Patents

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Patents are legally enforceable rights that are granted by a national government's intellectual property authority. This is IP Australia within Australia. Patents are granted to inventors for new and useful inventions. Patents cannot be obtained for artistic creations, discoveries, mathematical models, plans, schemes, or purely mental processes.

Patent rights are not automatic. You must apply to the intellectual property office in each separate jurisdiction where you seek patent protection. In this regard, patent rights are limited to the jurisdiction in which they are granted. There is no such thing as a single worldwide patent. The maximum period of patent protection in most countries is 20 years from the date on which the patent application is filed.

After a patent has expired, any person can use the invention and can benefit from the disclosures made in the patent application. Furthermore, anyone can access the disclosed information, and produce and market the invention in any country where a patent has not been granted.

Criteria for Patent Protection

To obtain a patent, an invention must satisfy several criteria, the precise definitions of which vary from country to country. However, in general an invention must demonstrate:

- Patentable subject matter (countries generally make patents available for inventions in all fields of technology, there are however some categories of inventions that are excluded in certain countries);
- Novelty (the invention has not been publicly disclosed prior to the date of the patent application);
- Inventive step (not obvious to a skilled person in the field); and
- Utility (usefulness or industrial applicability).

Why is it relevant?

Patents are relevant to research because they can shape and direct how discoveries move from the laboratory to real world applications. Securing patent protection can enable research institutions to collaborate with industry, attract investment and obtain support for the development of new technologies. Patent law can also affect when and how research findings are shared, since public disclosure may later prevent an invention from being patented. Understanding the basics of patents can help researchers and institutions make informed decisions about publication, collaboration and the potential translation of their work into practical, beneficial applications.

Practical Steps

Ideally, if there is a desire to patent the outcome of research, legal advice should be obtained as early in the process as possible (generally this will be through the institution's commercialisation office). However, the below list also has some practical steps for researchers in their own work.

1. *Recognise potential inventions early.* If your research produces a new product, method or technology with practical application, consider whether it may be patentable early and if legal advice can be sought.
2. *Avoid public disclosure before seeking advice.* Publishing, presenting at conferences, or sharing results online may affect the ability to obtain a patent down the track.
3. *Discuss collaboration and ownership early.* If your work involves collaborators from the same or other institutions, or industry partners, clarify how intellectual property, inventorship and potential patent ownership will be managed. Legal advice should be sought before any of these decisions are finalised.
4. *Contact your institution's commercialisation office.* The office can assess whether an invention may be patentable, help with all the steps described here and additionally will manage the patent filing and publication strategies.

Case Study

PsiQuantum, a quantum computing company developing large-scale photonic quantum computers, has a patent portfolio covering photonic quantum methods, neutral atom quantum computing, trapped ion quantum systems, and quantum-classical hybrid

architectures. These patents protect key components of quantum computing infrastructure and position the company as a significant intellectual property holder in the emerging quantum industry. As the sector grows, this portfolio may enable PsiQuantum to establish lucrative licensing agreements with other quantum technology companies seeking to use or build on these foundational technologies. [1]

References

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