

Basics of Patenting for Scientists

M. N. Kaumal

Department of Chemistry, University of Colombo

Scientific findings are published in multiple platforms such as journal articles, abstracts and theses. Intellectual assets of those findings have become freely accessible and used by other parties in order to gain commercial advantages. This can demotivate scientists, innovators and investors to create knowledge with commercial value and to invest in product development. The patent system is the legal mechanism to protect the right of obtaining commercial advantages from intellectual assets or properties. These intellectual properties (IP) can be divided into multiple categories, based on the properties of the IP as follows:

Category 1.

Literary; artworks, scientific publications and novels are a few examples for this category. These creations can be protected under the law related to copyright. In most countries, the software can also be protected under copyright law.

Category 2.

A television program or recorded musical program that is based on Copyrighted materials such as songs and music can be protected under the law concerning Copyright Related Rights.

Category 3.

Any scientific invention of a tangible product which can be protected using law related to Patent.

Category 4.

A shape of a product package or a design of a product which can be protected using the law related to the Industrial Designs or the law related to Copyright.

Category 5.

Trademarks, commercial names and marks can be protected using law related to Trademark.

Obtaining a patent for an IP created in a University research is not common in Sri Lanka. The outcome of a research project may not be patentable always, however, when required, it is essential to protect the created IP to obtain benefits. It is common practice to retain the ownership of the invention by the institute in all leading Universities around the world. However, the research team will be listed as inventors in the Patent document and economic benefits will be shared among the inventors and the University.

Reverse engineering or copying an invention must

be legally stopped to obtain economic benefits from inventions. This legal protection can be acquired by obtaining a Patent for the invention. Most Universities have many patents under them, and they provide licenses to outside parties for commercial use of IP by paying a fee. This fee can be a one-time payment or a royalty payment, based on the earnings. Patent-based legal protection is territorial, and multiple patents must be obtained to protect an invention in several countries or territories. For example, for an invention, a patent obtained in the USA is only protecting the rights of the inventor within the USA. Anyone in Sri Lanka can copy the invention and reproduce it, however, someone in the USA cannot copy and reproduce it. Even though it can be reproduced in Sri Lanka, it cannot be exported to the USA but can be exported to India or any other country. To have protection in India, the inventor must obtain a patent from India.

The owner of the patent has few main rights. They are;

1. Only the owner of the patent or a party/parties authorized by the patent owner can produce/sell the product protected by the patent
2. Only the owner of the patent or a party/parties authorized by the patent owner can export or import the product to a territory protected by the patent.
3. Owner of the patent or a party/parties authorized by the patent owner can take legal action against unauthorized use (infringement) of the patent

However, these rights are only limited for 20 years. After this period, it will become open to anyone to use with no legal restrictions. When an application is lodged, a qualified application can obtain a patent. However, after the initial period, the owner must pay an annual fee to maintain the patent. In most countries, obtaining and maintaining patents are expensive processes.

Obtaining a Patent

Even though many scientists perform a literature search before starting a research in scientific journals they only contain limited details related to current knowledge. Most of the current knowledge related to inventions are published as patents and can only be found

in Patent documents. Also, some countries such as Japan, China and Korea publish patent documents using the native language, making it possible to miss some recent scientific findings. Hence, it is essential to perform a proper literature search and a Prior art search before starting a research project to avoid repetition.

Identification of patentable work is essential to obtain a Patent. The scientific finding must be tangible and novel. It must not have been reported in any form by the inventor or any other. Hence, it is advisable to submit the patent application before submitting an abstract or a journal manuscript. Some countries provide a grace period to obtain the patent even after publishing, but this can be complicated and have many disadvantages. The second criterion to obtain a patent is that an invention must not be an obvious fact to a person with enough knowledge in the relevant field. For example, when a compound with acidic properties is mixed with an oxidizing compound, the mixture has both these properties, and a person with a considerable chemistry knowledge shall know the properties of the resultant mixture. However, if the mixture exhibits a new property, that is not obvious, that finding can be patented as an invention. This criterion is also known as the inventive step of innovation. The third and last condition that must be satisfied by an invention to be patented is that the innovation must have an industrial usage. Any invention that fulfils these conditions is eligible to obtain a patent.

Drafting a patent application requires a special set of skills. The first step is to perform a patentability search to confirm that the invention is eligible to be patented. The next step is to draft the patent application, which must be done targeting the territory/country in which the patent application is filed. If the patent is granted, a validity period of 20 years is counted usually from the day it was filed, and that day is referred to as the priority date. However, the evaluation of the application is a long process, the date on which the Patent Office will publish the patent can be a few years after applying and is known as the publication date.

After filing the first application, the inventor has a period of one year to submit another application to obtain a patent for a different territory/country. However, an inventor who wishes to protect multiple territories can use the PCT (Patent Cooperation Treaty)-based application path. In this path, the application can be

submitted to a national office or to the WIPO (World Intellectual Property Office) to obtain an international search report. The main advantage is that the inventor has 30 months to apply to any territory/country. Also, an international search report can reduce the cost and time to review any application submitted to a territory/country.

How to use a Patent?

Submission of an application for a patent must have a proper commercial plan to obtain benefits. Before applying or obtaining the patent, it is difficult to expose all the information to a commercial partner. Hence, entering the patenting process always provides better chances of finding the most suitable commercial partner. A patent never gives the right for the owner to produce and sell the invention, it only stops others from using the invention without the consent of the inventor. It is essential to find out when the product described by the patent is produced whether that can infringe any other patent. This investigation before the use of a patent is known as the freedom to operate search.

Important Links

Free Patent database to perform a Prior art search

- (a) Google Patent (maintained by Google): <https://patents.google.com>
- (b) PATENTSCOPE (maintained by WIPO): <https://patentscope.wipo.int>
- (c) Espacent (maintained by European Patent office): <https://worldwide.espacenet.com>

Patent office

- (a) NIPO (National Intellectual Property Office): <https://www.nipo.gov.lk>
- (b) USPTO (United States Patent and Trademark Office): <https://www.uspto.gov>
- (c) WIPO (World Intellectual Property Office): <https://www.wipo.int>

Dr M N Kaumal obtained the BSc from the University of Colombo, Sri Lanka. He obtained his PhD, from the Mississippi State University, Mississippi, USA. He is a Senior Lecturer at the Department of Chemistry, University of Colombo, Sri Lanka. He is also the Coordinator of Analytical Services at the Department of Chemistry, University of Colombo, Project Coordinator of AHEAD Innovation Commercialization Enhancement grant and the CEO of Colombo Science and Technology Cell.