

scientific publication

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Note

A paper (publication) is only *a part* of the study or research result.

What you have learned and experienced is more important:

You are learning how to learn!

Must find out why it did not work!

In any real research, most of the effort is in the “preparation” or “trial and error” stage.

Do not be discouraged if “everything goes wrong” or “nothing comes out”, as long as you are learning something and gaining experience.

Research work

- Most **novel** results come accidentally.
- If your result is not as expected, you should **understand the reason**. It may be something really new. (Must find out why it did not work!)

Preparing a paper

Present the results of your work

- 1. What to publish**
- 2. Scientific content**
- 3. Presentation**
- 4. Manuscript appearance**
- 5. Submission**
- 6. Revision and reply**

Writing the paper

Choose only one topic for a paper.

The topic should contain something new or important that can be clearly pointed out.

Don't include results or discussions that are not directly related.

Choose only one topic for a paper

If you have several new results, you should write several papers!

A short and simple paper is more attractive and easier to read and understand.

You can include the minor results as examples, limiting cases, and/or applications.

The topic should contain something new or important that can be clearly recognized

**“new” means
new idea
new area
new method
new result or solution
new explanation, or
new application**

Most *newies* do not come from pre-determined or pre-assigned work. They come from accidental discoveries!

**Don't include anything that
is not **directly** related.**

How to start

First write a short but self-contained version in 1 to 2 pages, use it to give a talk within 10 minutes.

The reader should **understand exactly** what your new idea or result is.

**The complete paper
should also be as
short as possible!**

A paper is show (not teach) new results to others and to convince them.

Writing the manuscript

Do not waste time in thinking about what to write!

1. Start with “Derivation of equations” or “Experimental setup”.
2. Description of the results and write the figure captions (very important).
3. Analysis of the results.
4. Last to write: Conclusion, Introduction, and Abstract.

New idea and understanding (such as finding that all you have done is wrong) can often appear during the manuscript writing.

The manuscript should be as short as possible

Use the simplest writing.

Do not include anything that is not directly relevant.

Do not repeat anything unless absolutely necessary.

Use

In the next section, we In Sec. III, we In the Conclusion, we ...

only for very long papers.

Avoid long derivations and descriptions. Just give the most essential steps or cite existing papers.

For example, one might write:

...From the conservation and the Maxwell equations and following the approach of Wang [3], we obtain after some algebra ...

The writing should be as clear as possible

- Use only common words.
- Use only simple sentences.
- Use only simple English. Do not use “flowerly” English, like in “Inglish”.
- Do not use unnecessary words and lines.

- Do not use colloquial English, such as **don't**, **we're**, **we've**...
- There must be an “article” in front of most nouns. Use **“a”** and **“an”** for an object that cannot be pinpointed, **“the”** if you can point at it.
- The empty spaces are important.
- Punctuations are also needed after formulas.
- Make use of connecting words, such as
accordingly, however, in contrast to ..., furthermore,
in fact, ...

but make sure that you know their meanings!

References

Include many relevant references, but as a bundle (e.g., use ... [1-14]).

Describe a reference in more detail **only if** your work is based on it.

Do not criticize a paper unless you can do the problem better (small improvement does not count.)

If you submit to the journal XXX, refer to several papers from XXX.

If you suggest some one for referee, your reference should contain his papers

Technical points on manuscripts

- Read the **author's instructions** of the journals carefully. Do not just copy the style of a **printed** journal paper.
- Use Latex and the journal's style (.sty) file. If you use **SWP**, export to **plain latex** version. Avoid unusual fonts.
- If you must use **Word**, use **MathType** for all **mathematical expressions**.

- Prepare the figures with a simple figure editor. Matlab is the best.
- Avoid explanations inside a figure. Put everything in the caption.*
- Figures should normally be submitted separately (not included in the text). For APS journals, you can only submit the figures in **EPS**.

* Figures in ppt and in journals are different!

Some tricks

- Have a long reference list.
- Write a note to the editor.
- Suggest referees and explain why.
- Refer to many papers from that journal.
- Refer to your good friends and suggest them as referees.

How to handle referee comments

- Reply to the referee comments one by one, and in detail.
- Do not try to confuse the questions and comments.
- Never say that the referee is wrong unless you can **clearly** show that.

- Do not flatter referees openly. At most write “the referee is quite right on this point...”, “we thank the referee for ...”
- If you don’t want to reply to a referee, you can ask for a new one. But you still need to explain clearly why the referee is wrong. (The editor will send the comments/replies to the new one.)
- Don’t wait for more than one month for the reply, unless new computation or experiment is needed.

Plagiarism 抄袭

Plagiarism includes copying of idea, method, and sentences.

Copying of sentences is not allowed, even if the problems are completely different.

notes

The manuscript should be complete and in the “final” form.
Don't plan to improve it in the revision.

Journals will not make major corrections and style improvements for you (too expensive).

Latex is now the most important platform for publication. You should learn to write a latex manuscript using a simple editor, such as Miktex (free).

The duty of a scientist includes writing, typing, and publishing a paper. Learning the technical details is very useful!

10 RULES FOR GOOD WRITING

D. Roberts

1. Prefer the simple description to the elegant:

--She was chubby with small and pale hands.*

--She was fusby with diminutive and colorless hands.

* Keep it simple and to the point.

2. Prefer the familiar word to the exotic:

--He held the wine flask carelessly.*

--He held the ampula carelessly.

*wine flask is the same as ampula.

3. Prefer ordinary writing style to the romantic style:

--His kiss was tender.*

--His lips gently bushed her pouting mouth.

*Unless you are writing a romance, keep your descriptions short.

4. Prefer nouns and verbs to adjectives and adverbs:

--As she hangs the picture over the desk she feels tender thoughts of Walter.*

--Hanging the picturesque painting high above the red lacquered desk, she held heart-swelling and passionate thought of Walter.

*Use clear statements.

5. Use picture nouns and actions verbs:

--It was a hot summer day but under the umbrella Jonathan Adams could deal with the heat.*

--In Portland it is to be expected that August will be hot, but under the blue and white striped table umbrellas shading Jonathan Adams, the heat became all but intolerable.

* Simple descriptive sentences are preferred.

6. Never use a long word when a short one will do as well:

--"It was serendipitous to me, Watson."

--"It was news to me, Watson." *

*It's better to write simply than to simply write.

7. Master the simple metaphor:

--She was built flat as Kansas.*

--He was tough as a year in jail.*

--The finish was smooth as driftwood.*

*Descriptions do not have to be boring.

8. Prefer the simple sentence to the complicated:

--The existing world's food production can be increased with the use of common chemicals.*

--The way to increase the world's production of food from existing acreage is through the application of relatively inexpensive chemicals that can be mass-produced in factories.

*While both examples say the same thing one is easier to "read" than the other.

9. Vary your sentence length.

--The President called in his advisor. They talked about the foreign options. The options were bleak and risky.

--The President called in his advisor to discuss the options they had to resolve the foreign crisis. The options were risky.*

*Good writing varies the sentence length.

10. Use the active voice.

--Congress set the budgetary limits and the Union fought the new contract.*

--Budgetary limits were set by congress and the new contract was fought.

*Active voice animates the story. A verb with a direct object is in the active voice.