DOE Green Energy Data Service

About

The U.S. Department of Energy (DOE) Office of Scientific and Technical Information (OSTI) presents these green energy results from research and development conducted throughout the Department and by DOE-funded awards at universities. These green energy results consist of two separate data sets: over 30,000 technical reports and over 2,000 patents from R&D projects. The Green Energy Portal Data web service returns results from either of these collections. The results can be obtained in XML or CSV formats.

Getting Started

In order to specify which result set you are interested in you will use the appropriate base URL as follows:

For the R&D Result data set : http://www.osti.gov/greenenergy/rdresults?format=xml
http://www.osti.gov/greenenergy/rdresults?format=csv

For the Patent data set : http://www.osti.gov/greenenergy/patent?format=xml
http://www.osti.gov/greenenergy/patent?format=csv

Please Note:

In order to return XML results for the Green Energy Portal you must specify "format=xml"
In order to return Comma Separated Value (CVS) results for the Green Energy Portal use "format=cvs".

Examples

1. Searching R&D Results data set for "fission" related records returned in XML format
http://www.osti.gov/greenenergy/rdresults?searchFor=fission&format=xml

2. Searching Patent data set for "solar" related records returned in CVS format
http://www.osti.gov/greenenergy/patent?searchFor=solar&format=csv

Using the DOE Green Energy Data Service

The parameters for each service are: ?CriteriaKeyword= where CriteriaKeyword is replaced by one of the criteria keywords listed below. A blank query will return the entire result set for the given collection.

Criteria Keyword	*Information*
searchFor	Searches for existence of term within any field of record including full text for R&D results.
EntryDateTo	Date record was entered into system (in MM/DD/YYYY format)
EntryDateFrom	To be used in conjunction with EntryDateTo search criteria (in MM/DD/YYYY format)
title	Record Title
author	Uses "creator" field for R&D Uses "inventors" field for Patents
StartPubYear	Year published from "date" field for R&D Year published from "issue_date" field for Patents
StartPubDay	Day published from "date" field for R&D Day published from "issue_date" field for Patents
StartPubMonth	Month published from "date" field for R&D Month published from "issue_date" field for Patents
EndPubYear	To be used in conjunction with StartPub(x) search criteria
EndPubDay	To be used in conjunction with StartPub(x) search criteria
EndPubMonth	To be used in conjunction with StartPub(x) search criteria

Example

The URL for a search on "gas" in the title for R&D would be:

http://www.osti.gov/greenenergy/rdresults?title=gas&format=xml

The URL for a search on "gas" in the title for Patent would be:

http://www.osti.gov/greenenergy/patent?title=gas&format=xml

Wildcards

Queries using wildcard operators can be performed. The asterisk (*) is used to search for words with spelling variations or contain a specified pattern of characters.

Example

The following URLs will return all the items with "smith" and any words with "smith" as a stem in the Inventor(s) field for Patent search and the Author(s) field for R&D Results.

http://www.osti.gov/greenenergy/patent?author=smith*&format=xml

http://www.osti.gov/greenenergy/rdresults?author=smith*&format=xml

The URL returns the following truncated results.

<dc:creator>**Liu, Y.-S. Luo, Y. ; Baker, J. O. ; Zeng, Y. ; Himmel, M. E. ; Smithson, S. ; Ding, S.-Y.**</dc:creator>

<dc:inventors>**Maurer, Charles J. (Matthews, NC); Shaw, Gordon (Charlotte, NC); Smith, Vicky S. (Greer, SC); Buelow, Steven J. (Los Alamos, NM); Tumas, William (Los Alamos, NM); Contreras, Veronica (San Antonio, TX); Martinez, Ronald J. (Santa Cruz, NM)**</dc:inventors>

Search Requests with Multiple Search Terms

Multiple search terms and terms that require spaces can be searched by using the plus symbol (+) or using the Boolean AND operator.

Example

The following URL searches fields containing both the words "hydrogen" and "oxygen" in the title.

 http://www.osti.gov/greenenergy/patent?searchFor=hydrogen+oxygen&format=xml

or

http://www.osti.gov/greenenergy/patent?searchFor=hydrogen%20AND%20oxygen&format=xml

The characters %20 must be added before and after the AND operator.

The URL returns the following truncated result.

<dc:abstract>A reversible physiological process provides for the temporal separation of oxygen evolution and hydrogen production in a microorganism, which includes the steps of growing a culture of the microorganism in medium under illuminated conditions to accumulate an endogenous substrate, depleting from the medium a nutrient selected from the group consisting of sulfur, iron, and/or manganese, sealing the culture from atmospheric <mark>oxygen</mark>, incubating the culture in light whereby a rate of light-induced oxygen production is equal to or less than a rate of respiration, and collecting an evolved gas. The process is particularly useful to accomplish a sustained photobiological <mark>hydrogen</mark> gas production in cultures of microorganisms, such as Chlamydomonas reinhardtii.</dc:abstract>

Exact Phrase Search

Exact phrases can be searched by surrounding the search terms in double quotation marks (" ").

Example

The following URL searches records containing the exact phrase "nuclear physics" in the title of R&D Results data.

http://www.osti.gov/greenenergy/rdresults?title="nuclear physics"&format=xml

The following truncated results are returned. The search phrase has been highlighted.

dc:title>**Models for Type I X-Ray Bursts with Improved Nuclear Physics**</dc:title>
dc:creator>**Woosley, S E Heger, A ; Cumming, A ; Hoffman, R D ; Pruet, J ; Rauscher, T ; Schatz, H ; Brown, B A ; Wiescher, M ; Fisker, J L**</dc:creator>
dc:subject>**08 HYDROGEN; 73 <mark>NUCLEAR PHYSICS</mark> AND RADIATION PHYSICS; 99 GENERAL AND MISCELLANEOUS//MATHEMATICS, COMPUTING, AND INFORMATION SCIENCE; ASHES; CONVECTION; EFFICIENCY; HELIUM; HYDROGEN; <mark>NUCLEAR PHYSICS</mark>; NUCLEAR REACTIONS; NUCLEI; PULSE RISE TIME; RADIATION TRANSPORT**</dc:subject>
dc:description>**Multi-zone models of Type I X-ray bursts are presented that use an adaptive nuclear reaction network of unprecedented size, up to 1300 isotopes, for energy generation and include the most recent measurements and estimates of critical <mark>nuclear physics.</mark> Convection and radiation transport are included in calculations that carefully follow the changing composition in the accreted layer, both during the bursts themselves and in their ashes. Sequences of bursts, up to 15 in one case, are followed for two choices of accretion rate and metallicity, up to the point where quasi-steady state is achieved. For M = 1.75 x 10{sup -9} M{sub {circle_dot}} yr{sup -1} (and M = 3.5 x 10{sup -10} M{sub {circle_dot}} yr{sup -1}, for low metallicity), combined hydrogen-helium flashes occur. These bursts have light curves with slow rise times (seconds) and long tails. The rise times, shapes, and tails of these light curves are sensitive to the efficiency of nuclear burning at various waiting points along the rp-process path and these sensitivities are explored. Each displays ''compositional inertia'' in that its properties are sensitive to the fact that accretion occurs onto the ashes of previous bursts which contain left-over hydrogen, helium and CNO nuclei.**</dc:description>

Sorting

Results may be sorted by a number of specifications in ascending (ASC) or descending (DESC) order. The default sort is by relevance.

Sort Options

The table below lists various search options that can be used to sort results.

Additional Sort Options	
SortBy	Sort results by a field name. Valid field names include: publication_date, creator, title, date_entry, and relv
SortOrder	Selects the direction of the sort, either ASC (ascending) or DESC (descending). The default is DESC.

Example

The following URL performs a search for patents containing the text gas and stream and is sorted by title in descending order.

http://www.osti.gov/greenenergy/patent?searchFor=gas+stream&SortBy=publication_date&SortOrder=DESC&format=xml

Please note that specifying certain sort criteria in addition to large result page sizes may affect query performance.

Requesting Pages within Search Results

By default, a request returns only the first page of results containing 25 records. The page search option can return multiple pages of search results. After an initial query is performed, the XML returned will indicate a queryId value. **This queryId is maintained for the duration of a search session, usually about 30 minutes of activity.**

Example

If a search for "hydrogen" has already been performed with a queryId value of 21 returned in the results, then the second page of the results may be obtained with the following URL.

http://www.osti.gov/greenenergy/patent?qid=21&page=1&format=xml

Updating Searches Done Previously

If a search has been done previously and you wish to update your results with any records added since your last search, use EntryDateFrom with the date of the previous search.

http://www.osti.gov/greenenergy/rdresults?searchFor=solar&format=xml&EntryDateFrom=04/01/2010

Increasing the Number of Records per Page

When not passing any search parameters, you receive the first page of results containing the entire database. The first line of the results will indicate the total number of records.
http://www.osti.gov/greenenergy/rdresults?format=xml

‐ <records queryid="**0**" count="**31998**" morepages="**true**" start="**1**" end="**25**">

In this case the total number of records in the database is 31998. The first page contains 25 records. The number of records retrieved per page can be increased using "nrows=".

http://www.osti.gov/greenenergy/rdresults?format=xml&nrows=5000

To get a second page, use page=

http://www.osti.gov/greenenergy/rdresults?format=xml&nrows=5000&query_id=0&page=1

More Information

For more information about OSTI's Data Services, please visit:

http://www.osti.gov/XMLServices

For more information about DOE Green Energy, please visit:

http://www.osti.gov/greenenergy/about.jsp

Specific inquiries can be submitted via the DOE Green Energy comments form.

http://www.osti.gov/greenenergy/contact.jsp