

## KEY POINTS IN PATENT SEARCH FOR GRANTS APPLICATION

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According to the World Intellectual Property Organization (WIPO), a patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem<sup>1</sup>.

A patent is protection granted by a national government for an invention. This protection excludes others from making, using, or selling an invention for a period of up to 20 years. Many drug companies and university researchers seek patent protection to recover research and development costs for patents related to specific genes and proteins, laboratory techniques and drugs<sup>2</sup>.

### What is a patent search?

A patent search, or patentability search, is a search of existing patents and other publicly available documents (which is referred to as "prior art") to locate the closest existing things to your invention<sup>3</sup>. Prior art" pertains to any previous mention of the technology or device in the public domain. The information of prior art includes previous patents, journal articles, publications (including data books and catalogs), records of all technology areas and public discussions anywhere in the world<sup>4</sup>.

Patent documents are a rich source of technical, legal, and business information and an important resource for researchers and inventors, entrepreneurs, commercial enterprises, and patent professionals. It also provides information that has not been published in scientific journals or conference proceedings<sup>5</sup>.

### The importance of patent searching in academic research

A patent search is often the first thing that is done in the patent process. The most common reasons to conduct a comprehensive prior art patent search is to determine how different an invention is from what already exists in the prior art and to make sure no other similar invention already exists. If an inventor believes their invention is new, they must first conduct a prior art search before they apply for a patent. Patent search can also reveal that the inventor's invention has already been made – even if the invention has never been commercially available for purchase<sup>6</sup>.

The patent search benefits the researchers/ inventors by:

1. Assist in applying for a patent on your research. Speed up patent prosecution.
2. Avoid duplication of Research and Development (R&D) work.
3. Assist in allocating R&D funds.
4. Avoid wasting money and time.
5. Discovering new research ideas and solving problems. Improve an existing product or process and identifying alternative technology.
6. Identify existing or prospective industrial property rights particularly to avoid infringement actions.
7. Monitor competitor's research activities both within the country and abroad.
8. Predicting hot areas of research that can impact on current products and those that are in the development stage.
9. Identify a market niche or to discover new trends in technology or product development at an early stage.
10. Use inventions for free: Patents expire after 20 years, which means anyone can use the invention.

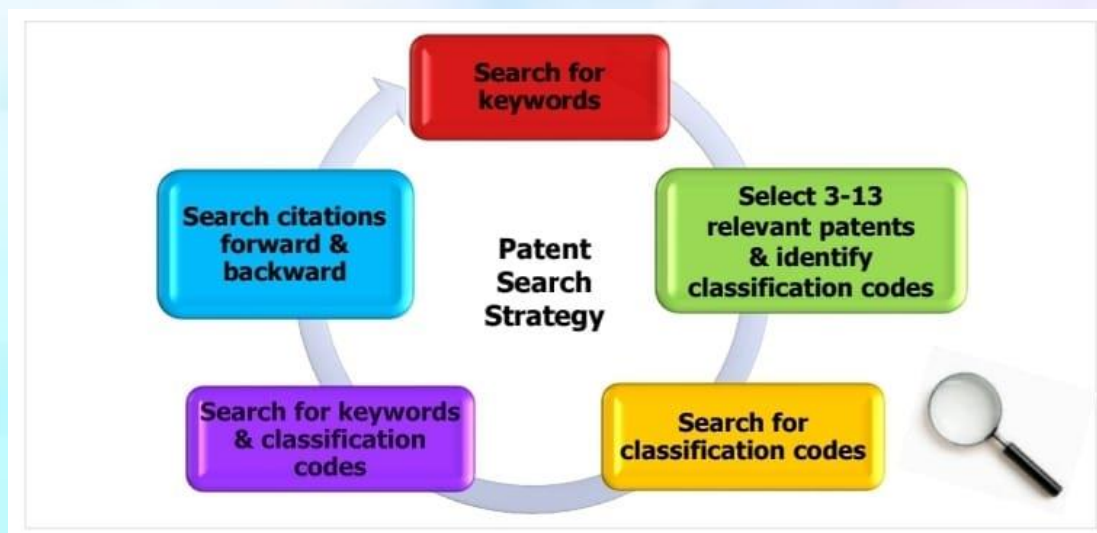
## Different stages for carrying out patent information search by researchers

<b>Pre-implementation of R&amp;D project</b>	<ul style="list-style-type: none"> <li>•Patent search helps to avoid duplication of research that has been already done. It helps in gaining new ideas for research in a particular field and assessing the depth and extent of the state-of-art; it helps to list shortcomings/ drawbacks in the state-of-art.</li> </ul>
<b>During implementation of R&amp;D project</b>	<ul style="list-style-type: none"> <li>•Patent search helps in finding a possible solution to the technical problem, refining the idea and stimulates further inventive thinking. It helps to establish the novelty of the idea.</li> </ul>
<b>Post-implementation of R&amp;D project</b>	<ul style="list-style-type: none"> <li>•Patent search helps in drafting the patent document. Patent claims are the legal basis for patent protection. But a claim can never both be broad and narrow at the same time. Patent search helps in either broadening or narrowing down claims.</li> </ul>

## How to do a patent search?

The easiest way to retrieve patent related information is to use online databases. There are various patent databases available for information retrieval on the web. Searching tutorials are also available in most free online patent databases. Searching of patent documents is a step-by-step process; initially the search should be done in broad and related area followed by fine and more focused searches<sup>5</sup>.

For an effective prior art search in various patent databases, researchers should have a basic idea about the terms and techniques related to the invention. The several search criteria to retrieve patent information are keywords or phrases, patent classification systems (i.e., International Patent Classification (IPC), Cooperative Patent Classification (CPC) etc.), date of filing/ grant/ publication etc., patent reference or identification numbers (application number, patent number, PCT number) and names of applicants/ assignees or inventors and invention title<sup>5</sup>.



*Five step patent search strategy, adapted from Dominic DeMarco, 2010: Mechanical Patent Searching: A Moving Target<sup>7</sup>*


## Simplified Patent Search Report (MYGRANTS)

The Simplified Patent Search Report is a one page simplified and stripped-down version of a patent search. The report is designed to create intellectual property awareness to the Ministry of Higher Education Malaysia (MOHE) grant applicants. The report is compulsory for Prototype Research Grant Scheme (PRGS) grant applications. For Fundamental Research Grant Scheme (FRGS), applicants are encouraged to submit the report for grant application. This report can be accessed by logging into the Malaysia Greater Research Network System (MYGRANTS) system.

The patent search will be carried out using Lens.org (<http://lens.org/>). The Lens serves linked open knowledge artefacts and metadata with tools to inform effective, efficient, and equitable problem solving.

Using the report and Lens, applicants would be able to:

1. Familiarise with the basic patent search process.
2. View basic information associated with their research.
3. Identify the novelty position of their research application with regards to the intellectual property landscape.
4. Identify other actors (potential collaborators/ stakeholders/ competitors) in the sectors associated with their research areas.
5. Identify potential trends in intellectual property interest.
6. See historical patent trends associated with their research.
7. Identify if neighbouring countries (Singapore, Indonesia, Thailand) have developed similar ideas.
8. Avoid submitting research proposals that lack novelty and potential economic and societal impact.

The information on how to conduct a patent search using the Simplified Patent Search Report (MYGRANTS) and Lens.org is available at:  YouTube

### 1. Briefing on Patent Search by Prof. Dr. Goh Yong Meng, Deputy Director, Research Management Centre (RMC), UPM.

<https://www.youtube.com/watch?v=kRwGzR25zxk>

### 2. Workshop on Patent Search using Lens.org by RMC, IIUM.

[https://hpupm.upm.edu.my/research\\_hpupm/research\\_grants/workshop\\_on\\_patent\\_search\\_using\\_lensorg-65568](https://hpupm.upm.edu.my/research_hpupm/research_grants/workshop_on_patent_search_using_lensorg-65568)

<https://www.youtube.com/watch?v=-KeAB3sEENY>


#### References:

1. <https://www.wipo.int/patents/en/>.
2. <https://guides.library.utoronto.ca/patents>.
3. <https://www.oppenhuizen.com/what-is-a-patent-search/>.
4. Sathish K (2013). Patent Information Search Strategies for Information Professional –Case Study.Conference Paper. <https://www.researchgate.net/publication/261143572>.
5. Vikram S, Kajal C and Lavina V (2016). Patent Database: Their Importance in Prior Art Documentation and Patent Search. Journal of Intellectual Property Rights.21,42-56.
6. <https://guides.library.harvard.edu/patents/why>.
7. [https://lo.library.wisc.edu/patents/lesson\\_4.html](https://lo.library.wisc.edu/patents/lesson_4.html)
8. <https://ipo.org/wp-content/uploads/2019/11/2019-10-IPO-Patent-Searching-The-Lens.pdf>.
9. [https://rmc.upm.edu.my/upload/dokumen/20220216085658Simplified\\_Patent\\_Search\\_Report\\_\(MyGRANTS\)\\_2022.docx](https://rmc.upm.edu.my/upload/dokumen/20220216085658Simplified_Patent_Search_Report_(MyGRANTS)_2022.docx).

## Appendix

### Simplified Patent Search Report Version 1/2022 (MYGRANTS)

**Lens.org**  
<http://lens.org/>


**JPT** | JABATAN  
PENDIDIKAN  
TINGGI

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**SIMPLIFIED PATENT SEARCH REPORT**  
 [using Lens.org (<http://lens.org/>)]  
 Version 1/2022

Keyword s Used	(Type in the keywords used in your search)	The Number of Patents Found using Keywords Used	(copy and paste the number)
		Link to the Search Result on Lens.org	(paste the link of your search result copied from the Share box)

Answer these questions using 'YES' or 'NO'			
NO.	QUESTIONS	(YES / NO)	REMARKS (IF ANY)
<b>COMPULSORY SECTION</b>			
1.	Has the number of patents published shown an <b>UPWARD</b> trend?  If <b>YES</b> , it highlights an increasing interest to protect ideas associated with the keywords used. Increasing interest may indicate developing or sunrise sector showing future potential with substantial growth.		
2.	Has the number of patent published shown a <b>DOWNWARD</b> trend?  If <b>YES</b> , it highlights a decreasing interest in sectors associated with keywords used. It may indicate a declining or sunset sector showing diminishing interest to protect ideas or absence of innovation.		
<b>SOCIAL SCIENCES SECTION</b> Please answer Questions 3 and 4. If the research proposal is categorised under the Research Domain of Social Sciences (SS); or Arts and Applied Arts (SSt); or Natural and Cultural Heritage (WAB)			
3.	Does the proposed research output (dataset, knowledge, information) have the <b>POTENTIAL TO BE USED</b> by any of the past patent applicants in the search results?		
4.	Does the proposed research output (dataset, knowledge, information) have the <b>POTENTIAL TO BE USED</b> by any Malaysian Government Ministry/Agency?  If <b>YES</b> , please state the name of the Ministry/Agency. If <b>NONE</b> , the research output may not be of use to the national agenda.		

Answer these questions using 'YES' or 'NO'			
NO.	QUESTIONS	(YES / NO)	REMARKS (IF ANY)
<b>SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) SECTION</b> Please answer Questions 5, 6, 7 and 8. If the research proposal is categorised under the Research Domain of Technology and Engineering (TK); or Clinical and Health Sciences (SKK); or Pure and Applied Sciences (STG); or Information and Communication Technology (ICT)			
5.	Does the list of previous patent applicants include potential <b>COLLABORATOR(S)</b> * that are interested in the research output?  If <b>YES</b> , it shows that the research output is potentially aligned with the requirements of existing collaborator(s) that have entered the sector earlier.		
6.	Does the list of previous patent applicants include potential <b>COMPETITOR(S)</b> ** when applying the research output?  If <b>YES</b> , please state the name of the <b>COMPETITOR(S)</b> .		
7.	Does the patent search yield similar patents that would prevent the commercialisation of the research?		
8.	Does the patent search yield similar patents already filed in Thailand, Indonesia and Singapore?		

\*Collaborators are past patent applicants listed in the patent search result who have the potential to collaborate with the grant applicants during or after the research project has been completed.

\*\*Competitors are past patent applicants listed in the patent search result that would compete against the grant applicants and prevent the research output from being utilised or commercialised after the research project has been completed.



**Lens.org**  
Solving The Problem of Problem Solving

**The Lens** <https://www.lens.org/lens/>



**Landing page**

- Search options: patents, scholarly works, PatSeq, PatCite, QJ/TiM4
- Information options: Request Demo, Feature Tour, About
- User interface languages
- Login for all features
- Quick search options for Non-patent literature
- Quick search options for Patents: the following search terms were entered into the patent search box on the left: portable solar usb charger. Structured searches are also possible, such as:
  - portable AND solar AND usb AND charger
  - portable AND solar AND (usb OR "universal serial bus") AND charger

**Note:** operators AND, OR and NOT must be in all caps.

**Search results list and analysis**

- Number of results and number of families
- Sidebar with rapid access to filters, collections, notes tags, saved queries; filters provide numerous options to refine the search; use down arrows to view options and you can include or exclude a filter
- Click on the check box for a record or at the top to select All Results or Page Results, this opens the option to create a collection of documents of interest for later review
- Expanded view: click down arrow at the top for all or next to "Published" for a record
- Refine the search by changing search terms and click on "Refine search". The question mark gives search tips
- The down arrow next to "Refine Search" provides rapid access to a New Search or the Classification Viewer
- Edit Search opens the Structured Search and the Query Text Editor
- Options: Save Query, Share Results, Export

**Results. Cited by Works** shows only patents citing NPL and Group Families (When grouping is ON, one member of a simple family is seen)

- Sort options: rank, publication, filing, priority, cited, sequences or family
- Click on title or document number for details
- Analysis Preview column and Hide Preview link
- Full analysis tab
- Tab to see cited works / NPL. In the right-hand column of cited works you will find links to article sources. Open source copies of documents may be found with certain links. Others use Open URL links to the WorldCat registry for access to a full text version, either by payment or through your institution/corporation.