

How to maintain lab notebooks

It might be crucial to prove the date an invention was made. Without a well kept lab notebook, it may be impossible to accurately identify the invention's date to the satisfaction of a court.

We have compiled some recommendations to help you maintain lab notebooks to a high standard.

Purpose of your notebook

The purpose of your notebook is to act as a credible record of what you invented and when you invented it. The notebook may be needed to prove the date of invention for the United States patent system - at least for now. US law may change soon to drop the "first to invent" system.

The notebook could also be used to prove ownership in ownership disputes in other countries.

Complying with all of the recommendations below may be too onerous for every notebook. When deciding how far to go with compliance consider:

- the value of the research project in question
- whether your business plan requires you to file a patent application in the United States, and
- whether all of these recommendations are practical for your organisation.

Remember, the aim is to prepare a record that a court believes is accurate. You can achieve that degree of credibility by clear record keeping, without necessarily complying with all of these recommendations.

The recommendations are not a checklist of essential steps but are recommendations to help avoid potential pitfalls. We have split our recommendations into two categories.

The "highly recommended" category should be enough for most projects.

The second category of recommendations that would be applied in an ideal world could be saved for critical, high value projects, or an organisation that is able to implement these recommendations without much difficulty.

Choosing and using your notebook

Follow these guidelines to ensure you can detect tampering in your notebooks.

Highly recommended

- Bind lab notebooks or use pre-bound notebooks. Preferably you should use purpose-printed lab notebooks that have consecutively numbered pages.
- Never remove pages from notebooks.
- If you do need to delete information, cross it out ensuring that the original text can still be seen. When correcting spelling mistakes do not use correction fluids.
- Permanently attach separate pieces of information (for example computer printouts), and ensure that the relevant entry refers to the extra information. It is best to use staples to attach additional information. You can use other methods to attach additional information but make sure you can detect tampering in the way the information is attached.
- Do not change information from an earlier entry – instead, refer back to the earlier entry in the most recent entry and discuss what should have been changed.

- Use ink rather than pencil or any other erasable writing tools.
- Sign and date both the inside cover of the notebook and each and every entry in the notebook.
- Don't leave gaps or blank spaces. These can be seen as providing an opportunity to insert information to earlier entries. If you do need to leave a gap (so as to start on a fresh page), draw a line through the gap and date it.
- Sign and date both the inside cover of the notebook and each and every entry in the notebook.
- Have another person read, sign and date significant entries at regular intervals.

In an ideal world

- Have a person who understands the technology read, sign and date each entry as soon as possible after the entry is made.
- This person should clearly note that they have read and understood the content of the entry.
- This person should not be in the same research team as the notebook owner.
- Make sure that the entry dates run on to each other, and show no gaps in the experimental chain – to indicate that the notebook owner(s) diligently worked on the invention. If there are gaps between entry dates, explain the gaps (e.g. conferences attended or other projects on the go).

Content of your notebook

Follow these guidelines to ensure your lab notebook contains relevant information in the proper form.

Highly recommended

- Describe experiments and actions in the past tense – a lab notebook should be a record of what has already been done.
- Ensure that the information is clear and can be interpreted by someone other than the author(s). Use common terms that are understood in the art, and clearly define any terms that may not be clear to a reader. If necessary, create a glossary.
- Make sure that any information relating to experiments and actions contains details of experiments such as ideal conditions, problems encountered, details of equipment used, pictures and graphs of results.

In an ideal world

- Ensure that plans for future experiments are also clearly noted and mapped out in detail before they are performed.
- Note all details of meetings about a project and ensure that the names of contributors to meetings are clearly documented (as well as notes on their actual contribution to the project).

Management

Follow these guidelines to manage your lab notebooks efficiently.

Highly recommended

- Take care of your notebook and store it somewhere safe.
- Catalogue lab notebooks so that it is always possible to identify the author of a lab notebook, the project and invention that the lab notebook relates to and the time period covered by each lab notebook.
- Index and safely store completed notebooks.
- Keep notebooks for at least two years after a US patent has been granted and preferably for at least 10 years after a patent application has been filed.

In an ideal world

- Keep lab notebooks in a secure location (such as a safe or fire-proof locked room).
- Ensure that each lab notebook is checked in and checked out every day – avoid leaving lab notebooks in laboratories overnight. Each lab notebook should be signed out by the user before use, and signed in by the party in charge of storing lab notebooks in the secure location.
- Lab notebooks should be kept until six years past the life of the patent protecting the invention documented by the lab notebook.
- Internal patent and lab notebook records should cross reference each other (so it is clear to a person in 20+ years whether they can destroy old lab notebooks).
- If possible create copies (electronic or otherwise) of lab notebooks in case originals are damaged or lost. Ensure that these are certified as true copies by a suitably qualified person in the event that the copies are required as evidence.