



Penelitian dan Publikasi Bereputasi: Sukses Kuliah Pascasarjana

Reputable Research and Publications: The Key to Postgraduate Success

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Supervisor: Finding the right person

Supervisors shouldn't just be experts in their field, they should also know how best to convey that knowledge.



Supervisor: Finding the right person

Four recommendations to help students and supervisors maintain a productive working relationship:

- Be clear about expectations from the start. Discussing expectations at the beginning is one of the simplest ways to ensure PhD students and supervisors remain on the same page throughout the candidature.
- Agree on achievable goals. Setting clear goals ensures that PhD students and supervisors work towards the same outcome.
- Help students be independent and collaborative. Guiding students to think for themselves and team up with other researchers can help candidates stay motivated throughout their PhD.
- **Keep communication open.** While everyone has different styles of communicating, it's imperative that PhD students and supervisors agree on a style that suits both their needs.



"I'm coordinating five different R&D projects, but SURE, I can spare a minute."

https://marialuisaaliotta.wordpress.com/wpcontent/uploads/2011/12/supervisor.jpg

YOUR LIFE AMBITION - What Happened??







WWW. PHDCOMICS. COM

Q: How satisfied are you with your decision to pursue a PhD?

Q: Since the start of your graduate-school experience, has your level of satisfaction increased, worsened or remained the same?



Nature | Vol 575 | 14 November 2019 https://www.nature.com/articles/d41586-019-03459-7

Q: Overall, what do you enjoy most about life as a PhD student?



Nature | Vol 575 | 14 November 2019 https://www.nature.com/articles/d41586-019-03459-7

Overextended and stressed



OVEREXTENDED AND STRESSED

Long hours in the laboratory and other demands have taken a toll on PhD students' well-being and mental health.



Q: Do you agree or disagree with the following statements?

The culture at my university calls for long hours and sometimes working through the night.

My university offers schemes to promote mental health and well-being beyond one-to-one meetings.

My university supports a good work-life balance.

My university offers adequate one-to-one mental-health support.

Mental-health services in my university are tailored and appropriate to the – needs of PhD students.

My supervisor has a good awareness of support services and is able to direct – me to them if necessary.







Some data have been rounded to the nearest per cent. Data-analysis services were provided by educational-research agency Shift Learning.



https://www.nature.com/articles/nj7574-597a

ACADEMIC DREAMS

PhD students around the world continue to aspire to careers in academia despite a global job crunch. Industry — a growing job sector for PhD scientists — rates a distant second.

Q: Which of the following sectors would you most like to work in (beyond a postdoc) when you complete your degree?



Nature | Vol 575 | 14 November 2019 https://www.nature.com/articles/d41586-019-03459-7

1 How likely are you to pursue an academic career after you finish your programme?



• Are you now more or less likely to pursue a research career than before you started your programme?



Q After completing your PhD, how long do you think it will take to find a permanent position?





Publishing scientific articles

Academic Guilt



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How a good article is born



- Multidisciplinary members
- Proportional in contributing

Networking

- Experimental design and data collection
- Data treatment and data processing
- Make good presentation of data
- Interpretation of data
- Discussion and summarizing

Preparation before writing

What do we have to prepare?

- Experimental design and data collection
- Data treatment and data processing
- Make good presentation of data
 - Graphic/figure/diagram
 - Table
 - Scheme
 - Image
- Interpretation of data
- Summarize all interpreted data into a one-sentence conclusion
- Completing data/information for discussion If they are not complete, then:
 - Introducing some additional experiments
 - Information from references
 - Theoretical approaches (modelling, computational...)



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Experimental design

- Determine required data/information to construct the one-sentence conclusion.
- Decide whether the conventional or customized experimental setup is required.
- If a customized setup is required, design, construction and fabrication/purchasing maybe needed.
- Special data collection, treatment/processing maybe required.



Scientific collaborations

Sharing resources

- Facilities
- Students
- Researchers
- Funds
- Data
- Time

Sharing ideas



- Concepts
- Methods, procedures, protocols
- Problems and solutions
- Know-how

Sharing research outcomes

- Join publications
- Patents
- Prototypes
- Products
- Books



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Why and where to publish?

Why should we publish?

- 1. Advancing the Field
- 2. Professional Growth
- 3. Demonstrating Quality
- 4. Institutional Requirements

Where should we publish?

- 1. Aim High but Realistically
- 2. Journal Fit
- 3. Impact and Readership
- 4. Avoiding Oversaturated Topics
- 5. Quality Standards
- 6. Choice of Outlets
- 7. Avoiding Predatory Journals

Academics should aim to publish high-quality research that advances their field and contributes meaningful insights. They should be realistic about the fit of their work for top-tier journals and choose outlets that best match the focus and audience of their research. By doing so, they can maximize the **impact and visibility** of their work, fulfill **institutional requirements**, and further their professional development.

Bob McKercher. Tourism Management 51 (2015) 306e308

Selecting a journal for publication: criteria to consider

Publishing in journals that are not reputable can diminish the credibility of your research and limit your career!!!

- Adhere to the principles of research integrity and publication ethics.
- Identify journals that follow best practices promoted by professional scholarly publishing organizations.
- Avoid publishing in journals that do not have a clearly stated and rigorous peer review process.

Performing evaluation of the integrity, history, practices, and reputation of a journal before submitting a manuscript will help ensure that your work gets the readership it deserves.

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Submitting a manuscript to unsuitable journals is a common mistake, and can cause journal editors to reject the manuscript before peer review. Choosing a relevant journal makes it more likely that your manuscript will be accepted.

How to write "Good"?



Writing should be an enjoyable part of a researcher's routine, not a chore. By reading widely, writing regularly, editing rigorously, focusing on storytelling, and developing а personal style, you can improve your writing skills and make scientific communication more engaging and effective. Find your voice, tell your story, and contribute to the ongoing discussion in your field.

How to write "Good"?

- 1. **Read a Lot**: Read extensively and Learn from others.
- 2. Write a Lot: Practice regularly and Always be composing.
- 3. Edit a Lot: Be ruthless in editing and Kill your darlings, remove any parts of your writing that are redundant or do not add value, even if you are emotionally attached to them.
- 4. **Know Your Story**: Tell a story and Simplify complex ideas.
- 5. **Develop Your Own Style**: Be original, Synthesize and innovate.



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Impactful trio (Title, Abstract and ToC) Title, Abstract, and Table of Content

1. **Title**: The title should be concise (typically under 15 words) and use key terms that highlight the novelty of the study. It should avoid acronyms and abbreviations unless they are widely recognized.

2. **Abstract**: The abstract provides a concise summary of the research, including an introduction to the field, the methods used, key findings, and the significance of the study. It should not include detailed methods, results, discussions, equations, or references. The recommended length is between 150 to 300 words.

3. **TOC Graphic:** The TOC graphic visually summarizes the key message of the study. It should use high-resolution artwork and short, clear text labels, ensuring legibility at the final size of 3.25 inches wide and 1.75 inches tall.

Langmuir, 2023, 39, 2089-2091



Figure 1. Example of a TOC graphic from the *Langmuir* Perspective article by Aksoy et al. titled "Role of Nanoparticles in Nanofluid Droplet Impact on Solid Surfaces".¹



Figure 3. Example of a TOC graphic from the *Langmuir* Perspective article by Sha et al. titled "Leveraging Isothermal Titration Calorimetry to Obtain Thermodynamic Insights into the Binding Behavior and Formation of Metal–Organic Frameworks".³

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Weitzlab guide to good paper writing

All scientific papers should be well written; this will make the reader **want to read** the paper and will increase the likelihood that the reader will actually pay attention to what you are trying to say.



You may have been taught to write lab reports, and hence papers, as following the order of **introduction**, **summary of previous results**, **experiment**, **results and discussion**, and finally some **conclusions**. However, in almost all cases, if you write a paper with this structure, it will be just like a **lab report**: **Boring!**

Step-by-step guide (1)

- Start with the conclusion first
 - This does not mean the conclusion section, but the conclusion you have arrived at. Make it one sentence, two at most. Have a single, key point you are trying to make. These are the most important sentences that you will write, as this will determine exactly what the paper is about. If you write this first, then you can write the rest of the paper to just make this point.
 - Ideally, you know exactly what the main conclusion is before you write the paper. These are the easiest papers to write. However, there are times when the actual writing of the paper will help refine what it is about. Thus never be afraid to change these sentences if you learn more upon writing the paper. This can mean rewriting parts of the paper, but this will invariably lead to a better paper, so make sure to do this.

Step-by-step guide (2)

Main point of the paper

- A short paper can only make one main point, and perhaps half of a second point.
- A longer paper can make an additional point. However, rarely can a single paper make more than a couple of points. There should always be a central point for each paper.



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Step-by-step guide (3)

- Introduction
 - The introduction is **the most important part** of the paper. It is what will make the reader **want to read more** of the paper. It is often also the main paragraph that determines whether or not a paper is **accepted**.
 - Follow this general order to write an effective introduction:
 - Have a general, introductory sentence about the topic. In the first few sentences, establish that the topic of the paper, as summarized in your one-sentence conclusion. It has to be interesting and important, preferably from both scientific and technology point of view.
 - Make a literature review very concisely, then conclude from this review that there is one key thing that is still unknown, without which we can not progress. This key thing is exactly about your one-sentence conclusion sentence, which means that you have introduced your paper correctly.
 - Finish the introductory paragraph with a statement about how if we understood or knew the information about the topic of the paper it would be very important.
 - Close the introduction section by starting a short new paragraph which very concisely describes what you have done and what you have learned that should essentially summarize the point made in your one-conclusion sentence.

Step-by-step guide (4)

• Figures

- Choose the figures, and write captions before you write the main text of the paper. These should be chosen to make the point that is your conclusion. Having the figures chosen first will make writing easier. However, **The reader should not have to stop and read the caption** to understand what is in the figure and why it is important.
- When describing a figure, it is important that the reader know what to look for before looking at the figure. Therefore, it is always best to describe what you are plotting or showing, and the key point that you want the reader to come away with, before you have the reader look at the figure.

Outline

- You are trying to make **the point of the conclusion**, and you are trying to provide **the most convincing case** to the reader. This will often mean presenting things in an order that is different than the way you discovered the conclusion; **don't be historical**, be as clear as possible.
- It is usually best to write an **outline** after writing the **summary sentence** and **choosing the figures**. This will make writing the paper easier, and will ensure that the whole paper is structured to make the point in the summary sentences.

Step-by-step guide (5)

- Order
 - Pay close attention to the order of your structure. Put things in the most logical order. For example, when you are describing your experiment, keep logical portions together. It is usually not a good idea to mix the description of the experiment with the results, although in a short paper, this is often not the case – there, you may not have a separate experiment section, and thus may want to introduce new experimental techniques as they are needed.
- Abstract
 - The abstract should be written last, <u>after the rest of the paper is</u> <u>complete</u>.
 - It should consist roughly, not literally, of
 - 2 sentences from the Introduction
 - 2 sentences from the Conclusion
 - 1 sentence about the importance of the paper

The ethics of scientific publishing: Black, white, and "Fifty Shades of Gray"

The complex ethical landscape of scientific publishing

- 1. Author and Research Ethics: Poor study design, data manipulation, fabrication, falsehood, and plagiarism.
- 2. Editorial Ethics : Bias toward publishing positive results, self-citation practices, and "citation cartels."
- **3. Publishing Ethics** : The concept of open access aims to democratize access to scientific knowledge, predatory publishers exploit this model by charging authors high fees without providing proper editorial services or peer review.
- **4. Restoring Ethical Integrity** : The use of antiplagiarism software, rigorous peer review processes, public trial registration, and promoting ethical mentorship among researchers.
- 5. Future Directions: a potential shift away from traditional journals to alternative platforms like data repositories and archive sites, which can facilitate ongoing scientific debate and reduce the influence of predatory publishing practices. He also advocates for the adoption of new metrics to assess the impact of research beyond traditional citation counts.

Overall, the article calls for a collective effort from authors, editors, publishers, and institutions to uphold ethical standards and ensure the credibility and reliability of scientific literature.

Zietman, Int J Radiation Oncol Biol Phys, Vol. 99, No. 2, pp. 275e279, 2017

Predator publishing

How to Identify Predatory Publishing

Aggressive Solicitation
 Fast-Track Publishing Promises
 Lack of Transparency
 Quality Control
 Misleading Information
 Questionable Editorial Practices
 Beall's List (<u>https://beallslist.net/</u>)

Tips for Researchers

- 1. Check Beall's List
- 2. Evaluate Indexation Claims
- 3. Transparency and Policies
- 4. Consult Reputable Lists
- 5. Scrutinize the Editorial Board
- 6. Peer Review Process
- 7. Publication Fees
- 8. Quality of Published Articles



Source: © M-H Jeeves

An investigation into ChatGPT's application for a scientific writing assignment



An investigation into ChatGPT's application for a scientific writing assignment





An investigation into ChatGPT's application for a scientific writing assignment



Unethical use of ChatGPT

1. Introduction

Certainly, here is a possible introduction for your topic: Lithiummetal batteries are promising candidates for high-energy-density rechargeable batteries due to their low electrode potentials and high theoretical capacities [1,2]. However, during the cycle, dendrites forming on the lithium metal anode can cause a short circuit, which can affect the safety and life of the battery [3–9]. Therefore, researchers are indeed focusing on various aspects such as negative electrode structure [10], electrolyte additives [11,12], SEI film construction [13,14], and collector modification [15] to inhibit the formation of lithium dendrites. However, using a separator with high mechanical strength and chemical stability is another promising approach to prevent dendrites from infiltrating the cathode. By incorporating a separator with high mechanical strength, it can act as a physical barrier to impede the growth of dendrites. This barrier can withstand the mechanical stress exerted by the dendrites during battery operation, preventing them from reaching the cathode and causing short circuits or other safety issues. Moreover,

chemical stability of the separator is equally important as it ensures that the separator remains intact and does not react or degrade in the presence of the electrolyte or other battery components. A chemically stable separator helps to prevent the formation of reactive species that can further promote dendrite growth. Researchers are actively exploring different materials and designs for separators to enhance their mechanical strength and chemical stability. These efforts aim to create separators that can effectively block dendrite formation, thereby improving the safety and performance of lithium-ion batteries. While there are several research directions to address the issue of dendrite formation, using a separator with high mechanical strength and chemical stability is an important approach to prevent dendrites from infiltrating the cathode and ensure safe operation of lithium metal batteries.

Several types of separators currently used in research include nanoporous polymer separators [16], ceramic composite separators [17], nanofiber separators [18–20], and metal-organic skeleton (MOF) separators [21–24]. While these separators have shown some ability to inhibit the growth of lithium dendrites, they still have some drawbacks,

Unethical use of ChatGPT

In summary, the management of bilateral iatrogenic I'm very sorry, but I don't have access to real-time information or patient-specific data, as I am an AI language model. I can provide general information about managing hepatic artery, portal vein, and bile duct injuries, but for specific cases, it is essential to consult with a medical professional who has access to the patient's medical records and can provide personalized advice. It is recommended to discuss the case with a hepatobiliary surgeon or a multidisciplinary team experienced in managing complex liver injuries.

Conclusion

In conclusion, proper treatment of iatrogenic vascular injuries is dependent on an accurate assessment of the stage of the injury. The injury should be recognized quickly. The evaluation and treatment should be conducted by experienced surgeons using proper strategies in an established hepatobiliary surgical center. Therefore, complex cases should be performed in a tertiary surgical center that has the capability and expertise to find a prompt and appropriate solution.

https://doi.org/10.1016/j.radcr.2024.02.037

Peer-review and article rejection





www.phdcomics.com

Peer-review and article rejection

How It Works



https://axial.acs.org/publishing/peer-review-and-you-how-it-works-and-why-its-success-depends-on-reviewers-like-you

Common reasons for rejection

Technical reasons for rejection include:

- Incomplete data such as too small a sample size or missing or poor controls
- Poor analysis such as using inappropriate statistical tests or a lack of statistics altogether
- Inappropriate methodology for answering your hypothesis or using old methodology that has been surpassed by newer, more powerful methods that provide more robust results
- Weak research motive where your hypothesis is not clear or scientifically valid, or your data does not answer the question posed
- Inaccurate conclusions on assumptions that are not supported by your data

Common reasons for rejection (cont'd)

Editorial reasons for rejection include:

- Out of scope for the journal
- Not enough of an advance or of enough impact for the journal
- Research ethics ignored such as consent from patients or approval from an ethics committee for animal research
- Lack of proper structure or not following journal formatting requirements
- Lack of the necessary detail for readers to fully understand and repeat the authors' analysis and experiments
- Lack of up-to-date references or references containing a high proportion of self-citations
- Has poor language quality such that it cannot be understood by readers
- Difficult to follow logic or poorly presented data.
- Violation of publication ethics

5 options To consider after article rejection

1) Make the recommended changes and resubmit your manuscript to the same journal.

2) Make changes and submit your manuscript to a different journal.

- 3) Make no changes and submit your manuscript to a different journal.
- 4) Discard the manuscript and never resubmit it.
- 5) Appeal the decision.



Conclusions

Pursuing a Ph.D. is not a battle but a long war; not only intelligence and effort but also endurance are necessary.

Having good communication and relations with your supervisor is one of the success keys to finishing a Ph.D.

Deep thinking, profound discussion, and well-prepared experiments with good design/setup help us obtain good data that reduces the effort needed to prepare a good article.

There is no shortcut or highway to write a good scientific article.

One-sentence conclusion is a key to write a good paper.

Considering three important factors- the "wow" factor, novelty, and well-written- is very helpful in avoiding rejection without reviewing.





Merci beaucoup



Thank you

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https://www.itb.ac.id/staf/profil/veinardi-suendo

