

IOP publications

- Advances in Natural Sciences: Nanoscience and Nanotechnology*
- The Astronomical Journal*
- The Astrophysical Journal*
- The Astrophysical Journal Letters*
- The Astrophysical Journal Supplement Series*
- Biofabrication
- Bioinspiration & Biomimetics
- Biomedical Materials
- Chinese Journal of Chemical Physics*
- Chinese Physics B*
- Chinese Physics C*
- Chinese Physics Letters*
- Classical and Quantum Gravity
- Communications in Theoretical Physics*
- Computational Science & Discovery
- Environmental Research Letters
- EPL*
- European Journal of Physics*
- Fluid Dynamics Research*
- Inverse Problems
- IOP Conference Series: Earth and Environmental Science
- IOP Conference Series: Materials Science and Engineering
- Izvestiya: Mathematics*
- Journal of Breath Research
- Journal of Cosmology and Astroparticle Physics*
- Journal of Geophysics and Engineering*
- Journal of Instrumentation*
- Journal of Micromechanics and Microengineering
- Journal of Neural Engineering
- Journal of Optics*
- Journal of Physics A: Mathematical and Theoretical
- Journal of Physics B: Atomic, Molecular and Optical Physics
- Journal of Physics: Condensed Matter
- Journal of Physics: Conference Series
- Journal of Physics D: Applied Physics
- Journal of Physics G: Nuclear and Particle Physics
- Journal of Radiological Protection*
- Journal of Semiconductors*
- Journal of Statistical Mechanics: Theory and Experiment*
- Measurement Science and Technology
- Metrologia*
- Modelling and Simulation in Materials Science and Engineering
- Nanotechnology
- New Journal of Physics*
- Nonlinearity*
- Nuclear Fusion*
- Physica Scripta*
- Physical Biology
- Physics Education
- Physics in Medicine & Biology*
- Physics—Uspekhi*
- Physiological Measurement*
- Plasma Physics and Controlled Fusion
- Plasma Science and Technology*
- Plasma Sources Science and Technology
- Quantum Electronics*
- Reports on Progress in Physics
- Research in Astronomy and Astrophysics*
- Russian Chemical Reviews*
- Russian Mathematical Surveys*
- Sbornik: Mathematics*
- Science and Technology of Advanced Materials*
- Semiconductor Science and Technology
- Smart Materials and Structures
- Superconductor Science and Technology

* These titles are published in co-operation with international partners and peer review processes may vary

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Introductory guide for authors

authors.iop.org



An introductory guide for authors

This guide is for early career researchers who are beginning to write papers for publication. Academic publishing is rapidly changing with new technologies and publication models giving authors much more choice over where and how to publish their work. Whether you are writing up the results of a PhD chapter or submitting your first paper, knowing how to choose the best outlet for your work is essential.

This guide will provide an overview of academic publishing and advice on how to make the most of the process for sharing your research.

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Front cover image: Waves emanating from particles: a qualitative interpretation of the scattering of a skewed coherence beam in a random medium **D Brogioli et al** 2011 *New Journal of Physics* **13** 123007. Artistic interpretation by Frédérique Swist.

Choosing where to submit your paper

It can be tempting to begin writing a paper before giving much thought to where it might be published. However, choosing a journal to target before you begin to prepare your paper will enable you to tailor your writing to the journal’s audience and format your paper according to its specific guidelines, which you may find on the journal’s website.

Here are the top ten things to consider when choosing where to submit your paper.	
1 Peer review	Does the journal provide a peer review service? Peer review is considered a stamp of quality from the research community.
2 Relevance	Does the journal publish other, similar papers to the one you are preparing? Does it publish theoretical, experimental or applied research?
3 Reputation	Does the journal have a strong reputation in your field? Where do your peers publish?
4 Scope	Is the journal broad in its scope or is it a specialist journal read mainly by a particular community?
5 Timeliness	Is fast publication important to you? Have you checked the publication times for the journal?
6 Cost	Will the journal charge you for publishing your paper? Will your institution cover the publication charge if there is one? Will you be charged for extra pages/colour figures/supplementary data?
7 Language	Most international journals publish papers written in English. Will you need to have your paper checked by a native English speaker?
8 Citation	Is the journal likely to be cited by other researchers working in your field?
9 Indexing	Is the journal indexed in the major online databases such as ISI Web of Science?
10 Appearance	Does the journal publish papers in a format that is suitable for your work?

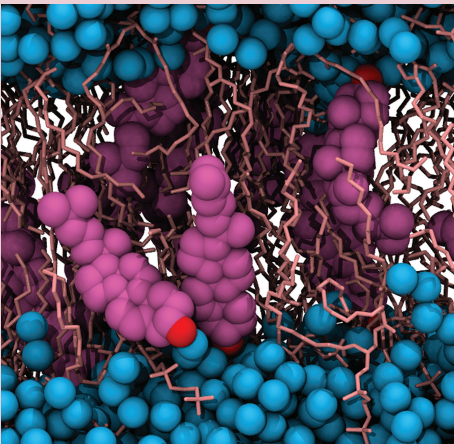
Open Access or subscription journals?

The cost of publishing academic papers can be paid for in a number of ways. Traditionally libraries and other institutions pay a subscription fee to receive individual journals or collections of titles for their researchers. This is known as the subscription model and, as an author, you usually do not have to pay a fee to publish a paper in a subscription journal, although you may incur a page charge or be charged for colour figures. The open access publishing model allows published papers to be freely available for anyone to read. This means that authors, research institutions or funding organisations may fund the costs of publishing. In return, authors can ensure that everyone is able to access their work. If you wish to submit to a journal which charges for publication, always check with your institution to ensure that there are funds available to cover

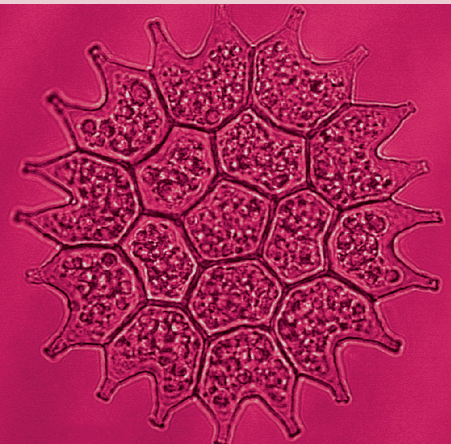
these charges. Some open access journals offer discounts so check to see whether these apply to you.

Self-Archiving

There are a number of ways to publish a paper, but many authors also share their work in online repositories. This is known as self-archiving. The arXiv repository, managed by Cornell University, is a good example of this. Authors can upload their published work to online repositories, subject to journal conditions. Many authors upload their unpublished work which has not undergone any form of review. If you wish to share your work quickly or gain informal feedback from your community, self-archiving can be useful. Remember, though, online repositories are only archives and most will not subject your work to formal peer review.



A typical snapshot of a molecular dynamics simulation of an 11% cholesterol membrane assembly **Yingzhe Liu et al** 2011 *Phys. Biol.* **8** 056005.



A bright field image of a *Pseudopediastrium* colony using an optical microscope **D B Phillips et al** 2011 *Nanotechnology* **22** 285503.

Writing and formatting

Any paper published in a leading research journal should clearly and concisely demonstrate a substantial, novel and interesting scientific result. There are three stages to preparing a paper for submission to a journal: planning, writing and editing.

Planning

Consider the best way to structure your paper before you begin to write it. Some journals have templates available which can assist you with structuring. Different sections that typically appear in scientific papers are described below.

The **title** attracts the attention of your desired readership at a glance and should distinguish your paper from other published work. You might choose an eye-catching title to appeal to as many readers as possible, or a more descriptive title to engage readers with a specific interest in the subject of your paper.

The **abstract** very concisely describes the contents of your paper. It states simply what work you undertook, your results and your conclusions. Importantly, like the title, the abstract will help potential readers to decide whether your full paper will be of interest to them. Abstracts are usually less than 200 words in length and should not contain undefined abbreviations or jargon.

The **introduction** clearly states the object of your work, its scope and the main advances you are reporting. It gives reference to relevant results of previously published work.

A **theoretical and experimental methods** section gives sufficient information to allow another researcher to duplicate your method.

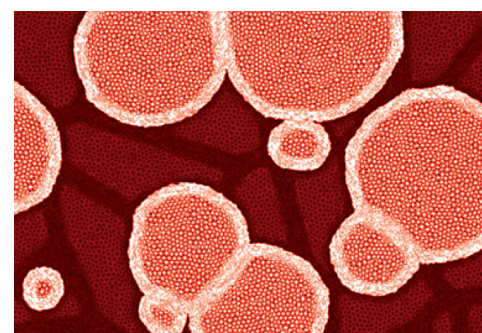
The **results and discussion** section states your results and their potential implications. In the discussion you should state the impact of your results compared with recent work.

Conclusions summarise key results and may include any plans for relevant future work.

Acknowledgments recognise the contribution of funding bodies and anyone who has assisted in the work.

References list relevant papers referred to in the other sections, citing original works both historical and recent.

Carefully chosen and well-prepared **figures**, such as diagrams and photos, can greatly enhance your article. We encourage you to prepare figures that are clear, easy to read, and of the best possible quality.



2D simulation of primary recrystallization with an initial uniform stored energy **M Bernacki, H Resk, T Coupez and R E Logé** 2009 *Modelling Simul. Mater. Sci. Eng.* **17** 064006.

Writing

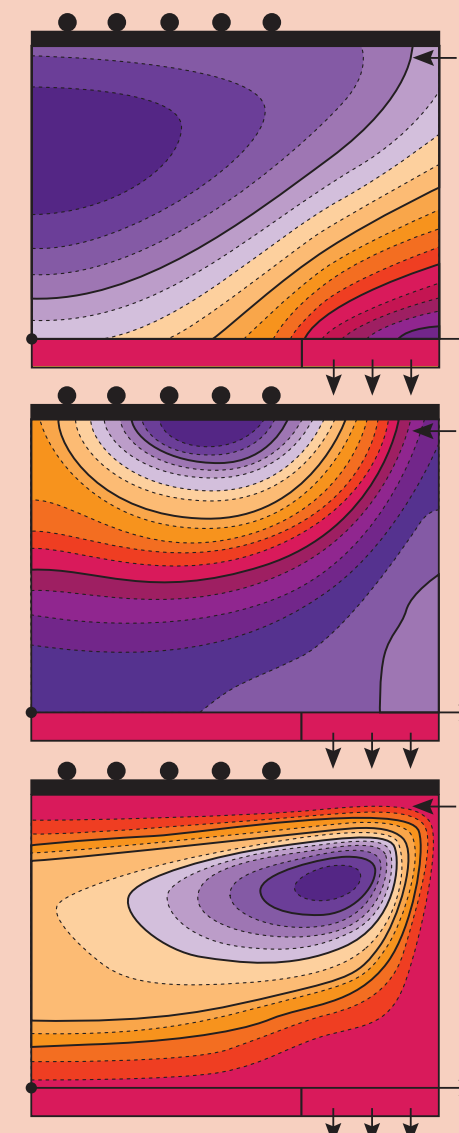
Once you have established a plan, you can begin writing your paper. You may wish to consider the following tips for good writing practice.

Clarity is crucial. Your paper must be easy to understand. Consider the readership of your chosen journal, bearing in mind the knowledge expected of that audience. You should introduce any ideas that may be unfamiliar to your readers early in the paper so that your results can be easily understood. Your paper must be written in correct English. If you lack experience of writing in English you may wish to consult a native speaker for assistance. Some journal publishers offer assistance in language editing.

Conciseness is effective in holding the attention of readers. All content of your paper should be relevant to your main scientific result. Convey your ideas concisely by avoiding overlong sentences and paragraphs. However, avoid making it so concise that it loses clarity.

Editing

On completion of the first draft, carefully re-read your paper and make any amendments that will improve the content. When editing your paper, reconsider your original plan. It might be necessary to alter the structure of your paper to better fit your original outline. You may decide to rewrite portions of your paper to improve clarity and conciseness. You should repeat these processes over several successive drafts if necessary. When complete, send the paper to colleagues and co-authors for feedback. When all co-authors are satisfied that the draft is ready to be submitted to a journal, carry out one final spelling and grammar check before submission.



2D distributions of plasma properties in the ICP reactor chamber during CF_4 plasma etching of SiO_2 : (top) electron density, (middle) F density, (bottom) F^- density **H Fukumoto et al** 2009 *Plasma Sources Sci. Technol.* **18** 045027.

Peer review process

Peer review is the process used to assess whether an academic paper is suitable for publication based on the quality, originality and importance of the work. Your paper is evaluated by expert peers in the field, known as referees, with a publication decision made by the journal editors.

Role of the editor

Upon submission, editors will assess the general suitability of your paper for the journal. If deemed suitable, the editor will select referees for your paper, based on their scientific interests and background. The editors may welcome suggestions for specific referees from you or your co-authors in some cases. When referee reports are received, an editor will make an initial decision along the following lines:

- To unconditionally accept the paper
- To request mandatory amendments with likely acceptance
- To request major revision and encourage resubmission
- To reject the paper outright

The referees provide supporting remarks and their comments are generally very helpful for improving the quality of submitted papers.



Contour plot representing various maximum invariant masses of combinations of quarks and leptons **N Srimanobhas and B Asavapibhop** 2011 *J. Phys. G: Nucl. Part. Phys.* **38** 075001.

Role of the referee

When asked to review a paper, typically referees are asked to comment on the following aspects of it:

- Scientific merit and accuracy
- Originality and motivation
- Appropriateness for the journal
- Clarity and conciseness
- Structure and balance
- Presentation, repetition and length
- Referencing

The referees provide supporting remarks and their comments are generally very helpful for improving the quality of submitted papers.

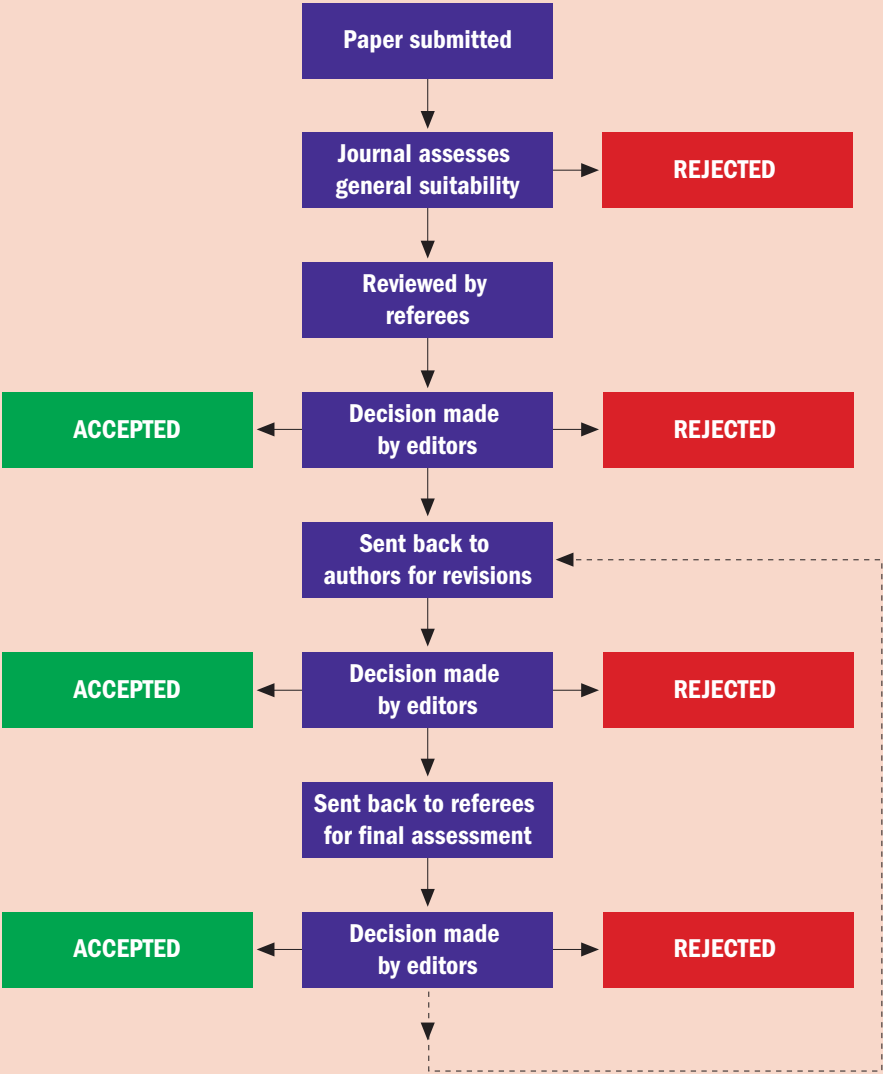
How long will peer review take?

This can vary dramatically, from several days to several months, for different research areas and depending on the responsiveness of referees. Check the journal website to see if it provides any information on typical review times. Often authors may track the progress of their paper online.

Can I appeal if my paper is rejected?

This depends on the journal policy. Often, if you can provide sufficient justification for an appeal and you can scientifically refute the reasons for the original rejection decision, then your appeal will be considered by the journal editors. Check with the publisher.

The Peer Review Process



Revising and responding to referee reports

Addressing referees' comments

Whichever type of revision you have been asked to do, you should consider each referee report carefully and address every comment. As well as making changes to your paper you should also provide a detailed point-by-point reply to each referee. Even if you do not agree with what the referee has said, or if you do not want to make a particular change, you should still provide an explanation in your reply. This will be very useful in helping the referees or editors to make a final decision on your paper.

What files to submit and when

When submitting your revised paper, you should also send in a detailed list of changes and reply to each referee. A copy of your revised paper with the changes highlighted can also be very useful.

Revision deadlines will vary between publishers. The amount of time you will be given to make your revisions will reflect

the extent of changes required. It is very important that you keep to your deadline, as your paper may be withdrawn if the journal does not receive a response from you. If you need more time to revise your paper then contact the journal; you may well be granted an extension. Be aware that in some cases, for example, when your paper is to be included in a special issue, the deadlines may be very strict.

What happens next?

If the amendments requested were relatively minor, then your amended paper may be checked by the editors. If more substantial revisions were required then your paper will probably be sent back to one or more of the original referees.

The referees might then be satisfied with your paper and request no further changes, or might suggest some more amendments. The editors may choose to consult a senior referee or make a final decision themselves.

DO...
Stick to the deadline, or ask if you need an extension.
Read each report carefully.
Seek clarification from the journal if anything is unclear and you are not sure of what the journal/referee is asking of you.
Provide an answer to each point even if you are not making changes to the paper.
Be polite. Remember that refereeing is a voluntary task and referees often spend a lot of time and effort writing reports.

DON'T...
Ignore any parts of the report - if you are not acting on any of the advice then give reasons why not.
Include personal comments about the referees. You should comment constructively on the content of the report.
Take any criticisms personally; referees can help you improve the scientific quality of your paper.

Acceptance and publication

Producing the proof

Once the editor is happy that the paper is ready for publication, the paper will be accepted and the authors informed. The process by which the paper progresses to publication will vary from journal to journal, but you can typically expect your paper to be edited to meet the format of the journal. At this point you will be contacted and asked to check the proof of your paper and inform the editor of any problems with the edit. Problems which you may encounter include unintentional changes to the meaning of a sentence as the result of editing for English, or inappropriate positioning of a figure in the paper. Most journals have their own policy on colour in print and if you think that a certain image in your paper would benefit from colour you should inform the editor; this may incur a surcharge.

Correcting the proof

Once you approve the proof of your paper, this is the final version that will be published. Once a paper is published online it cannot be amended - any corrections have to be done through a corrigendum or erratum which is a separate publication. Take some time to make sure that the proof which you approve is exactly as you wish it to appear online, as it will be too late to make changes later.

Publication

Once you have sent your corrections, they will be carried out in accordance with the journal style. The paper will then be published online. Print publication may not happen for some time depending on the frequency of the journal (if they produce a print copy at all). You should be informed when your paper is published.

Promotional material

At some point in this process you may be approached by the editor and invited to supply some additional promotional materials. If your paper is identified as being of particularly wide interest then you may even be asked to collaborate on producing a press release to accompany the publication of your paper. This is a great way of getting your paper seen by the wider public and increasing your research profile.



Image inspired by scattering of a particle by a quantum obstacle **H Schomerus, Y Noat, J Dalibard and C W J Beenakker** 2002 *EPL (Europhysics Letters)* **57** 651–657.

Promoting your published work

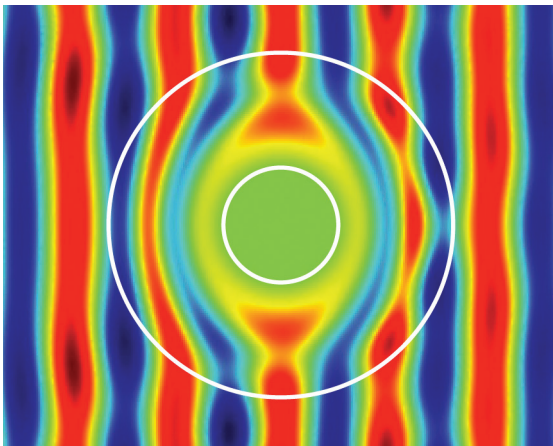
Publication should be the start of the next important phase in communicating your research: promoting your paper.

Why is it important to promote your work?

The true value and impact of your paper can be greatly enhanced by promotion. The more people who read and benefit from your research, the more valuable your paper becomes and the greater your esteem as an author.

Is promotion carried out by the publisher?

Many publishers will go to great lengths to raise awareness of your paper. For example, IOP journals have a number of initiatives to promote papers including press releases, coverage on their community and journal websites, video abstracts, LabTalks and Insights, Highlights, emails to authors' peers, and so on. However, not all papers can receive the full attention they deserve and the best experts for promoting the paper are the authors.



Total electric field distribution for a perfect electric conducting cylinder covered by a simplified cloak coming from a third-order polynomial coordinate transformation
L Peng, L Ran and N A Mortensen 2011 *J. Phys. D: Appl. Phys.* **44** 135101.

How you can promote your own work

There are many ways you can ensure that your work does not get overlooked. Here are some of the key methods.

Use your **network** and let colleagues and peers know that you have published a paper

Contact your institution's press office for advice about promoting your paper to the **media**

Use **social media** to promote your work through blogging or other outlets like Facebook or Twitter

When speaking at **conferences or seminars** be sure to mention your publication

Highlight your paper on your research **group website**

Pitching your work at the right level

Consider who your audience is. For an audience of experts it is useful to go into specific aspects of your work. If your audience is more general, then keep it at an introductory level. Avoid the use of jargon and try to communicate the benefits and applications of your research. Often the use of images can make your work more appealing to a general readership.

Measuring the success of your paper

There is no definitive way to evaluate the success of a paper. Often metrics such as how frequently a paper has been downloaded or cited are an indicator. Typically, though, it takes time for the value of a paper to be realised. Just remember that a paper that has been promoted will reach a larger audience than one that has not.

Copyright and ethical integrity

Copyright and licence agreement

Copyright

Copyright is a way to protect an original idea expressed in a physical medium. It gives the holder the right to govern the reproduction, distribution and communication of the work, both in print and electronically, to others.

Transfer of copyright helps a publisher make papers more widely accessible across different media and hence ensures that the research gains global exposure. Usually an agreement to transfer copyright from author to publisher is signed before publication.

Permissions

To use copyright-protected material, generally you must obtain the written permission of the author and the publisher concerned before incorporating the work in your paper.

Licence agreements

Some journals or publishers may not require the transfer of copyright in order to publish your article. In this case the work will usually be published under a licence agreement. A very wide variety of licences exists and authors may need to carefully read the specific conditions put on the redistribution of their work.

Ethical integrity

Ethical integrity is an essential part of scientific publishing. There are basic guidelines that all authors should adhere to.

Redundant publication

Submitting the same paper to more than one journal concurrently, or duplicating a publication, is unethical and unacceptable.

Fraudulent behaviour

Data should not be fabricated, falsified or misrepresented, and should be the author's own work.

Plagiarism

Plagiarism constitutes unethical scientific behaviour and is never acceptable. Plagiarism ranges from the unreferenced use of others' ideas to submission of a complete paper under 'new' authorship. 'Self-plagiarism' is the production of many papers with almost the same content by the same authors. Therefore all sources should be disclosed and permission sought for reproduction of large amounts of material. Note

that many publishers now take measures to detect plagiarism, such as using CrossCheck.

Authorship

Authors should ensure that all those who have made a significant contribution are given the opportunity to be listed as authors. Other individuals who have contributed to the study should be acknowledged. All the authors should have seen the paper and had a chance to make amendments to it, and agreed to its submission.

Citation

Authors should acknowledge the work of others used in their research and cite publications that have influenced the direction and course of their study.

Conflicts of interest

Any potential conflicts of interest should be disclosed to the editors. These include personal, academic, political, financial and commercial gains.

Frequently asked questions

Where can I find information on the formatting of my paper and the file types allowed?

You should check the journal website in the first instance for information on this.

Who should be included as a co-author on the paper?

Anyone who has made a significant contribution to the results reported in the paper. All co-authors should be made aware of the paper and agree to its submission.

In what order should authors on the paper be listed?

The authors should reach an agreement on the order themselves. Typically, though, the person who made the most significant contribution is listed first, while the corresponding author may be specified separately.

How long will I have to wait before receiving the referee reports?

This depends on a lot of factors, including the responsiveness and speed of the individual referees, and varies greatly from journal to journal.

Can I request different referees if I don't agree with them?

If you do not agree with the referee reports then contact the Editor, giving a detailed response to the report(s) and giving clear reasons why you do not agree. Depending on journal policy, your paper may then be sent to a different referee, or to an Editor for advice on how to proceed.

Will I be told who has written the reports?

No, most peer-reviewed journals do not tell the authors who has written the reports. Preserving the anonymity of referees is felt to be very important.

Will the referees know my identity?

Yes, most journals operate a single-blind peer review process, whereby the referees know who the authors are, but not vice versa.

Can I request a deadline extension when revising my paper?

If you need more time to revise your paper then contact the Editor as

soon as possible. They may be able to grant you an extension but this will depend on their particular policy and also other factors such as the type of paper you have submitted.

Can I publish other material related to my paper alongside the journal publication?

Supplementary files can enhance the online versions of published research articles. Supplementary files typically consist of video clips, animations or supplementary data such as data files, tables of extra information or extra figures. They can add to the reader's understanding and present results in attractive ways that go beyond what can be presented in the print version of the journal. Most journals can include such data alongside your publication.

Where can I get more information?

This is a beginner's guide to publishing only and is based mainly on IOP journal processes. There are many other sources of information, including your supervisor and colleagues. You can find more information about publishing on the following websites:

Author home page, IOP Publishing authors.iop.org
'The Science of Scientific Writing' by George Gopen and Judith Swan can be found at http://www.americanscientist.org/issues/pub/the-science-of-scientific-writing
The Research Information Network peer review guide for researchers can be found at www.rin.ac.uk/our-work/communicating-and-disseminating-research/peer-review-guide-researchers
Guide to writing a paper, Advanced Materials Whitesides, G. (2004), Whitesides' Group: Writing a Paper. Advanced Materials, 16: 1375–1377. doi: 10.1002/adma.200400767

Where this guide refers to third-party websites and/or other third-party sources of information, it is not intending to imply any direct link with those third parties, nor does IOP Publishing warrant, or accept responsibility for, the quality or availability of any information contained therein. Where accessing any third-party websites, you should ensure that you read any legal information on those websites before making use of and/or relying on any information obtained from them.

Publishing glossary

Adjudicator

An adjudicator is an additional referee who is asked to consider a paper if two or more referees disagree in their recommendation. The adjudicator typically considers both the paper and the referee comments already obtained before reaching a final decision.

Citation

When a paper is referenced in another paper, this is referred to as a citation and is considered one of the best measures of the impact a paper has on its field of research.

Citation indexing

A citation index is a bibliographic database that allows users to trace papers that cite older publications and is an important method of linking information.

Corrigendum / Erratum

A published list of errors and mistakes found in a previous publication either caused by the author (corrigendum) or publisher (erratum).

CrossCheck

A tool used to detect plagiarism by comparing an author's work against a database of existing literature.

Editor

The person who makes a publication decision on a paper based on the referees' advice. The Editor may be employed by the publisher or may be an appointed member of the research community.

Editorial Board

A group of subject experts for a particular journal who are highly regarded in their field. The Board will contribute to the peer review process and oversee the quality of the journal.

Impact Factor

The average number of citations received per paper published in a particular journal during the preceding two years. The Impact Factor is often used as a gauge of the relative quality of the journal within its field.

ISI

The Institute for Scientific Information (ISI), part of Thomson Reuters Corporation, specialises in citation indexing and analysis.

Open access

Typically an open access journal or repository allows readers to access papers without financial or legal barriers. The most common models are:

- **Gold open access:** A model under which a fee is paid by the author, their institution or the funding body to make the paper freely available to read and to re-use.
- **Green open access:** The self-archiving of a paper in a subject or institutional repository. It is generally the author's final peer-reviewed version (the accepted manuscript before it is prepared for publication), not the published version. The journal may impose some restrictions. No contribution is made to the costs of publication.
- **Hybrid open access:** This is a publishing model in which 'subscription based' journals allow authors to make individual articles open access on payment of an article publication fee.

Page charges

An author may be charged for some or all of the pages within the paper. There may also be a charge for colour figures.

Peer review

Peer review is the process used to assess whether an academic paper is suitable for publication based on the quality, originality and importance of the work.

Publication charges

Publication in some journals may incur a fee.

Publication repository

A storage facility, typically online, that provides access to a collection of scientific publications.

Referee / Reviewer

An expert in the field, selected to review a paper, whose identity, for most journals, is not revealed to the author.

Self-archiving

When a digital copy of a paper is deposited by the authors in an online institutional or subject repository. This can be the original or the peer-reviewed version but not the final published version.

Subscription journal

A journal where the reader, institution or library pays a subscription fee to have access to the journal. Many subscription journals have no charge for authors to publish in them although some have page or figure charges.