server

Back-end services and application for the DOECode web app.

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### dev-test-repo

This is a repository used by the DOE Code development team for testing

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## 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 [More>>](#)

DOI: [10.11578/dc.20180919.3](https://doi.org/10.11578/dc.20180919.3) | [Landing Page](#)

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

Wang, Jesse Release Date: 2018-09-06

Loop-Less Coe Generator for small even size matrices multiplication for AMD

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### 1. T2Well/ECO2N Version 1.0: Multiphase and Non-Isothermal Model for Coupled Wellbore-Reservoir Flow of Carbon Dioxide and Variable Salinity Water

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T2Well/ECO2N is a coupled wellbore and reservoir model for simulating the dynamics of CO<sub>2</sub> 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 CO<sub>2</sub> 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 [More>>](#)

DOI: 10.11578/dc.20180919.3 | [Landing Page](#)

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

Wang, Jesse Release Date: 2018-09-06

Loop-Less Code 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

Bonachea, 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-Array Fortran, Titanium, Legion, Chapel, and many others. The interface is primarily intended as [More>>](#)





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## 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
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## Rare earth separations by selective borate crystallization

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Free Publicly Available Full Text

Accepted Manuscript (DOE)

Publisher's Version of Record  
DOI: 10.1038/ncomms14438

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### 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<sup>3+</sup> 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, Xuemiao<sup>[1]</sup>; Wang, Yaxing<sup>[1]</sup>; Bai, Xiaojing<sup>[2]</sup>; Wang, Yumin<sup>[1]</sup>; Chen, Lanhua<sup>[1]</sup>; Xiao, Chengliang<sup>[1]</sup>; Diwu, Juan<sup>[1]</sup>; Du, Shiyu<sup>[2]</sup>; Chai, Zhifang<sup>[1]</sup>; Albrecht-Schmitt, Thomas E.<sup>[3]</sup>; Wang, Shuao<sup>[1]</sup>

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Publication Date: 2017-03-14



# Rare earth separations by selective borate crystallization

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[Yin, Xuemiao; Wang, Yaxing; Bai, Xiaojing](#)

Cambridge Crystallographic Data Centre

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### [CCDC 1521492: Experimental Crystal Structure Determination](#)

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Cambridge Structural Database (CSD)

DOI: [10.5517/ccdc.csd.cc1n27dc](#)

### [CCDC 1521493: Experimental Crystal Structure Determination](#)

DATASET, JANUARY 2017

[Yin, Xuemiao; Wang, Yaxing; Bai, Xiaojing](#)

Cambridge Structural Database (CSD)

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### Electrolytic Process and Cell

PATENT, JULY 1924

Downs, James

US Patent Document 1,501,756

URL: <http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=/netahtml/PTO/search-bool.html&r=1&f=G&l=50&...>

### Process of Producing Lubricating Oil

PATENT, SEPTEMBER 1936

Vose, Richard

US Patent Document 2,055,210

URL: <http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=/netahtml/PTO/search-bool.html&r=1&f=G&l=50&...>

### Method of Decreasing Metal Corrosion

PATENT, JULY 1941

Wilson, Carroll; Morrell, Charles

US Patent Document 2,249,340

URL: <http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=/netahtml/PTO/search-bool.html&r=1&f=G&l=50&...>

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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-Junior, Cléo 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



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