

1

## **What is Scopus? [www.scopus.com](http://www.scopus.com)**

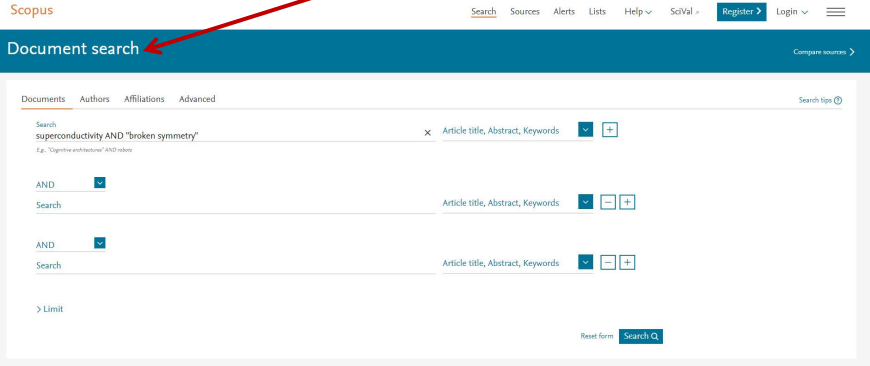
**Largest abstract & citation database of curated international peer-reviewed literature**

- 22 000 peer-reviewed journals
- 360 trade publications
- 120 000 books (with 10 000 added/year)
- >70 million records, back to 1788
- 6.4 million conf papers from proceedings & jrnl
- 350 million scientific web pages indexed by Scirus
- 25.2 million patent records
- “Articles-in-Press” from >3850 journals

2

## Searching for a topic

Use the "Document search" tab (default)

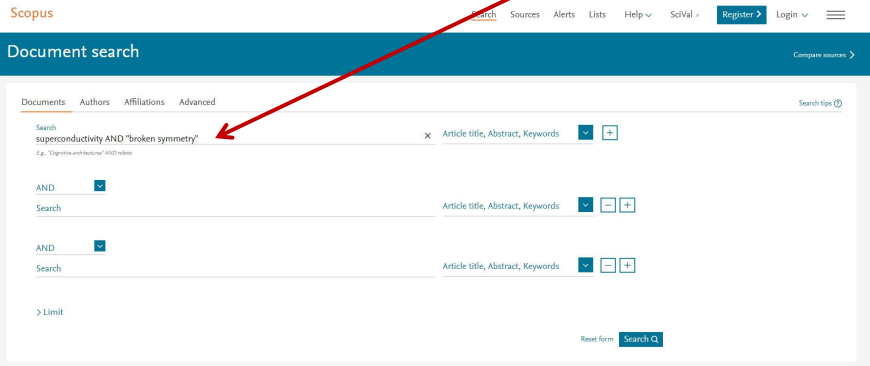


The screenshot shows the Scopus search interface. At the top, there is a navigation bar with 'Scopus' on the left and 'Search Sources Alerts Lists Help ScVal Register Login' on the right. Below this is a dark blue header with 'Document search' on the left and 'Compare sources' on the right. A red arrow points from the text 'Use the "Document search" tab (default)' to the 'Document search' text in the header. Below the header is a search form with tabs for 'Documents', 'Authors', 'Affiliations', and 'Advanced'. The 'Documents' tab is selected. The search query is 'superconductivity AND "broken symmetry"'. Below the query are three 'AND' sections, each with a search input field and a dropdown menu for 'Article title, Abstract, Keywords'. At the bottom right of the search form are 'Reset form' and 'Search Q' buttons.

3

## Searching for a topic

Type in key words

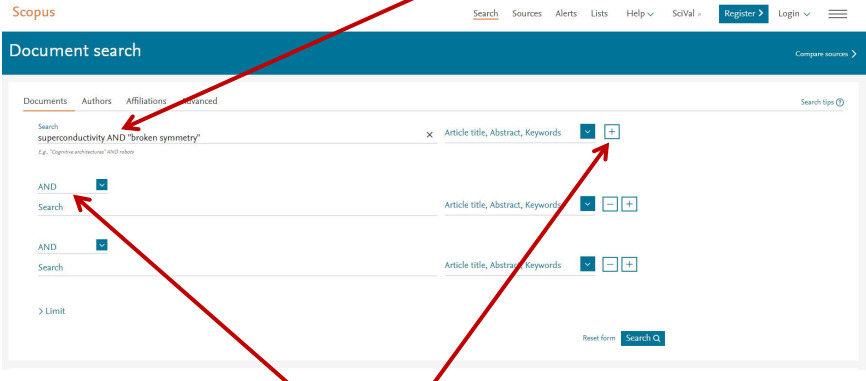


The screenshot shows the Scopus search interface, identical to the one above. A red arrow points from the text 'Type in key words' to the search query 'superconductivity AND "broken symmetry"' in the search form.

4

## Searching for a topic

**Use Boolean operators to add or narrow terms, or add more search fields**

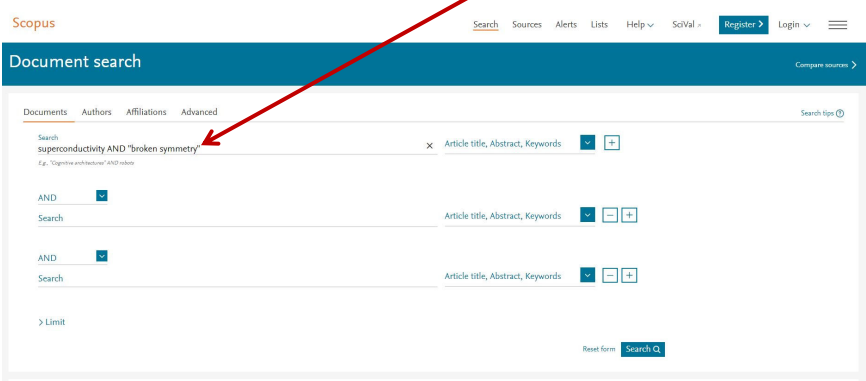


The screenshot shows the Scopus Document search interface. The search bar contains the query "superconductivity AND 'broken symmetry'". Below the search bar, there are three search fields, each with a dropdown menu set to "AND" and a search type dropdown set to "Article title, Abstract, Keywords". A red arrow points from the text "Use Boolean operators to add or narrow terms, or add more search fields" to the "AND" dropdown menu of the first search field. Another red arrow points from the same text to the "+" button next to the search type dropdown of the first search field. A third red arrow points from the text "Or use the 'add field' button" to the "+" button next to the search type dropdown of the second search field.

5

## Searching for a topic

**Use quotation marks to search for exact phrases**



The screenshot shows the Scopus Document search interface. The search bar contains the query "superconductivity AND 'broken symmetry'". A red arrow points from the text "Use quotation marks to search for exact phrases" to the quotation marks around "broken symmetry" in the search bar.

6

## Searching for a topic

Use the drop-down menus to specify where to search

The screenshot shows the Scopus Document search page. The search query is "superconductivity AND broken symmetry". The search type is set to "Article title, Abstract, Keywords". There are three AND search filters, each with a search input field and a search type dropdown menu. A red arrow points to the first search type dropdown menu.

7

## Searching for a topic

Use the "Limit" link to specify a date range

The screenshot shows the Scopus Document search page. The search query is "superconductivity AND broken symmetry". The search type is set to "Article title, Abstract, Keywords". There are three AND search filters, each with a search input field and a search type dropdown menu. A red circle highlights the "Limit" link, and a red arrow points to it. Below the "Limit" link, the date range is set to "Published All years to Present".

8

## Searching for a topic

The screenshot shows the Scopus search interface. The search query is "superconductivity AND 'broken symmetry'". Below the search bar, there are three "AND" search boxes. A red circle highlights the "Limit" link. Red arrows point from the "Limit" link to the "Date range (inclusive)" section, which has "Published" selected and "All years" to "Present" chosen. Another red arrow points from the "Limit" link to the "Document type" and "Access type" sections, both of which are set to "All".

Use the "Limit" link to specify a date range  
or document or access type (open access)

9

## Results can be refined by many search parameters

The screenshot shows the Scopus search results page for the same query. The page displays "164 document results". On the left, there is a "Refine results" sidebar with options to "Limit or Exclude" by "Access type", "Year", and "Author name". Red arrows point from the "Limit or Exclude" text to the "Limit" link in the previous slide, and from the "by access type", "by year", and "by author(s)" text to their respective sections in the sidebar. The main results area shows a table of documents with columns for Document title, Authors, Year, Source, and Cited by.

Document title	Authors	Year	Source	Cited by
1 Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale	Slagter, R.J.	2018	International Journal of Modern Physics D 27(9),1850094	0
2 Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension	Roy, B., Foster, M.S.	2018	Physical Review X 8(1),011049	2
3 Two-stage multipolar ordering in PVTAl2O Kondo materials	Freyer, F., Atig, J., Lee, S., (...), Trebst, S., Kim, Y.B.	2018	Physical Review B 97(11),115111	0
4 Magnetic and Nematic Orders of the Two-Dimensional Electron Gas at Oside(111) Surfaces and Interfaces	Boudjada, N., Wachtel, G., Paramakanti, A.	2018	Physical Review Letters 120(9),096002	2

10

## Results can be automatically analyzed by clicking the link

The screenshot shows the Scopus search results page for the query "TITLE-ABS-KEY ( superconductivity AND broken symmetry)". The page displays 164 document results. A red arrow points to the "Analyze search results" link in the top navigation bar. Below the search bar, there are filters for "Access type" (Open Access, Other), "Year" (2018, 2017, 2016, 2015, 2014), and "Author name" (Eisaki, H., Davis, L.C.). The main results table lists four documents with their titles, authors, years, sources, and citation counts.

Document title	Authors	Year	Source	Cited by
1 Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale	Slagter, R.J.	2018	International Journal of Modern Physics D 27(9),1850094	0
2 Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension	Roy, B., Foster, M.S.	2018	Physical Review X 8(1),011049	2
3 Two-stage multipolar ordering in PYZnO Kondo materials	Freire, F., Abig, J., Lee, S., (...), Trebst, S., Kim, Y.B.	2018	Physical Review B 97(11),115111	0
4 Magnetic and Nematic Orders of the Two-Dimensional Electron Gas at Oxide (111)	Boudjada, N., Wachtel, G., Paramakanti, A.	2018	Physical Review Letters 120(8),086802	2

11

## And Scopus will analyze the results in many different ways

The screenshot shows the Scopus search results page for the query "TITLE-ABS-KEY ( superconductivity AND broken symmetry)". The page displays 164 document results. The "by affiliation" chart shows the distribution of documents across 15 affiliations. The "Documents by year" chart shows the number of documents published from 2014 to 2018. The "Documents per year by source" chart shows the number of documents published from 2014 to 2018, broken down by source. The "Documents by author" chart shows the number of documents published by each author. The "Documents by country/territory" chart shows the number of documents published in each country/territory. The "Documents by type" chart shows the number of documents published in each document type. The "Documents by subject area" chart shows the number of documents published in each subject area.

Documents by year	Documents per year by source	Documents by author	Documents by country/territory	Documents by type	Documents by subject area
by year	by source	by author	by country	by doc type	by subject

12

# Click on the title in the "results" list

The screenshot shows the Scopus search results page. The search query is "TITLE-ABS-KEY (superconductivity AND broken symmetry)". The results list shows two entries. The first entry, "Evidence of cosmic strings by the observation of the alignment of quasar polarization axes on Mpc scale", is circled in red. The second entry is "Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension".

13

# Abstract, metrics, citing docs, related docs, keywords, all references

The screenshot shows the document details page for the paper "Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension". The page includes the abstract, metrics (2 citations in Scopus, 4.92 field-weighted citation impact), a list of citing documents (2), and related documents. A red arrow points to the "link for citing docs" section.

14

**You can also access the full text for most papers**

Scopus Search Sources Alerts Lists Help v ScVal v Register Login v

**Document details**

< Back to results | < Previous 2 of 144 Next >

Export Download Print E-mail Save to PDF Add to List More...>

Download Article Download Article **← “View at Publisher” link** View at Publisher

Physical Review X Open Access  
Volume 8, Issue 1, 26 March 2018, Article number 011049

**Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension**  
(Article) (Open Access)

Roy, B.<sup>1</sup>, Foster, M.S.<sup>1\*</sup>

<sup>1</sup>Department of Physics and Astronomy, Rice University, Houston, TX 77005, United States  
<sup>1</sup>Rice Center for Quantum Materials, Rice University, Houston, TX 77005, United States

Abstract

We compute the effects of generic short-range interactions on gapless electrons residing at the quantum critical point separating a two-dimensional Dirac semimetal and a symmetry-preserving band insulator. The electronic dispersion at this critical point is anisotropic ( $E_{\pm} = \pm \sqrt{v^2 k_x^2 + M^2 k_y^2}$  with  $n=2$ ), which results in unconventional scaling of thermodynamic and transport quantities. Because of the vanishing density of states ( $\rho(E) \sim |E|^{n-1}$ ), this anisotropic semimetal (ASM) is stable against weak short-range interactions. However, for stronger interactions, the direct Dirac-semimetal to band-insulator transition can either (i) become a fluctuation-driven first-order transition (although unlikely in a particular microscopic model considered here, the anisotropic honeycomb lattice extended Hubbard model) or (ii) get avoided by an intervening broken-symmetry phase. We perform a controlled renormalization group analysis with the small parameter  $\epsilon = 1/n$ , augmented with a  $1/n$  expansion (parametrically suppressing quantum fluctuations in the higher dimension) by perturbing away from the one-dimensional limit, realized by setting  $\epsilon = 0$  and  $n \rightarrow \infty$ . We identify charge density wave (CDW), antiferromagnet (AFM), and singlet s-wave superconductivity as the three dominant candidates for broken symmetry. The onset of any such order at strong coupling ( $\epsilon < 0$ ) takes place through a continuous quantum phase transition across an interacting multicritical point, where the ordered phase, band insulator, Dirac, and anisotropic semimetal meet. We also present the phase diagram of an extended Hubbard model for the ASM, obtained via the controlled deformation of its counterpart in one dimension. The latter displays spin-charge separation and instabilities to CDW, spin density wave, and Luther-Emery liquid phases at arbitrarily weak coupling. The spin density wave and Luther-Emery liquid phases deform into pseudospin SU(2)-symmetric quantum critical points separating the ASM from the AFM and superconducting orders, respectively. Our phase diagram shows an intriguing interplay among CDW, AFM, and s-wave paired states that can be germane for a uniaxially strained optical honeycomb lattice for ultracold fermion atoms, or the organic compound  $\text{Gd}(\text{BEDT-TTF})_2$ . © 2018 authors. Published by the American Physical Society.

Reprints Database Information

View Compound

Indexed keywords

Engineering controlled terms: Anisotropy Charge density Charge density wave Corundum Density optical Honeycomb structures Hubbard model Metalloid Optical lattices Phase diagrams Quantum electronics Separation Shear waves Spin density wave Statistical mechanics

Metrics 69 Citations in Scopus 4.92 Field-Weighted Citation Impact

PluX Metrics Deep, Capture, Monitor, Social Media and Custom brand Scopus

Cited by 2 documents

Phase transition with trivial quantum criticality in an anisotropic Weyl semimetal  
Lu, X., Wang, J.-R., Liu, G.-Z. (2018) Physical Review B

Itinerant quantum multicriticality of two-dimensional Dirac fermions  
Roy, B., Goswami, P., Jun62, V. (2018) Physical Review B

View all 2 citing documents

Inform me when this document is cited in Scopus:  
Set citation alert? Set citation feed?

Related documents

Itinerant quantum multicriticality of two-dimensional Dirac fermions  
Roy, B., Goswami, P., Jun62, V. (2018) Physical Review B

Emergent Non-Fermi-Liquid at the Quantum Critical Point of a Topological Phase Transition in Two Dimensions

15

**Voilà!**

SAPS physics Journals Help/Feedback Journal, vol, page, DOI, etc.

**PHYSICAL REVIEW X**

Highlights Recent Subjects Accepted Collections Authors Referees Search Press About Staff

Open Access

**Quantum Multicriticality near the Dirac-Semimetal to Band-Insulator Critical Point in Two Dimensions: A Controlled Ascent from One Dimension**

Bitan Roy and Matthew S. Foster  
Phys. Rev. X **8**, 011049 – Published 26 March 2018

Article References Citing Articles (2) PDF HTML Export Citation

ABSTRACT

We compute the effects of generic short-range interactions on gapless electrons residing at the quantum critical point separating a two-dimensional Dirac semimetal and a symmetry-preserving band insulator. The electronic dispersion at this critical point is anisotropic ( $E_{\pm} = \pm \sqrt{v^2 k_x^2 + M^2 k_y^2}$  with  $n = 2$ ), which results in unconventional scaling of thermodynamic and transport quantities. Because of the vanishing density of states ( $\rho(E) \sim |E|^{n-1}$ ), this anisotropic semimetal (ASM) is stable against weak short-range interactions. However, for stronger interactions, the direct Dirac-semimetal to band-insulator transition can either (i) become a fluctuation-driven first-order transition (although unlikely in a particular microscopic model considered here, the anisotropic honeycomb lattice extended Hubbard model) or (ii) get avoided by an intervening broken-symmetry phase. We perform a controlled renormalization group analysis with the small parameter  $\epsilon = 1/n$ , augmented with a  $1/n$  expansion (parametrically suppressing quantum fluctuations in the higher dimension) by perturbing away from the one-dimensional limit, realized by setting  $\epsilon = 0$  and  $n \rightarrow \infty$ . We identify charge density wave (CDW),

Issue  
Vol. 8, Iss. 1 — January - March 2018

Subject Areas  
Condensed Matter Physics  
Strongly Correlated Materials

Check for updates

16



# You can also search by author

Use the "Author search"

Scopus Search Sources Alerts Lists Help SciVal Register Login

## Author search

Compare sources

To determine which author names should be grouped together under a single identifier number, the Scopus Author Identifier uses an algorithm that matches author names based on their affiliation, address, subject area, source title, dates of publication, citations, and co-authors. Documents with insufficient data may not be matched, this can lead to more than one entry in the results list for the same author. By default, only details pages matched to more than one document in Scopus are shown in search results. About Scopus Author Identifier

Documents **Authors** Affiliations Advanced Search tips

Author last name  Author first name   
*e.g. Smith* *e.g. J.L.*

Affiliation   Show exact matches only

ORCID    
*e.g. 1111-2222-3333-4444*

17

# You can also search by author

Type in author surname and first name or initials

Scopus Search Sources Alerts Lists Help SciVal Register Login

## Author search

Compare sources

To determine which author names should be grouped together under a single identifier number, the Scopus Author Identifier uses an algorithm that matches author names based on their affiliation, address, subject area, source title, dates of publication, citations, and co-authors. Documents with insufficient data may not be matched, this can lead to more than one entry in the results list for the same author. By default, only details pages matched to more than one document in Scopus are shown in search results. About Scopus Author Identifier

Documents **Authors** Affiliations Advanced Search tips

Author last name  Author first name   
*e.g. Smith* *e.g. J.L.*

Affiliation   Show exact matches only

ORCID

18

## You can also search by author

Turn on "exact matches" to narrow search

The screenshot shows the Scopus Author search page. At the top, there is a navigation bar with 'Search', 'Sources', 'Alerts', 'Lists', 'Help', 'SciVal', 'Register', and 'Login'. Below this is a blue header with 'Author search' and a 'Compare sources' link. A blue information box explains the Scopus Author Identifier algorithm. The search form has tabs for 'Documents', 'Authors', 'Affiliations', and 'Advanced'. The 'Authors' tab is active. There are two input fields: 'Author last name' with 'Fradkin' and 'Author first name' with 'Eduardo'. Below these is an 'Affiliation' field with a placeholder 'eg. University of Toronto'. A checkbox labeled 'Show exact matches only' is checked. A 'Search Q' button is on the right. At the bottom, there is an 'ORCID' field with another 'Search Q' button.

19

## You can also search by author

Leave "Affiliation" blank for more results

This screenshot is identical to the one above, but the 'Show exact matches only' checkbox is unchecked. A red arrow points from the text 'Leave "Affiliation" blank for more results' to the 'Affiliation' input field, which is currently empty.

20

## Select the correct author...

The screenshot shows the Scopus search results for the author 'Fradkin, Eduardo'. The search criteria are 'Author last name "Fradkin", Author first name "Eduardo"'. The results are sorted by 'Document count (high-low)'. There are two author entries. The first entry is 'Fradkin, Eduardo H.' with 225 documents. The second entry is 'Fradkin, Eduardo' with 1 document. A red circle highlights the 'Show documents' link for the first entry, with a red arrow pointing to it. The text 'and click on "Show documents"' is overlaid at the bottom of the screenshot.

21

## And we get Eduardo's 226 papers

The screenshot shows the Scopus search results for the author 'Fradkin, Eduardo'. The search criteria are 'AU-ID ("Fradkin, Eduardo H." 35498145900) OR AU-ID ("Fradkin, Eduardo" 57203044407)'. The results are sorted by 'Date (newest)'. There are two papers listed. The first paper is 'Scrambling in the quantum Lifshitz model' by Flamadeala, E., Fradkin, E., published in 2018 in 'Journal of Statistical Mechanics: Theory and Experiment'. The second paper is 'Pair density waves in superconducting vortex halos' by Wang, Y., Edkins, S.D., Hamidian, M.H., Fradkin, E., Kivelson, S.A., published in 2018 in 'Physical Review B'. Red arrows point to the 'Access type' filter, the 'Year' filter, and the 'Sort on: Date (newest)' dropdown menu. The text 'which can also be sorted in a variety of ways' is overlaid at the bottom of the screenshot.

22

## Scopus can dump citation data to your reference manager by magic

Analyze search results Show all abstracts Sort on: Date (newest)

All  Export  Download  View citation overview  View cited by  Add to List ⋮ 🖨️ ✉️ 🚫

	Document title	Authors	Year	Source
<input checked="" type="checkbox"/> 1	Scrambling in the quantum Lifshitz model	Plamadeala, E., Fradkin, E.	2018	Journal of Statistical Mechanics: Theory and Experiment 2018(6),063102
	<a href="#">View abstract</a> <a href="#">DOI</a> <a href="#">Cover full text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>			
<input checked="" type="checkbox"/> 2	Pair density waves in superconducting vortex halos	Wang, Y., Edkins, S.D., Hamidian, M.H., (...), Fradkin, E., Kivelson, S.A.	2018	Physical Review B 97(17),174510
	<a href="#">View abstract</a> <a href="#">DOI</a> <a href="#">Cover full text</a> <a href="#">View at Publisher</a> <a href="#">Related documents</a>			
<input checked="" type="checkbox"/> 3	Loop models, modular invariance, and three-dimensional bosonization	Goldman, H., Fradkin, E.	2018	Physical Review B 97(19),195112

**“Turn on” the papers you want to export**

23

## Then tell Scopus what you want, how you want it, and then click “Export”

Export document settings ×

You have chosen to export 4 documents

Select your method of export

MENDELLEY  RefWorks  RIS Format EndNote Reference Manager  CSV Excel  BibTeX  Plain Text ASCII HTML

What information do you want to export?

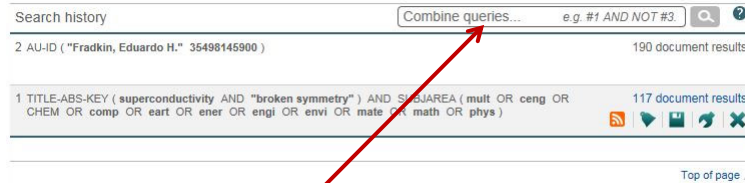
<input checked="" type="checkbox"/> Citation information	<input type="checkbox"/> Bibliographical information	<input type="checkbox"/> Abstract & keywords	<input type="checkbox"/> Funding details	<input type="checkbox"/> Other information
<input checked="" type="checkbox"/> Author(s)	<input type="checkbox"/> Affiliations	<input type="checkbox"/> Abstract	<input type="checkbox"/> Number	<input type="checkbox"/> Tradenames & manufacturers
<input checked="" type="checkbox"/> Document title	<input type="checkbox"/> Serial identifiers (e.g. ISSN)	<input type="checkbox"/> Author keywords	<input type="checkbox"/> Acronym	<input type="checkbox"/> Accession numbers & chemicals
<input checked="" type="checkbox"/> Year	<input type="checkbox"/> PubMed ID	<input type="checkbox"/> Index keywords	<input type="checkbox"/> Sponsor	<input type="checkbox"/> Conference information
<input checked="" type="checkbox"/> Source title	<input type="checkbox"/> Publisher		<input type="checkbox"/> Funding text	<input checked="" type="checkbox"/> Include references
<input checked="" type="checkbox"/> volume, issue, pages	<input type="checkbox"/> Editor(s)			
<input checked="" type="checkbox"/> Citation count	<input type="checkbox"/> Language of original document			
<input checked="" type="checkbox"/> Source & document type	<input type="checkbox"/> Correspondence address			
<input checked="" type="checkbox"/> DOI	<input type="checkbox"/> Abbreviated source title			

**“Citation Information” is the default**  
**Can also export bibliographic information, abstract and key words, references, funding details, and “other” information**

**Zotero uses RIS format**

24

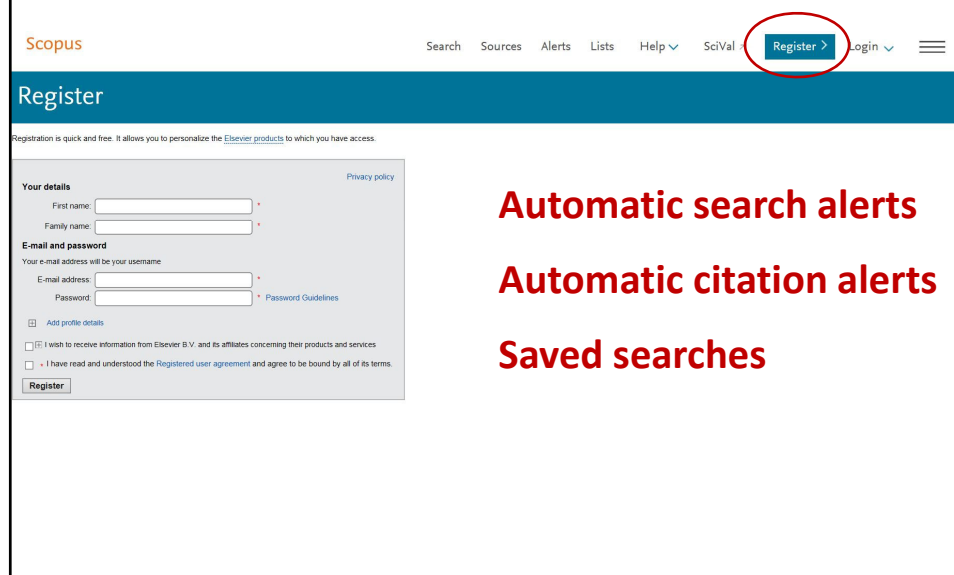
## Scopus saves up to 50 searches per session automatically



which can be combined

25

## Free registration gives access to additional services

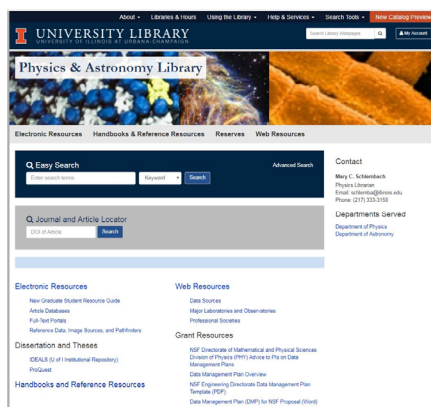


26

## Want to use Scopus\* from home?

Log in through the Library gateway at the bottom of the Physics homepage or go directly to

<http://www.library.illinois.edu/phx/>



\*or any of the Physics electronic resources

  
[cmelliott@illinois.edu](mailto:cmelliott@illinois.edu)  
<http://physics.illinois.edu/people/Celia>