Go to: goo.gl/V4TU3x

Literature Search
Engineering, Science & Technology

Learning Services
NUS Libraries

19 October 2017
10am – 12noon
1- What

What are you looking for?
OR
What is the purpose of searching?
OR
What do you want to achieve from this session?
Why search? Is there a need?
Search: The benefits

- To find out what are we looking for
- To avoid duplicating research
- To identify the gaps
- To use in research planning
- To monitor the research activities of peers/domain experts etc.
- To identify and analyze technology trends
- To scope your research
When to search?

3- When
3- When

Search: When you need information

• Scenario 1:
I am planning to go for PhD. and I have to submit application. Do I need to do a literature search on my topic?

• Scenario 2:
I am doing research/ literature review/ writing paper etc. Do I need to do a literature search?
Search: When you need information

• Scenario 3:
I’ve a very good idea to design a product and I am going to work on it. Do I need to do a literature search?

“We need information all the time...... and we dream to have it immediately”
Where to search?
Different databases have different content! Make sure you choose the appropriate one!

For more information, please refer to
http://libguides.nus.edu.sg/
Information Sources

4- Where

“Not-so-familiar”
- Patents
- Standards
- Dissertations
- Theses
How to search?
5- How Frameworks

http://pestleanalysis.com/what-is-pestle-analysis/

https://www.ideou.com/pages/design-thinking

Useful links:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4310146/

5- How to Search

1. Search by Topic
   - Topic Search
   - Information Search Process

2. Trace References
   - Backward Search
     • References (Reference List)
     • Author (Prior Works)
   - Forward Search
     • Citing Articles (Cited By)
     • Author (Subsequent Works)
An electric vehicle (EV) may be powered by electricity from batteries. I am interested to find the efficiency of wireless chargers in electric vehicles.
Internet Sources

Information Search Process

1. Identify Keywords
   - efficiency
   - wireless chargers
   - electric vehicles

2. Select Sources
   - Internet Sources
   - FindMore@NUSL
   - Academic Databases

3. Construct Search Statement
   - Narrow/broaden
   - Advanced Search Techniques

4. Satisfied with Results?
   - Yes: Access Full Text
   - No: Change one or more

Set Alerts
1- Identify Keywords/Concepts

<table>
<thead>
<tr>
<th>Synonym/Keyword</th>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>efficiency</td>
<td>wireless chargers</td>
<td>electric vehicles</td>
<td></td>
</tr>
</tbody>
</table>

Venn Diagram:
- Efficiency
- Wireless chargers
- Electric vehicles
### Basic Search

<table>
<thead>
<tr>
<th>Operators</th>
<th>Used for</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND</td>
<td>To combine different keywords/concepts</td>
</tr>
<tr>
<td>OR</td>
<td>To combine synonyms/alternative terms or similar keywords</td>
</tr>
<tr>
<td>&quot;&quot;</td>
<td>Quotes for Phrases (more than one word)</td>
</tr>
<tr>
<td>*</td>
<td>Truncation to retrieve word variants.</td>
</tr>
</tbody>
</table>

- How to apply the above operators and construct a search statement and improve search statements
2- Academic Sources

FindMore@NUSL

Scopus

WEB OF SCIENCE™

IEEE Xplore®

Engineering Village
3- Construct Search Statement

<table>
<thead>
<tr>
<th>Synonym/Keyword</th>
<th>Concept 1</th>
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<th>Concept 3</th>
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<tr>
<td>efficiency</td>
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<td>electric vehicles</td>
<td></td>
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</tbody>
</table>

**Search Statement 1:**
efficiency **AND** “wireless chargers” **AND** “electric vehicles”
Search attempt #1

efficiency AND "wireless chargers" AND "electric vehicles"
### Alternative terms or synonyms for each concept

<table>
<thead>
<tr>
<th>Synonym/Keyword</th>
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<th>Concept 2</th>
<th>Concept 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>efficiency</td>
<td>wireless chargers</td>
<td>electric vehicles</td>
</tr>
<tr>
<td>Synonym/Keyword</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>efficiency</td>
<td>wireless chargers</td>
<td>electric vehicle</td>
</tr>
<tr>
<td>Synonym/Keyword</td>
<td>efficient</td>
<td>wireless charger</td>
<td>electric vehicles</td>
</tr>
<tr>
<td>Synonym/Keyword</td>
<td>performance</td>
<td>wireless charging</td>
<td></td>
</tr>
<tr>
<td>Synonym/Keyword</td>
<td>wireless battery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synonym/Keyword</td>
<td>wireless batteries</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Search attempt #2 (Scopus)

(efficiency OR efficient OR performance)
AND
(“wireless chargers” OR “wireless charger” OR “wireless charging” OR “wireless battery” OR “wireless batteries”)
AND
(“electric vehicles” OR “electric vehicle”)

Search attempt #3 (Scopus)

(efficien* OR performance)
AND
(“wireless charg*” OR “wireless batter*”)  
AND
“electric vehicle*”
Final Search attempt *(Scopus)*:

\[(\text{efficien}* \text{ OR performance}) \quad \text{AND} \quad (\text{wireless W/5 (charg}* \text{ OR batter*})) \quad \text{AND} \quad (\text{“electric vehicle*“})\]

\text{W/5 will retrieve articles:}

wireless power charger

charging an electric vehicle wirelessly
Phrase Search
“wireless charging”

Proximity Operator
wireless W/5 charging

AND Operator
wireless AND charging

Scopus Search Results retrieved on 19 Oct 2017
4- Set Alerts (Scopus)
Tips Engineering Village

• Turn off the auto stemming feature to control where to truncate.
• Proximity search using NEAR/5 (instead of W/5)
• Do not use truncation within quotes (“electric car*”)
• NEAR cannot be used with truncation or quotes (electric NEAR/5 car*).

Discover

Locate

1. **Search by Topic**
   - Keyword Search
   - Information Search Process

2. **Trace References**
   - Backward Search
     - References (Reference List)
     - Author (Prior Works)
   - Forward Search
     - Citing Articles (Cited By)
     - Author (Subsequent Works)
Locate – Trace References

You are required to look for this paper to read:

“High mobility, printable, and solution-processed graphene electronics”
# Locate–Trace References

## Scopus

### Search

<table>
<thead>
<tr>
<th>Year</th>
<th>Author Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 2010</td>
<td>☐ Ang, P.K.</td>
</tr>
<tr>
<td></td>
<td>☐ Loh, K.P.</td>
</tr>
<tr>
<td></td>
<td>☐ Tang, A.L.</td>
</tr>
<tr>
<td></td>
<td>☐ Thong, J.T.L.</td>
</tr>
<tr>
<td></td>
<td>☐ Wang, S.</td>
</tr>
</tbody>
</table>

### Alerts

- High mobility, printable, and solution-processed graphene electronics

### Lists

  - 2010 Nano Letters
  - 243
Trace References – Forward and backward search

High mobility, printable, and solution-processed graphene electronics

Reference List
25 references

Citing Articles (Cited By)
288 documents
Search by Topic - Theses

Search ScholarBank@NUS

Advanced Search

Browse by
Communities & Collections
Author
Title
Issue Date
Department
Document Type

My Account
Login
Upload Files
Submit/View Works
View My Files

Search

Search Scope: Electronic Theses & Dissertations
Full Text Search: electric vehicles

Results/page 10 ▼ Sort items by relevance ▼ in order descending ▼

Your query "electric vehicles" produced 5125 result(s).

Search Results for Community: Electronic Theses & Dissertations

Now showing items 1-10 of 5125

<table>
<thead>
<tr>
<th>Issue Date</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Thermal management of electric vehicle battery packs</td>
<td>BERNARD SAW LIP HUAT</td>
</tr>
<tr>
<td>2016</td>
<td>MULTI-AGENT SYSTEM APPROACH FOR SERVICE RESTORATION IN DISTRIBUTION SYSTEMS</td>
<td>ANURAG SHARMA</td>
</tr>
</tbody>
</table>
Search by Topic – Theses (Foreign)

ProQuest Dissertations & Theses Global

Basic Search  Advanced Search  Browse  About

"electric vehicles"

Full text  Doctral dissertations only

Modify search  Recent searches  Save search/alert

Related searches  electric vehicles  vehicles

4,524 results

Search within

Select 1-20  0 Selected items

Sort  Relevance

Narrow results

Full text

Publication date  1018 - 2017 (decades)

1

Reinforcement learning in hybrid electric vehicles (HEVs) / electric vehicles (EVs)
...vehicles in use around the world. Electric vehicles (EVs) and hybrid electric
References (112)

Abstract/Details  Preview - PDF (656 KB)  Full text - PDF (3 MB)

2

Spatial-temporal stochasticity of electric vehicles in integrated traffic and power system

To find out more, refer to: http://libguides.nus.edu.sg/findthesis
EVALUATE

AUTHORITATIVE?
TIMELY?
RELEVANT?

THESSES
SCHOLARLY JOURNALS
BOOKS
PATENTS
...ETC.
To find out more, refer to:
http://libguides.nus.edu.sg/citation
Citation Managers

To find out more, refer to:
http://libguides.nus.edu.sg/citationmanagers
For Queries:
Contact: iftikhar.hayat@nus.edu.sg

Thank You 😊

Iftikhar Hayat
Learning Services, NUS Libraries