

# Publishing and patenting

## Guidance document for researchers



# Introduction

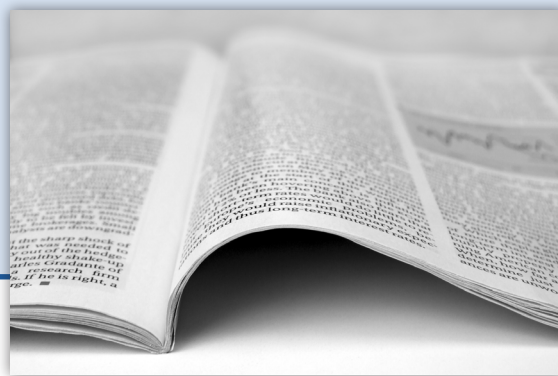
Researchers from universities or public research organisations who want to maximize the value of their inventions or research results can protect their inventions, commonly via patents, and can also publish their research results in a scientific journal. There are different ways of protecting an invention (*e.g.* through non-disclosure obligations), but this guidance document will concentrate on publishing and patents.

In academia, priority is often given to publishing results over protecting them. Also, careers in academic and technical fields are frequently measured by the amount of publications in scientific “A” journals rather than how many inventions have been patented. Conversely, patenting has traditionally been the way for industrial players to protect their inventions. However, it is important to note that publishing and patenting are not alternatives, and it is possible to do both.

Patenting has become increasingly widespread in academic contexts. Academic profiles often include a note of the number of inventions patented by the academic. Shifting performance metrics for academic researchers, changing perceptions in favour of adding economic value to the community through the commercialisation of academic research and the possible upside of generating patent royalties have all added to this more favourable attitude towards patenting. Similarly, industrial players are increasingly publishing research results, *e.g.* to attract investors or researchers, enhance reputation or prevent an invention from being patented by a competitor. As further described below, even though patenting and publishing remain different tools for different purposes, they are increasingly combined in order to simultaneously gain the advantages of both strategies.

This document focuses on the differences between patenting and publishing strategies from a legal point of view, in order to provide researchers with guidance on the different ways to disseminate and protect scientific knowledge. As noted above, it is important to note that it is not a choice between publishing and patenting, but one needs to ensure that one does not jeopardize the other. This can be achieved if the timing of publishing is correctly done.

# Publishing in a scientific journal



- Introduction** Publishing an article in a scientific journal is the traditional way to disseminate scientific knowledge. The publication usually involves a peer review process to ensure quality, which may delay the actual publication for several months. As publishers do not usually pay researchers to publish scientific articles, the main motivations for publishing an article include a desire to disseminate knowledge, ranking in university surveys, meeting appraisal criteria, career advancement and ensuring compliance with minimum university publishing requirements and securing peer reviews of one's work.
- Copyright** When a researcher writes a scientific article, the scientific article will be generally protected by copyright, which consists of several different rights, such as the right to reproduce, distribute, translate and modify the article, the right to decide whether and when the article is published, the right to claim authorship and the right to integrity of the article.
- Copyright is granted automatically** Copyright protection is granted **automatically**. Unlike the various requirements for the formal patenting process (explained below), the scientific article need not be deposited or registered to gain protection, the benefit of copyright stems from the creation of the work, not its registration with any public body — although registration is possible in some countries. However, copyright protection only extends to the article itself (i.e. the **expression** of words and/or images) and not to the ideas underlying the scientific article or any invention described in it. The protection offered by copyright does not prevent a third party from reusing the invention or ideas described in the scientific article, because copyright only protects expressions. If a researcher wishes to protect an invention, he should apply for a patent or, alternatively, as a strategic decision, keep the invention secret (see “*Other Options*” below).
- Publishing contract** When a researcher wants to publish his scientific article, he will typically contact a publisher and may enter into a publishing contract. Through this contract, the

publisher receives the right to publish the work in certain forms (*e.g.*, electronically and/or in print), for a limited or an unlimited period, with remuneration or royalty payments for the author, depending on what is agreed in the contract. The rights of a researcher after signing a publication contract are explained below.

#### Take into account your employment contract

Before signing a publishing contract, the researcher must satisfy himself that he is the actual owner of the copyright. For example, in some employment contracts the copyright ownership belongs to the employer. In such cases, the contract with the publisher is usually signed by the employer. In the text below, we have assumed that the author/researcher is the actual owner of the scientific article being published. It may be that under university rules, he must inform his Technology Transfer Office (TTO) before publication and so he should check what institutional formalities with which he needs to comply.

#### Assignment or licence?

Depending on the applicable national law, the author can either transfer (assign) his economic rights, or grant a right of use (licence) to the publisher.

- Upon **assignment** (transfer) of the copyright, the author loses most of the rights associated with copyright. In most EU Member States, an author will, however, always retain the moral right to claim authorship and the right to integrity of the article unless these moral rights are assigned or waived in accordance with local laws.
- In the case of a **licence**, the author retains his copyright – he only grants a specific right of use to the publisher – so that he can still provide licences to an unlimited number of other parties. Even so, since the licence can be varied by a contract, an author can agree to provide an exclusive licence to the publisher, which may remove the author's right to grant licences to other parties. An exclusive licence can therefore approximate the practical effects of an assignment.

#### Examples of publishing licenses

Generally, scientific publishers require authors to either assign the copyright to the publisher, or grant it an exclusive licence.

Examples of wording that implies an **assignment**:

- *"The Author transfers, assigns or otherwise conveys all copyright ownership to the Publisher in the event the work is published. Such conveyance covers any product (print or electronic) that may derive from the published journal."*
- *"The Author assigns to Publisher the copyright to the Contribution, whereby the Publisher shall have the exclusive right to publish the Contribution, and translations of it, in all languages and all media throughout the world during the full term of copyright and all renewals and extensions thereof. These rights include*

*without limitation mechanical, electronic and visual reproduction; electronic storage and retrieval; and all other forms of publication."*

Examples of wording that implies a **licence**:

- *"The Author hereby grants to the Publisher a non-exclusive licence to publish the Work in all media throughout the world."*
- *"The Author hereby grants to the Publisher an exclusive licence to publish the Work in [specific publication]."*

### Rights after signing a publishing contract

Researchers often wonder what they are (or are not) allowed to do with their article after concluding a publishing contract. For example, is it possible to publish the same article in another scientific journal, on the university's public website, or on a private homepage? Is it possible to slightly adapt the article and reuse it for another publication? Is the publisher required to obtain the researcher's prior permission to reprint the article in a (paid) online journal?

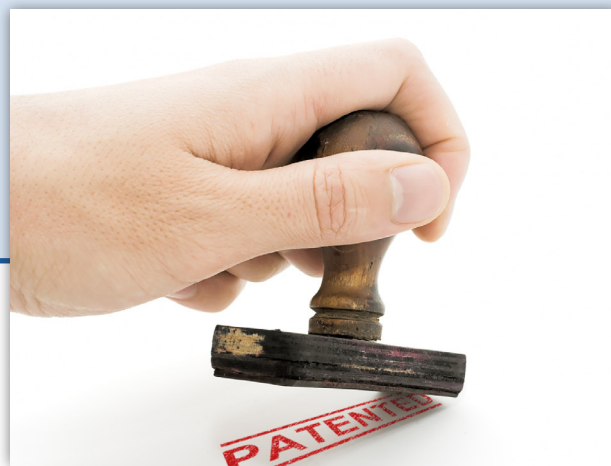
The answer to these questions depends on the precise content of the publishing contract. For example, the usage rights granted to the publisher may be limited to one publication, or a specific geographical region. In most cases, however, the author has *assigned* the copyright to the publisher or has granted a worldwide *exclusive licence* to the publisher, resulting in an almost complete loss of the rights to his own article, so that the answer to all of the above questions is negative. Thus, if a researcher wants to publish his own article on his personal homepage, he will need to obtain the publisher's consent. However, as copyright only protects the *expression*, the researcher – and, in fact, any third party – is still allowed to use the ideas and any inventions described in the article.

### The "Open Access" model

In light of the extensive rights accorded to publishers, a new alternative publishing model has developed, often termed "Open Access", which either allows researchers to make their articles freely accessible online after publication in a regular subscription journal, or makes the scientific journal itself freely available on the internet. Some publishers allow Open Access "author pays" publishing, whereby publishers offer authors the choice of paying the article processing fee and having their article made freely available online.

The Open Access model is becoming increasingly popular, and is promoted by the European Commission<sup>1</sup> and national governments. Whereas the policies of some institutions still do not allow researchers to publish under the Open Access model, some public research funding bodies go as far as to impose its use<sup>2</sup>. Researchers are becoming increasingly aware of this model, although the "impact" (or quality of publication) factor still remains for many authors the decisive factor in choosing a scientific journal.

# Patenting inventions



A patent owner is granted exclusive rights on a patented invention for a limited period of time, typically a maximum of twenty years. In return for these exclusive rights, the inventor must describe, in his patent application, the details of his invention and which will usually be published after a period of 18 months. During the period of protection, the patent owner has the right to decide who may use his patented invention.

Patent applications are submitted for various reasons: to generate royalties through licensing; to attract investors; or to prevent competitors patenting or using the same invention.

## Formal procedure

Unlike copyright, patents must be formally granted using a dedicated administrative procedure before a patent office. The length of the procedure varies in each national patent office, and can, in some cases, last up to 36 months. During this procedure, the patent specification – drafted by a specialised patent lawyer – is made public, usually after 18 months after the initial filing date. Depending on the desired type of protection (national, European or international), different patent offices will have to be contacted.

## Patent requirements

An invention needs to simultaneously meet three requirements in order to be patentable<sup>3</sup>: it must be susceptible of *industrial application*, *new* and involve and *inventive step*. An invention is considered susceptible of industrial application if it can be made or used in any kind of industry, including agriculture. An invention is generally considered new if it does not form part of the state of the art. The state of the art comprises everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of



the patent application. An invention is considered to involve an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art. Even after being granted, patents may be invalidated in court when one of these requirements has not been met.

Some inventions cannot be patented in Europe, e.g. (a) discoveries, scientific theories, and mathematical methods; (b) aesthetic creations; (b) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; (d) presentations of information. The patentability of these subject-matters or activities is only excluded if and to the extent to which a European patent application or European patent relates to such subject-matter or activities as such. This is not to say that, for example, software inventions can never be patented in the EU and a researcher should always contact their TTO or patent attorney for advice.

#### **Beware of “novelty destruction”**

As an invention that is already known cannot be patented, researchers should first investigate whether a third party has already described the invention somewhere. Researchers can, however, inadvertently undermine the patentability of their invention. Even the slightest public announcement of an invention anywhere in the world – such as a presentation at a scientific meeting or publication in a scientific journal<sup>4</sup> – will destroy the possibility of filing a patent in most EU countries<sup>5</sup>. Researchers may therefore consider delaying the publication or any other disclosure of their invention for a short time until the patent application has been properly filed.

#### **Protected rights**

Patents protect the invention described in the patent application: without permission from the patent owner, a third party cannot use the patented invention.

#### **Geographic limitations**

It is possible to apply for national patents in individual European countries. Alternatively, an application at the European Patent Office can designate up to 34 States and may be extended to a further 4 States. The “European Patent” takes effect as a bundle of national patents in the designated States.

It is also possible to apply for national patents in countries outside Europe. Alternatively, an application under the Patent Cooperation Treaty (PCT) can designate up to 138 States as well as regional patent offices including the European Patent Office. Two and a half years from the priority date, the application will be processed nationally in individual countries and/or regional processing at the European Patent Office and other regional offices, where patents will either be granted or refused. Therefore, it is not an “international patent” as such, but a convenient method of filing patent applications internationally.

### **Cost of patent applications**

Unlike copyright, patent protection involves application fees, associated legal/administrative costs for the patent applicant owner and renewal fees. These fees depend on whether protection in one country or several countries is sought (in which case, the cost of translation into the language of the country in which protection is sought may be applicable). A search of national patents offices' websites will give an indication of the applicable official fees.

### **Using patents for research**

Researchers can consult patent specifications for free or for a small fee at patent offices<sup>6</sup>, Patent Centres<sup>7</sup>, through dedicated patent databases such as esp@cenet (*www.espacenet.com*) or through the TTO of their institutions. However, if one is not experienced in reviewing patent specifications, (or has insufficient time to do so), a professionally qualified patent attorney can be engaged to do so. Much information on inventions and patents is available in patent literature.



# Comparison: publishing and patenting

<b>Purpose</b>	While both scientific publishing and patenting result in a dissemination of scientific knowledge, they serve different purposes and have fundamental legal differences: publishing is primarily intended to share knowledge and obtain recognition from peers, while patenting is primarily intended to create exclusive rights for an invention which are enforceable against third parties and may generate revenue.
<b>Scope of protection</b>	Copyright only protects the expressed form of an article (language and style) and does not prevent anyone from reusing the ideas or any inventions described in it. Patents, however, grant an exclusive right over the use of the invention.
<b>Speed</b>	Copyright protection is granted automatically and publishing a scientific article can occur relatively fast (although some peer review processes may cause a delay). Patents involve a formal and relatively lengthy procedure of up to 36 months in Europe.
<b>Legal requirements</b>	Copyright protection only requires a minimal level of creativity (“originality”), which will almost always be the case for scientific articles. Patents are restricted to inventions which are new, novel and are capable of industrial application.
<b>Cost for the researcher</b>	Publishing does not involve any real costs for the researcher (unless in the case of some open access “author pays” publishing models, as noted above), while patents involve application fees and associated legal/administrative costs.
<b>Cost for the reader</b>	Other than in the case of open access publishing models, the consultation of scientific publications may involve a costly subscription. Patents, on the other hand, can generally be consulted for free or for a small fee in online databases.
<b>Geographical scope</b>	Copyright protection is practically worldwide <sup>8</sup> , patents only protect an invention in designated countries
<b>Duration</b>	Copyright protection of literary works extends to 70 years after the death of the author. Patent protection is limited to a maximum period of 20 years.
<b>Patent - publication pairs</b>	Considering these differences, researchers increasingly submit both a patent and a scientific publication (in that order) for the same invention. This way, researchers gain the best of both worlds, combining the advantages of patents (potential royalties, exclusive use) with the advantages of publications (academic recognition).

# Other options?

## Keeping an invention secret...

Instead of publishing or patenting, the owner of an invention may also opt to keep the invention secret to maximize its value. Most EU countries protect industrial secrets, allowing an inventor/owner to seek damages from anyone who discloses the secret. Keeping an invention secret can thus constitute a cheaper, although less reliable alternative to patenting, in particular when the expected commercial value or lifespan of the invention is limited, or it is questionable whether the invention meets patenting requirements. Considerable difficulties may arise, however, when a competitor independently patents the invention, although most EU countries will then allow the continued use of the invention in such case (known as the “prior user right”).

## ...or going public with it

An entirely different strategy is to go public with the invention: publicly announcing the invention, describing it in a public interview, publishing it in technical circulars, etc. Once the invention has been made public, the novelty requirement of the patent system will preclude anyone from patenting the invention. Similarly, inventions that have been made public are no longer protected by trade secret legislation. Also, the peer review process of scientific journals will likely reject publications that are claimed to be new, but are in fact already known in the scientific community.

While going public with an invention may at first glance not seem to render any advantages, it can nevertheless constitute an interesting policy option and defensive strategy against competitors. The researcher should make himself familiar with the policy of the institution in which he works and should take care to follow its policies in this area, and to draw to its attention, instances where he proposes to (for whatever reason) digress from that policy.

## Summary

	Patenting	Publishing	Secrecy
Typical situation	For new knowledge (inventions) likely to be able to be actually exploited in industry.	For knowledge for which there are no patenting intentions, or a patent application has already been filed.	For knowledge for which there are no patenting intentions, publication intentions, and whose disclosure should be avoided.
Conditions	The invention must be new (no prior publication), involve an "inventive step" and be susceptible to industrial application. Certain categories of inventions are excluded from protection in the EU (e.g., software as such, scientific theories, ...)	Conditions relating to the peer review process (if any)  "Originality" ( <i>generally accepted for most scientific articles</i> )	no criteria
Formal procedure?	Yes ( <i>requiring specialised assistance</i> )	No ( <i>other than the peer review process, if any</i> )	No
Costs	High (drafting, filing, prosecution, renewal, ...)	Generally low to none  A fixed fee in some "Open Access" publishing models	No
Use of the invention by third parties	Can be prevented by the owner, or allowed by the owner through a licence.	Cannot be prevented, and is likely to happen (thanks to a detailed disclosure).	Cannot be prevented, but is unlikely to happen as long as the secrecy is maintained.
Duration of "protection"	Maximum 20 years ( <i>typically</i> )	No protection of the invention, only protection of the article itself ( <i>70 years after author's death</i> )	
Geographical scope of "protection"	Only in those countries in which a patent has been granted	Practically worldwide	-
Ability to get financial return from third parties	Yes (licensing)	Not regarding exploitation of the invention.  Possibly regarding reproduction of the paper and indirectly through heightened reputation resulting from publication.	Possibly through confidentiality agreements with third parties.
Who decides? Who will own the rights?	Normally the inventor's employer ( <i>unless otherwise agreed in a collaboration contract</i> ).	Normally the author of the paper, unless (s)he transfers its rights to a publisher.	-

- 1 See [ec.europa.eu/research/science-society/document\\_library/pdf\\_06/open-access-handbook\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/open-access-handbook_en.pdf)
- 2 examples can be found at [ukpmc.ac.uk/funders](http://ukpmc.ac.uk/funders)
- 3 In addition to patents, several countries also recognize patent-like "utility models", for which the requirements are generally less strict, allowing for a faster and cheaper registration process compared to patents.
- 4 Exceptions to this are disclosures that are an evident abuse of the applicant's rights or disclosures by the applicant at certain international exhibitions.
- 5 However, in two EU countries (Estonia and Romania) and several other countries (such as the US, Japan, Canada and Australia), the patent can still be filed within a limited period of time (typically one year) after the disclosure (the so-called "grace period").
- 6 A list of European patent offices can be found at [www.epo.org/topics/ip-webguide/IPofficesmembers.html](http://www.epo.org/topics/ip-webguide/IPofficesmembers.html)
- 7 A list of European patent offices can be found at [www.epo.org/patents/patent-information/patlib/directory.html](http://www.epo.org/patents/patent-information/patlib/directory.html)
- 8 There will be copyright protection in all 164 countries that are Contracting Parties to the Berne Convention and in all 153 countries that are Members of the WTO and TRIPS.

# Report from the European Commission, DG Research

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## **Disclaimer:**

*This document provides a general, introductory overview of publishing and patenting related subjects for EU countries and does not replace legal advice. As the laws of the EU countries are not identical, some details and practices differ. You should therefore consult a legal expert to gain certainty.*

*Also, the policy of your university or research organisation, as well as your employment contract, may include specific rules on publications and the protection of inventions. You should contact your legal department or technology transfer office to clarify your responsibilities.*

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