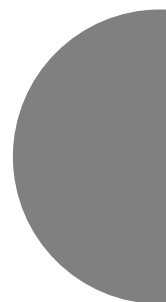


Part II Information Research in Natural Science

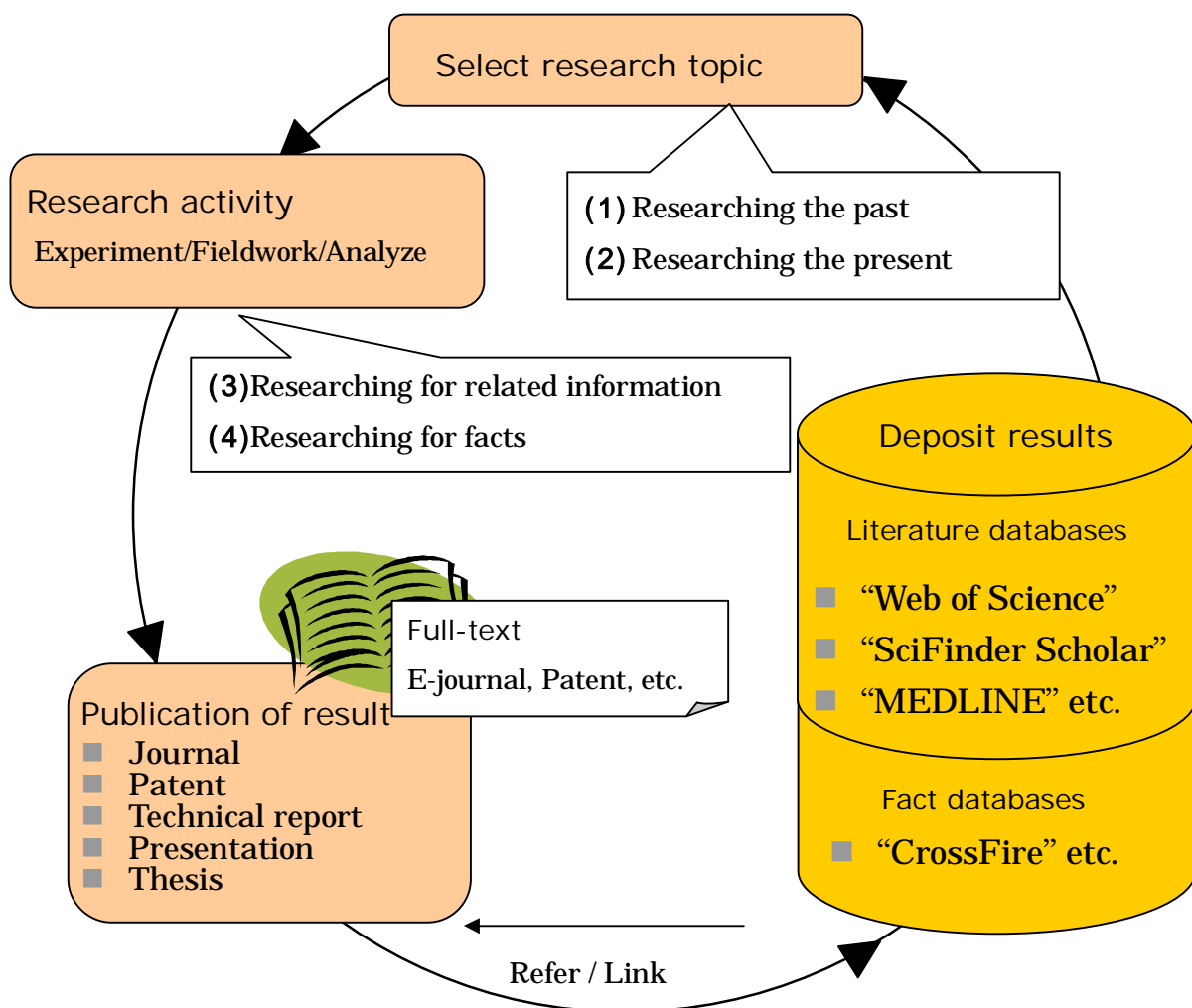


1 Flow of Research Activity and Information Research

In natural science study, it's especially important to use the results of research in related fields. The results of past and present research is used in every research step.

It's essential to search for such material from reliable resources. For example, academic journals which have high standards in each research field are one of such resource.

In the case of databases, choose one that is produced by an academic institution or society. To get the information which you need, knowledge of research activity flow, the kind of information research, the features of each resource are all necessary.



As the figure on the previous page shows, the cycle of research activity starts with referring to previous research, then stacking the results in databases, so that other researchers can refer to them for new research.

(1) Researching the Past

To choose the theme, let's begin by browsing current journals or reviews.

When you have chosen a theme, it's necessary to search for results about what has been written on the topic in the past, and gather as much information as possible.

Many result papers are written in English, so you should search not only domestic but also foreign resources.

(2) Researching the Present

By checking current journals, or searching databases, you can confirm the situation of the topic in current research. It's necessary to research current activity, because new papers are produced every day!

(3) Researching for Related Information

When you want to make sure of the facts, you should confirm them with related papers. You will find these in some databases, or in reference lists.

"Web of Science" has a function that allows you to reach related papers using citing/cited information.

(4) Researching for Facts

Sometimes you may need factual data, for instance, calculated/analyzed data about the nature of materials. You will find this in the recent database. However there is traditional printed matter too.

Research results are published as journal papers, then database vendors or publishers gather them and put them into their databases. Recently as soon as new research is published in printed form, the electronic version will become be available.

2 Tohoku University "Online Catalog(OPAC)"

Items	Information
Creator	Tohoku University Library
Coverage	Books 1.7million (approximately) , Serials 60,000titles (approximately) in Tohoku University (all campus) Books and Serials holding in other domestic university libraries (by checking box)
URL	http://www.library.tohoku.ac.jp/opac/expert-query-e
How to Use	Available from any place
more	Using via "MyLibrary", you will find links to other services (university members only) . E-journals linked from OPAC are available from computers inside the campus.

Top page of advanced search

The screenshot shows the 'Advanced Search' page of the Tohoku University Online Catalog. The page is titled 'Online Catalog' and includes a 'MyLibrary' logo. The search form is organized into several sections:

- Location:** A dropdown menu with options: (all), Kawauchi Campus, -MainLIB, -AL, -EDCU.
- The object of reference:**
 - Books
 - Japanese books
 - Foreign books
 - Journals
 - Japanese journals
 - Foreign journals
- Search Criteria:**
 - Any (Keyword) [dropdown]
 - Author [input]
 - Publisher [input]
 - Year Published: [input] - [input]
 - Country: (all) [dropdown]
 - Language: (all) [dropdown]
 - Subject: ALL [dropdown]
 - Data type: (all) [dropdown]
 - Sort: Title [dropdown]
 - Display: 20 [input] item per page

At the bottom of the form, there are buttons for 'Search', 'Clear', 'Keyboard', 'Basic Search', and 'HELP'. The 'Basic Search' button is circled in red, and a yellow callout box with an arrow points to it.

2.1 How to Input Keywords

2.1.1 Search by Bibliography or Key Words

- <bibliographies>

Input title, author, etc. as it is.

e.g. “the chrysanthemum and the sword”

- <key words>

Input keywords.

e.g. “chrysanthemum sword”

This is Boolean “AND” search.

“electronic circuit” is better than the compound noun
“electroniccircuit” for producing a larger number of results.

2.1.2 Chinese letters, Em-/En-size, etc.

- If you do not know key words in *Kanji* (Chinese letters), input them in *Hiragana*, *Katakana* (Japanese letters) or *Romaji*(Roman letters).

e.g. If you do not know “漱石”, input “そうせき” or “ソウセキ” or “soseki”.

- Distinction of Em-size or En-size is not necessary.

e.g. “P l a t o” “Plato”

“C D - R O M” “CD-ROM”

- The distinction of capital letters or small letters is not necessary, either.

e.g. “INFORMATION” “Information” “information”

2.1.3 Truncation

Use *(asterisk) for Right Hand Truncation.

e.g. “jour*” “app*” “phys*”

You will find “Journal of applied physics” and so on.

“sociolo*”

You will find “sociology” “sociologist” “sociological” and so on.

2.1.4 Others

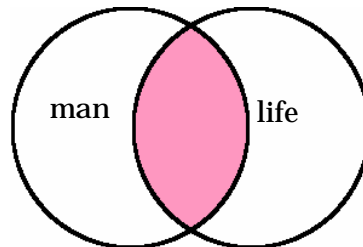
- Spelling signs (e.g. an umlaut sign“ ”) and accent signs (e.g.“ ’ ”or“ ^ ”) are not necessary.
e.g. “wörterbuch” “worterbuch”
- Papers are not searchable.
The Online Catalog is a tool to find books and journals. To find a paper, you need to know which journal contains it.



2.1.5 Logical Operation("Advanced Search")

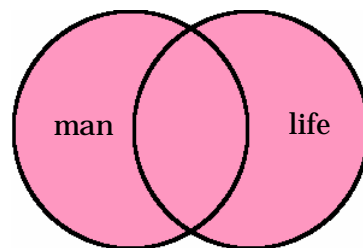
(1) AND Search

Retrieval of the records that includes both "man" and "life".



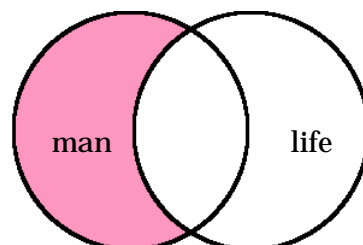
(2) OR Search

Retrieval of the records that includes either "man" or "life".



(3) NOT Search

Retrieval of the records that includes "man" negating "life".



If you get too many results:

- Try AND Search

If you do not find the material you want:

- Input other words with space
- Try Right Hand Truncation

If you are to get many results:

- Try OR Search

2.2 Detailed Information on Books

Classical mechanics / Herbert Goldstein
 (Addison-Wesley series in physics)

Edition: 2nd ed
 Publisher: Reading, Mass. : Addison-Wesley
 Year: c1980
 Size: xiv, 672 p. ; ill. ; 24 cm
 Notes: Bibliography: p. 621-630
 Includes indexes
 Authors: *Goldstein, Herbert, 1922-
 Subjects: PRECIS: [Mechanics](#)
 LCSH: [Mechanics](#)
 Classification: LCC: [QC123.2](#)
 DC19: [531](#)
 Language: English
 Codes: CODE=20131025 NCID=BA00434784

Webcat Plus

Back Top Loan/Copy request

Volume	Location	Call No.	Barcode No.	Condition	Comments	ISBN	Restriction
	LIB-Gakuetsu	MC71/51	00950192473	Missing		020129189	
	LIB-Stacks	MC71/22	01810617501				
	KITALIB-Open	MC71/137	02021000045			020129693	
	KITALIB-Open	MC71/137	03860045542				
	SCI-ParticleTheory	MC71	02980001813			020129189	
	ENGLIB	423.1/23	03900026526			020129189	
	ENG-AppliedParticleBeam	423.1/23	03930021067	Missing		020129189	

Back

ページが表示されました

- Items and contained information

Items	Information
Vol.	volume (ex. vol.1, vol.2), part(ex. the first part, the second part)
Location	where the material is located
Call No.	the number labeled on the back cover
Barcode No.	ID number of the book
Condition	the status of “on loan” or “missing”



- Take a note of the “Location” and “Call No.” to find the book you want. If you need to ask a library staff, Barcode Number (ID number) is helpful.

2.3 Detailed Information on Journals

2.3.1 Display of Locations

e.g. “Canadian journal of botany”

The screenshot shows a library catalog entry for the 'Canadian journal of botany'. The page includes a header with the journal title, a 'Webcat Plus' section with navigation buttons, and a table of volumes. Annotations with red boxes and arrows point to specific elements: a box labeled 'Information on bibliographies' points to the 'Notes' and 'Relatives' fields; a box labeled 'Information on location' points to the 'Location' column of the volume table; a box labeled 'Link to detailed location of non-bindings' points to the 'Back number' column; and a box labeled 'Link to detailed location of bindings' points to the 'Call number' column.

Information on bibliographies

Information on location

Volumes (All Volumes)	Year	Location	Ca. No.	Comment
29-30,32-34,36-76	1951-1998	GSLs-LibKatahira(NC)		
47-82,83(1-9)+	1969-2005	KITALIB		
43-55,56(1-23),57-67,68(2-10),69	1965-1991	AGRLIB		

Link to detailed location of non-bindings

Link to detailed location of bindings

• Items and contained information

Items	Information
Volumes	<ul style="list-style-type: none"> • which volumes are held e.g. “1,21-41” means “vol.1 and vol.21-41 are held” e.g. “1-20,21(1-4,6-12),22-41+” ()are issues. In this case, 21(5) is not held. “+”at the end means acquisition is continued. • Volumes and issues is a link to the detailed information on where the bindings are. • “All volumes” is a link to the detailed information on the all of the bindings in our university.
Year	The range of years of volumes held
Location	Where the material is located. Detailed information is available for each page
Current issues	<ul style="list-style-type: none"> • Where the non-bindings are located <p>This is the link to the detailed information on where the non-bindings are.</p>
Back Number	Where the bindings are.

2.3.2 Detailed Location of Bindings

Canadian journal of botany

Volumes(year) Vol. 29, no. 1 (Feb. 1951)-
 Publisher Ottawa : National Research Council
 Year 1951-
 Other titles AB.Can. j. bot
 KT.Canadian journal of botany
 OH.Revue canadienne de botanique
 Notes Parallel title: Revue canadienne de botanique, <V. 70, no 10 (oct. 1992).->
 Includes bibliographies
 Relatives Continues [Canadian journal of research, Sect. C, Botanical sciences<AA00597554>](#)
 Language English,French
 Codes CODE=30005415 ISSN=00084026 NCID=AA00597543
 URL1 [電子ジャーナル情報 \[学内限定\]](#)
[E-Journal Information \[on-campus only\]](#)

Webcat Plus

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New

Volumes	Year	Location	Call No.	Barcode No.	Condition	Comment
82(9-12)	2004	KITALIB-Open		02055003381		
82(5-8)	2004	KITALIB-Open		02055003372		
82(1-4)	2004	KITALIB-Open		02055003364		
81(9-12)	2003	KITALIB-Open		02045004191		
81(5-8)	2003	KITALIB-Open		02045004182		
81(1-4)	2003	KITALIB-Open		02045004174		
80(9-12)	2002	KITALIB-Open		02035005900		

You can check:

- Whether the volume you want is held or not
- Where it is located
- Its status (sometimes “on loan” or “missing”)

2.3.3 Detailed Location of Non-bindings

Canadian journal of botany

Volumes(year) Vol. 29, no. 1 (Feb. 1951)-
 Publisher Ottawa : National Research Council
 Year 1951-
 Other titles AB.Can. j. bot
 KT.Canadian journal of botany
 OH.Revue canadienne de botanique
 Notes Parallel title: Revue canadienne de botanique, <V. 70, no 10 (oct. 1992).->
 Includes bibliographies
 Relatives Continues [Canadian journal of research, Sect. C, Botanical sciences<AA00597554>](#)
 Language English,French
 Codes CODE=30005415 ISSN=00084026 NCID=AA00597543
 URL1 [電子ジャーナル情報 \[学内限定\]](#)
[E-Journal Information \[on-campus only\]](#)

Webcat Plus

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Loan/Copy request

Current issues		Back number	Call number	Status	Binding
KITALIB-Open-Biol		KITALIB-Open		継続	○

Vol.	No.	Part	Comment	Published	Check in	Condition	Barcode No.
84	1			2006. 1. 1		On wanting	
83	12			2005.12. 1		On wanting	
83	11			2005.11. 1		On wanting	
83	10			2005.10. 1		On wanting	
83	9			2005. 9. 1	2006. 2. 1		
83	8			2005. 8. 1	2006. 1.17		
83	7			2005. 7. 1	2006. 1.11		

You can confirm:

- The volume is not missing or “On wanting(not delivered issue)”
- The volume is not “On Bind(being rebound)”

2.4 To Search Collections of Other Universities

If you check both “Inside the Univ.” and “Outside the Univ.”, you search both Tohoku University Library and other university libraries. Other universities are searched only when you do not find the material in Tohoku University Library.

- If you are to focus on other universities, remove the check of “Inside the Univ.”.
- There are some limitations on the “Outside the Univ.” search. For example, you cannot narrow the range of years.
- There are some differences between the search results of “Inside the Univ.” and that of “Outside the Univ.”.



e.g. the search result of “Tokyo earthquake report”

- Results : “Inside the Univ.”



• Results : “Outside the Univ.”

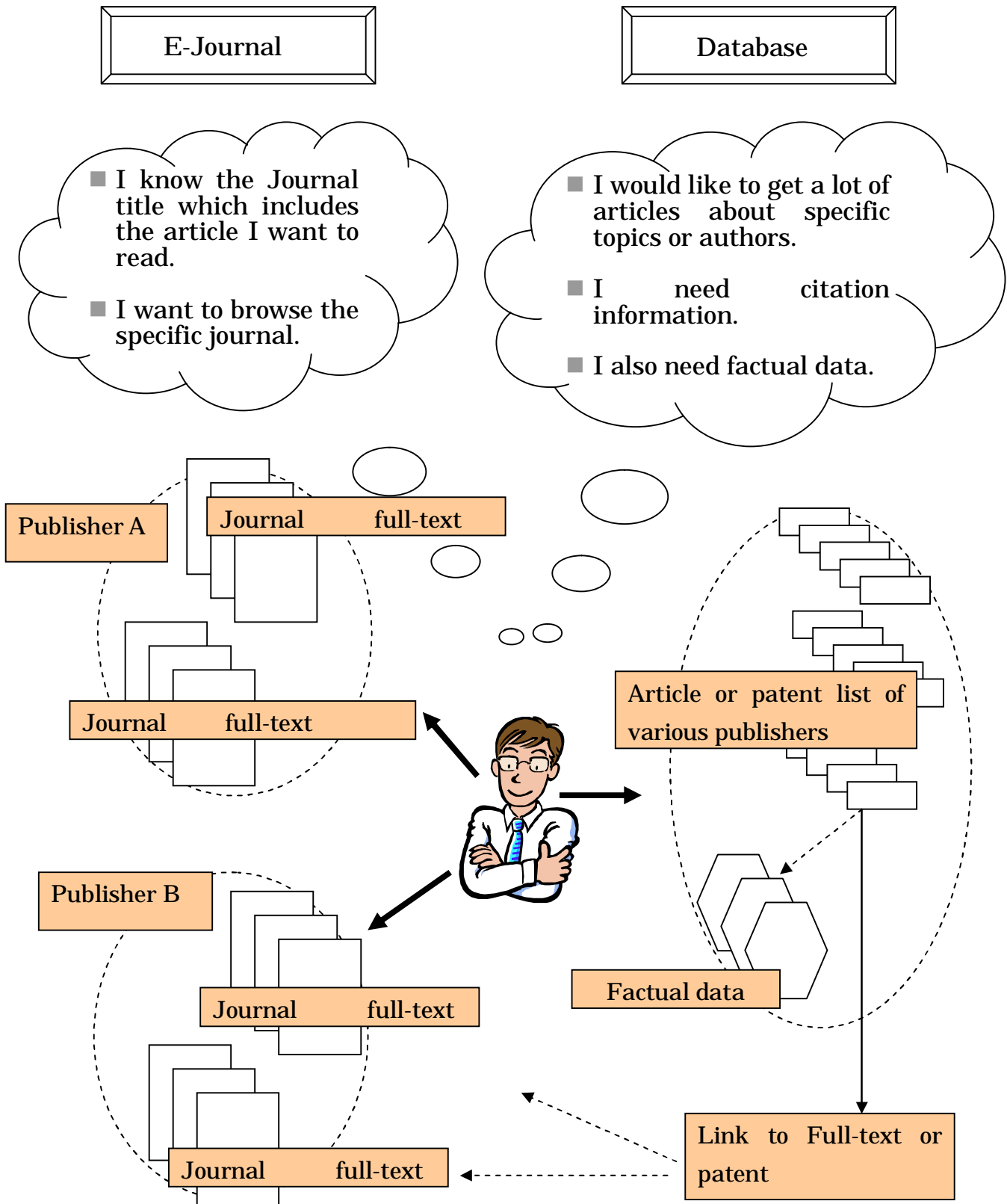


If you click the title of an item in the search result of “Outside the Univ.”, universities that hold the item are displayed in Japanese (sorry!).



3 E-Journal

3.1 Database or E-Journal?



3.2 Operation

We offer an E-journal list (approximately 8,000 e-journals) on the library website. Choose the journal title that you would like to read, and click it. Academic articles can be downloaded or printed out for research use. There are strict rules governing the use of E-journals. If someone breaks these rules, the publisher will stop subscription all over Tohoku University. Users are prohibited from downloading a large number of papers in a short time, for instance.

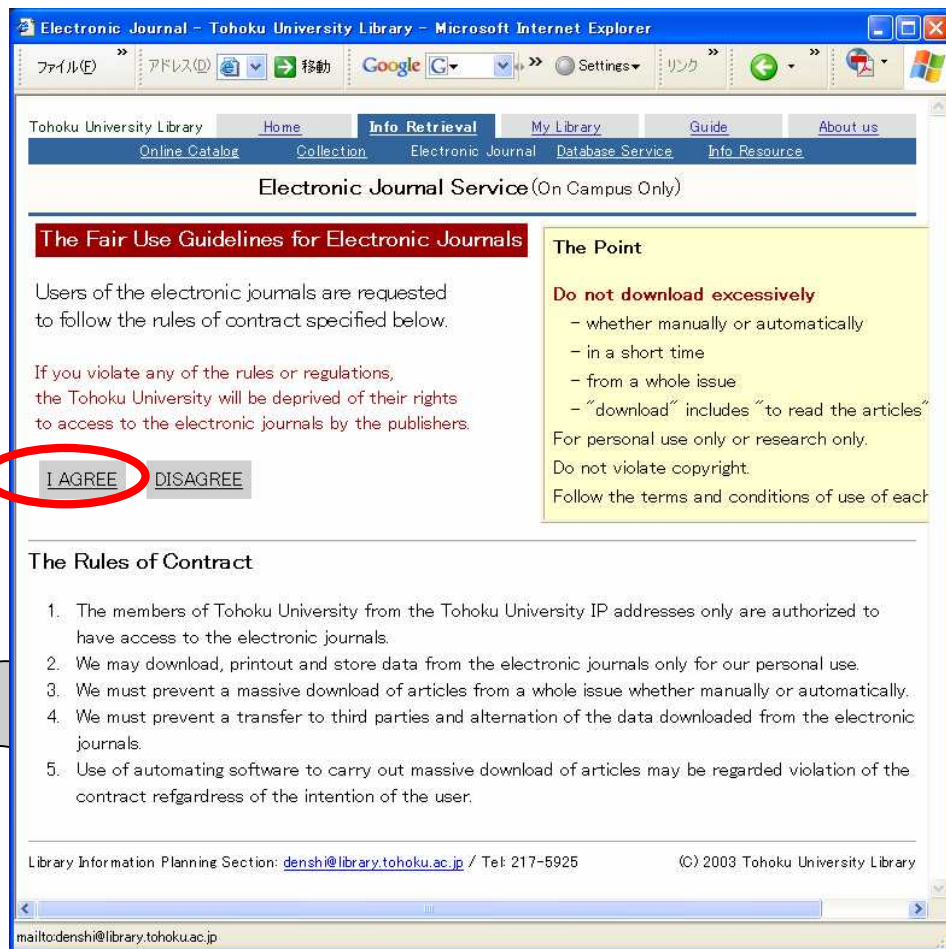
e.g. Search for the following article. “Aimo Winkelmann, “Dynamical simulations of zone axis electron channeling patterns...” Ultramicroscopy, vol.98, no.1, 2003, p.1-7”

1) Click “Electronic Journals” of Library website



The screenshot shows the Tohoku University Library website in a Microsoft Internet Explorer browser window. The page title is "Tohoku University Library" and the URL is "http://ir.library.tohoku.ac.jp/". The page features a navigation menu with links for "Main Lib.", "Med. Lib.", "Kita-Aoba Lib.", "Eng. Lib.", "Agr. Lib.", and "Faculty Libs.". A search box is visible in the top right corner. The main content area includes an "Information" section with a list of recent updates, such as "TOUR (TOhoku University Repository)" and "Web of Science backfiles are available / No limit for simultaneous access". Below this, there are three main sections: "Info. Retrieval", "For Students & Faculty", and "Guide". The "For Students & Faculty" section contains a "MyLibrary" login form and a list of services, including "Electronic Journals" which is circled in red. The "Info. Retrieval" section lists "Online Catalog", "T-LINES OPAC", "Books on Syllabus", and "Sendai OPAC". The "Guide" section lists "General Service Guide", "Library Hours", and "for Visitors".

2) Read the guidelines about fair use, then click “I AGREE”.



Electronic Journal - Tohoku University Library - Microsoft Internet Explorer

Tohoku University Library Home Info Retrieval My Library Guide About us

Online Catalog Collection Electronic Journal Database Service Info Resource

Electronic Journal Service (On Campus Only)

The Fair Use Guidelines for Electronic Journals

Users of the electronic journals are requested to follow the rules of contract specified below.

If you violate any of the rules or regulations, the Tohoku University will be deprived of their rights to access to the electronic journals by the publishers.

I AGREE **DISAGREE**

The Point

Do not download excessively

- whether manually or automatically
- in a short time
- from a whole issue
- “download” includes “to read the articles”

For personal use only or research only.
Do not violate copyright.
Follow the terms and conditions of use of each

The Rules of Contract

1. The members of Tohoku University from the Tohoku University IP addresses only are authorized to have access to the electronic journals.
2. We may download, printout and store data from the electronic journals only for our personal use.
3. We must prevent a massive download of articles from a whole issue whether manually or automatically.
4. We must prevent a transfer to third parties and alternation of the data downloaded from the electronic journals.
5. Use of automating software to carry out massive download of articles may be regarded violation of the contract regardless of the intention of the user.

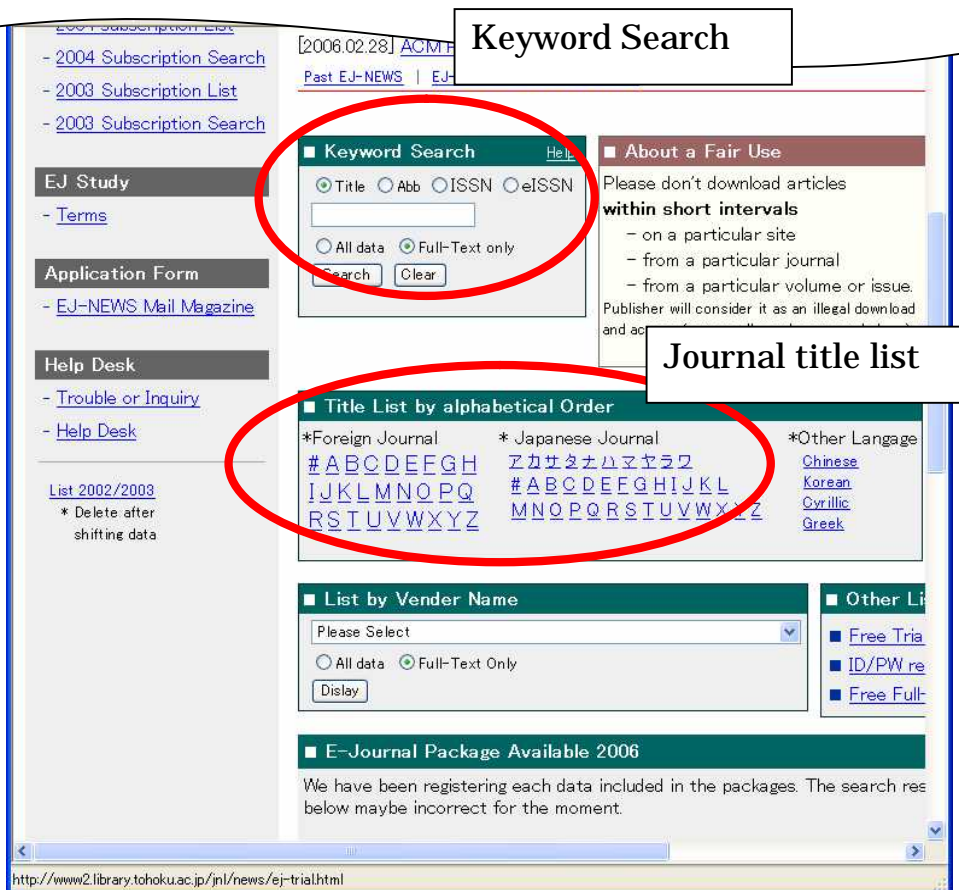
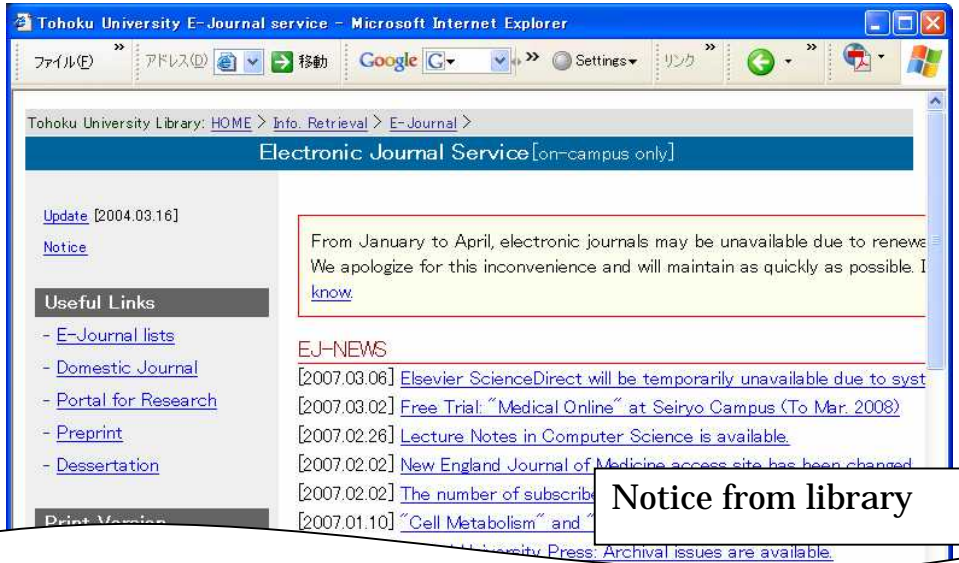
Library Information Planning Section: denshi@library.tohoku.ac.jp / Tel: 217-5925 (C) 2003 Tohoku University Library

<mailto:denshi@library.tohoku.ac.jp>

The Rules of Contract

1. The members of Tohoku University from the Tohoku University IP addresses only are authorized to have access to the electronic journals.
2. We may download, printout and store data from the electronic journals only for our personal use.
3. We must prevent a massive download of articles from a whole issue whether manually or automatically.
4. We must prevent a transfer to third parties and alternation of the data downloaded from the electronic journals.
5. Use of automating software to carry out massive download of articles may be regarded as violation of the contract regardless of the intention of the user.

3) Select from title list or search title keyword, ISSN, and so on.



4) Select the journal from title list.

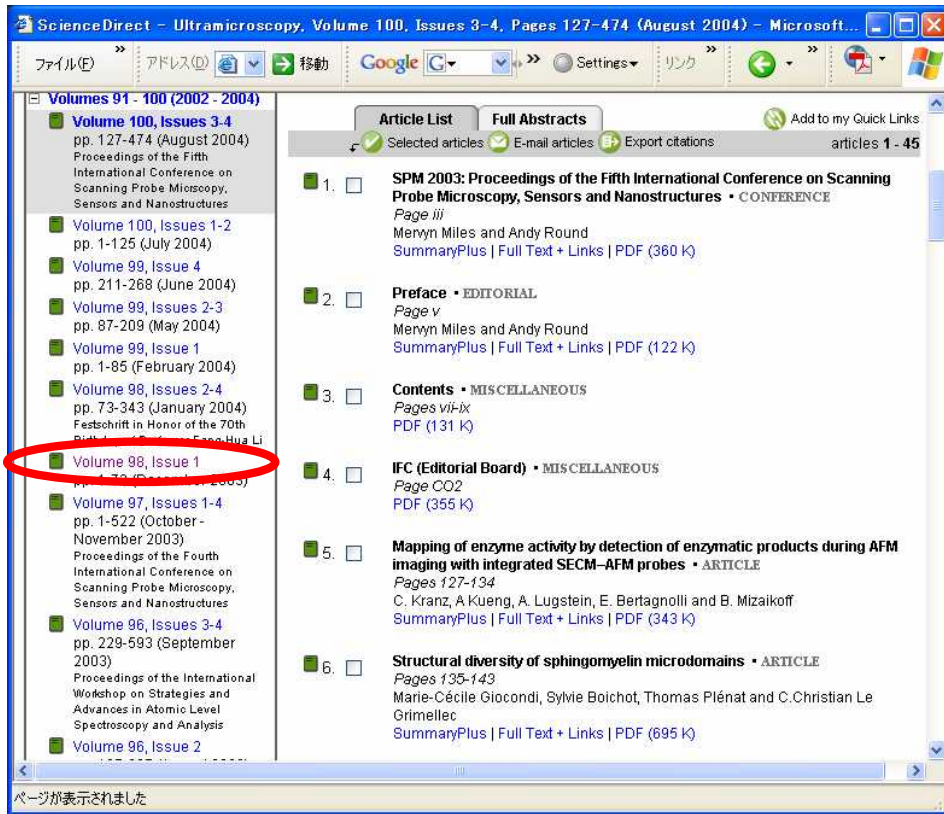
The screenshot shows the 'Ultramicroscopy' journal entry in a list. The entry is: **** Ultramicroscopy** (North-Holland) - ScienceDirect. The journal title is circled in red.

5) Confirm subscription conditions.

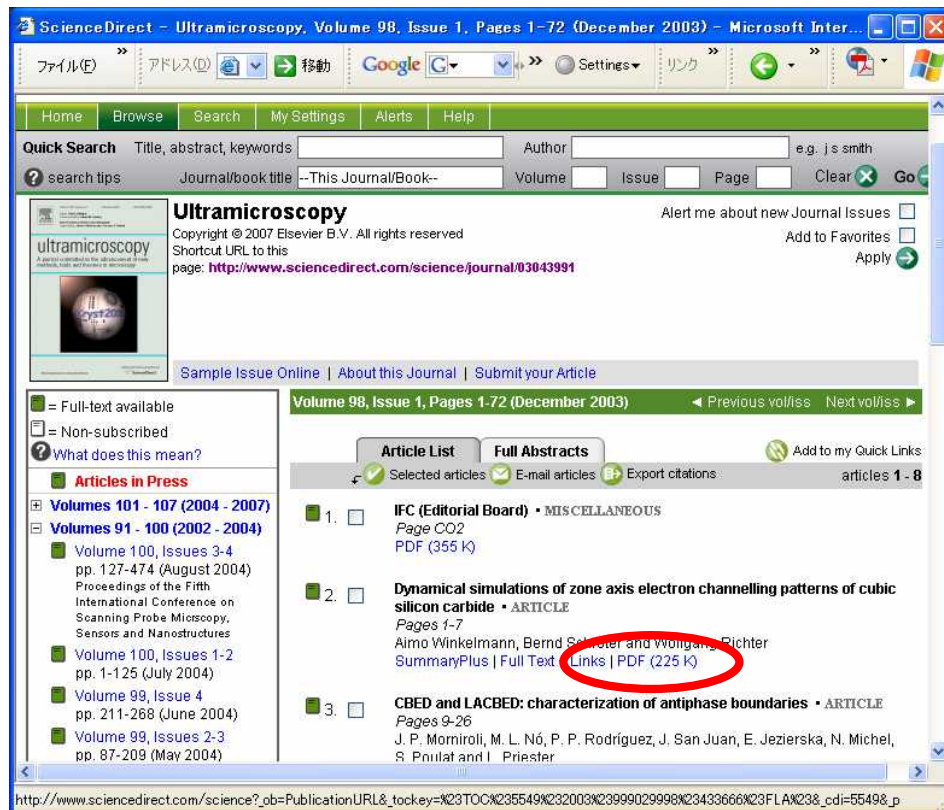
The screenshot shows the 'Ultramicroscopy' journal detail page. The journal title is circled in red. The page includes an 'Access' section with a warning: "Do not download excessively. Make fair use!". Below this, there is a table with subscription information:

Information for use			
Full-Text	Available with Current Contract	1995- (v.57(1)-)	Holdings Info (linking photocopy request) - Tohoku University (print) - Other libraries (print)
Abstracts	Available with Current Free	1976- (v.1(3-4)-)	
Table of Contents	Available with Current Free	1976- (v.1(3-4)-)	

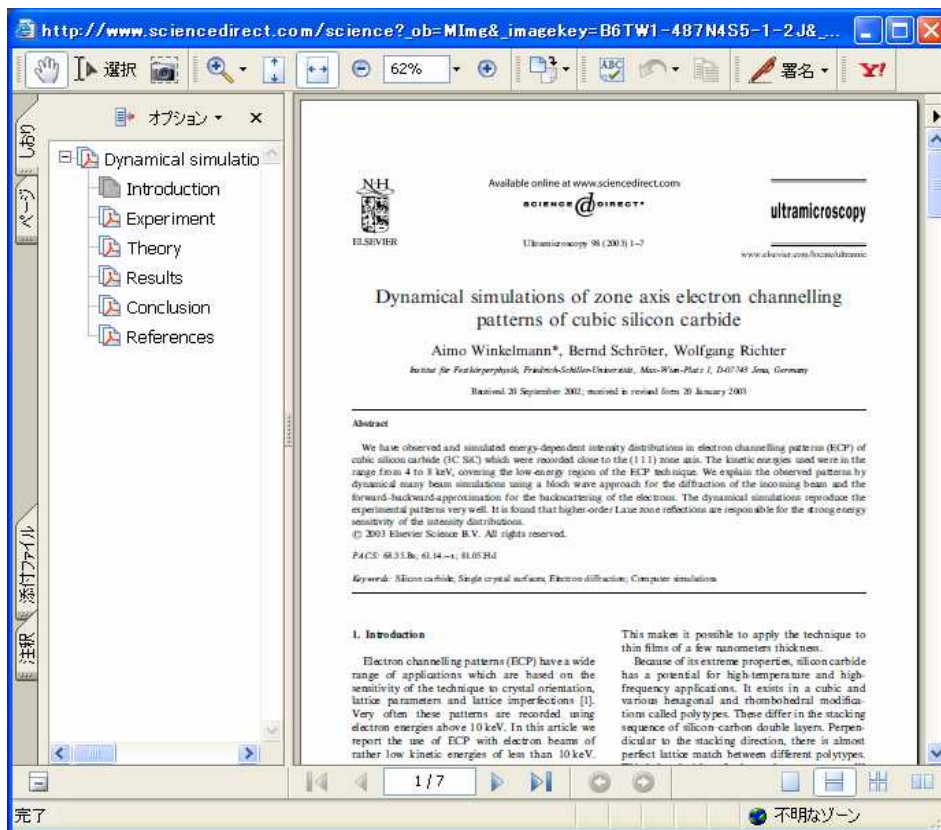
6) Select volume and issue.



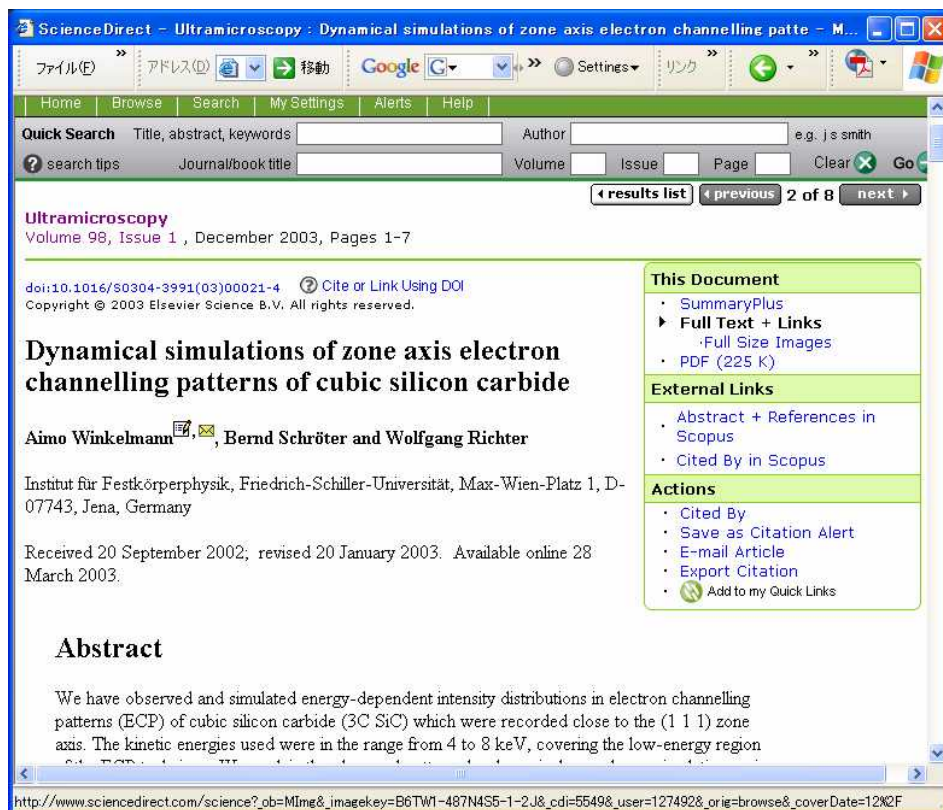
7) Click "PDF" to see full-text.



8) PDF format full-text

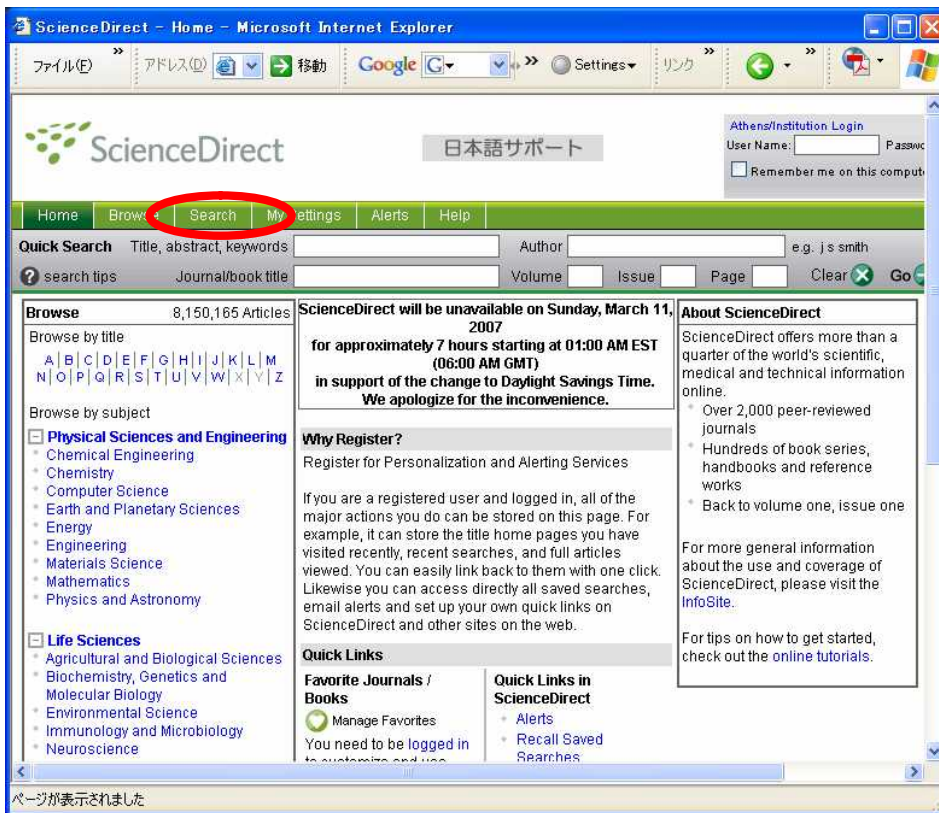


9) HTML format full-text

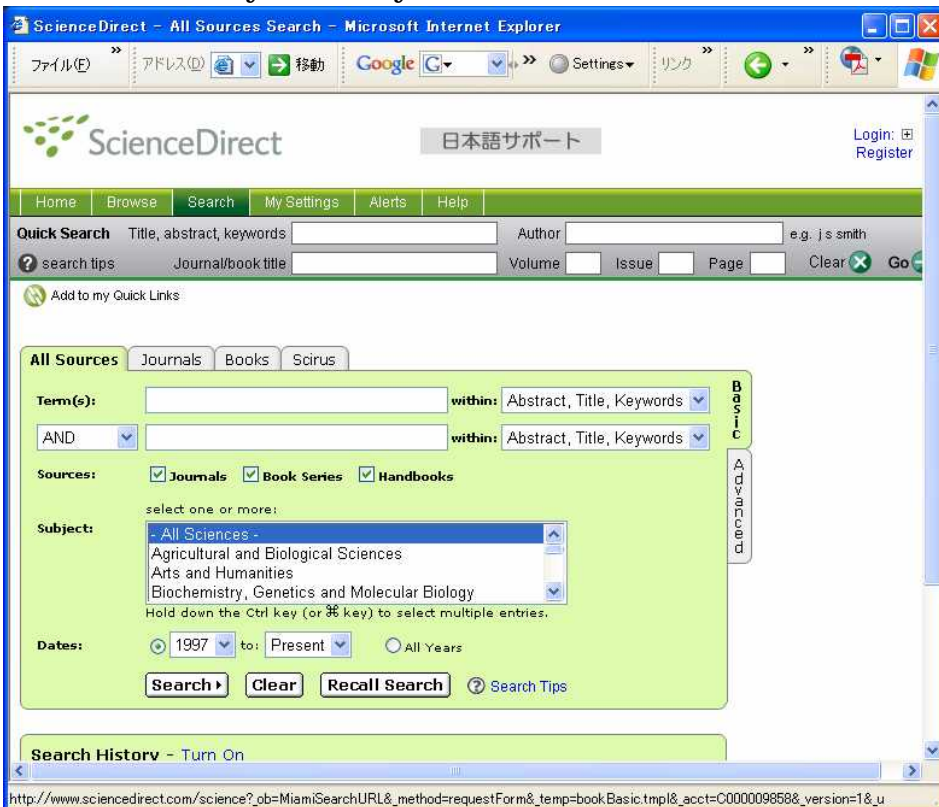


3.2.1 Search Articles at Publisher's Websites

1) For example, let's search for articles using "ScienceDirect".



2) You can search by title, keyword, author and so on.

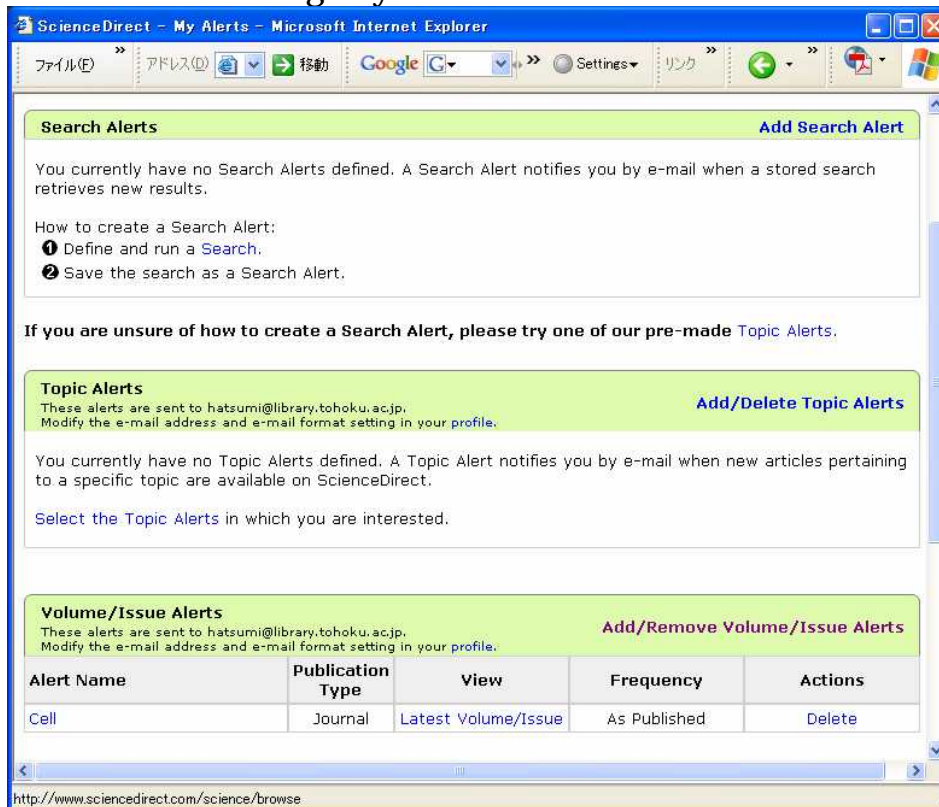


3.2.2 Contents Alert

1) Many online journal websites offer a “Contents Alert” function.

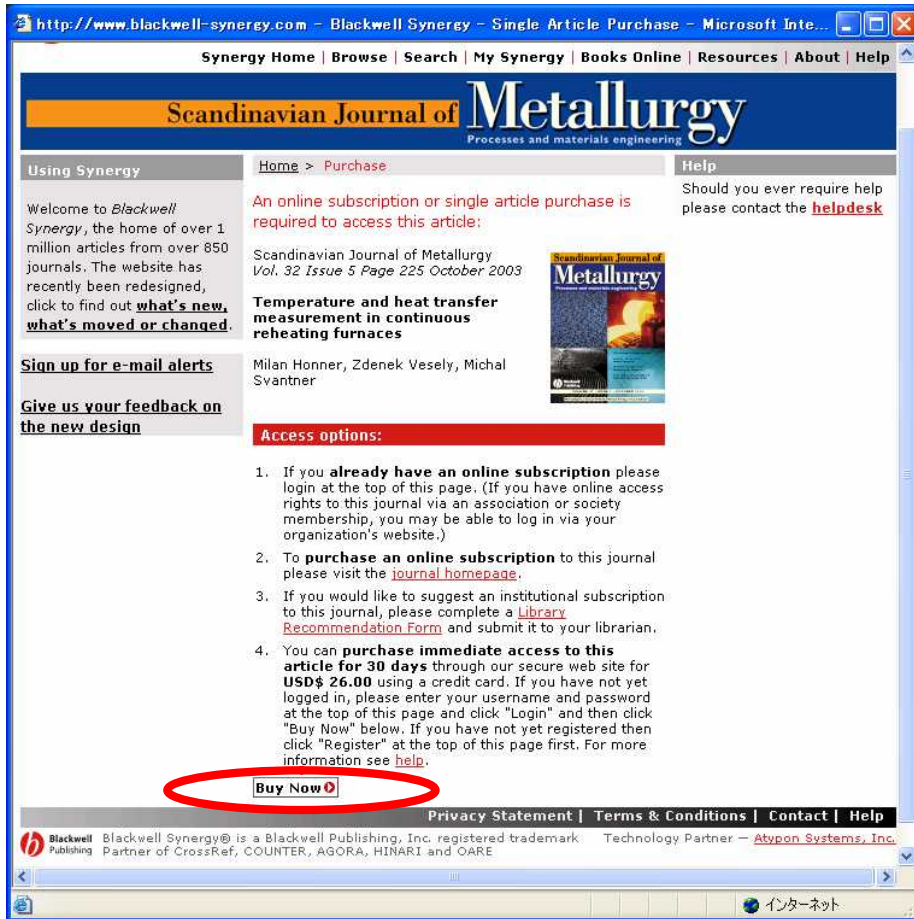


2) Set an alert according to your needs



3.2.3 Purchase

1) If the article is in a journal/volume to which we are not subscribed, you can purchase it(directly).



2) Registration is required the first time this is done.

