

# Guidelines for Lab Notebooks

Established September 10, 2009

**Article 1 (Purpose)** These guidelines set forth matters concerning the preparation and management of lab notebooks for the systematic management and utilization of information, data, know-how, etc., obtained through research & development activities as specified in the Regulations on the Management of Research Funds of Pohang University of Science and Technology.

**Article 2 (Application Scope)** These guidelines shall apply to all principal investigators and participating researchers who participate in research and development activities as specified in the Regulations on the Management of Research Funds of Pohang University of Science and Technology.

**Article 3 (Definitions)** The terms used in these guidelines shall be defined as follows:

1. "Lab notebook" shall refer to a record of research in which researchers document the whole process of research from its inception to the reporting/publication of the results or the acquisition of intellectual property rights.
2. "Paper lab notebook" shall refer to a lab notebook in the form of a bound paper notebook in which contents are handwritten with a pen, etc.
3. "Electronic lab notebook" shall refer to a lab notebook in which contents are recorded and saved in the form of an electronic document.
4. "Electronic document" shall refer to a document created by the information processing system and transmitted, received, or saved in an electronic format.
5. "Lab notebook for ongoing research" shall refer to a lab notebook used for ongoing research.
6. "After-use lab notebook" shall refer to a lab notebook which is no longer in use because the research project has been completed or suspended.
7. "Recorder" shall refer to a person who records the process and results of research in person while participating in the research.
8. "Inspector" shall refer to a person who examines the entries in a lab notebook and signs them.

**Article 4 (Roles)** ① The President of the University shall utilize lab notebooks for the purpose of managing research and development projects through the accumulation of research information, providing know-how for the continuation of research, and protecting intellectual property rights. The President shall also create an environment that enables researchers to keep lab notebooks sincerely and faithfully. However, the President may not use lab notebooks for the purpose of controlling the researchers of the University.

② The unit in charge of research management shall periodically offer educational courses for the researchers of the University and the recorders of lab notebooks on the provision and management of lab notebooks and the recording and management methods, etc.

③ Upon receiving a notice of the launch of a research and development project, the principal investigator must receive a blank lab notebook from the unit in charge of research management, pass it to the researchers participating in the project and see to it that the lab notebook is kept truthfully and faithfully.

④ The recorder must faithfully record the whole process of research performance and its results in a lab notebook.

⑤ The inspector must check through periodic inspections whether or not entries into a lab notebook are being made faithfully and accurately in accordance with these guidelines.

⑥ The principal investigator must educate, guide, and supervise the recorder so that the recorder can keep a lab notebook without negligence.

**Article 5 (Requirements for Lab Notebooks)** ① A paper lab notebook must meet the following requirements:

1. A lab notebook must be bound in such a manner that renders insertion or removal of pages difficult.
2. When making entries into a lab notebook, one must use a writing instrument that will not deteriorate the quality of writing over time and hence guarantees a long-term preservation of records.
3. Each and every page of a lab notebook must have a page number, page border and margins. The name of the institution, a serial number, the title of the research project, dates recorded, and the

signatures of the recorder and the inspector must be included.

② An electronic lab notebook must include the following functions:

1. A function that validates the signatures of the recorder and the inspector
2. A function that automatically records the date and time of an entry
3. A function that permanently marks any and all changes made to the existing entries

**Article 6 (Contents)** ① All the results of all experiments, including the methods and processes used for the experiments and the data that are considered to indicate a failure, must be recorded in a lab notebook.

② In addition, the following items shall be recorded in a lab notebook whenever necessary, based on the details of the research conducted:

1. Purpose of the research
2. Unusual matters or observations
3. Reasons for ceasing an experiment if an experiment came to a stop
4. Ideas for invention or research plans to implement the ideas
5. Discussions and conclusions

**Article 7 (Methods for Making Entries)** ① Entries into a lab notebook must be made in accordance with the following:

1. Entries into a lab notebook must be made in such a way that they have both informative and evidentiary value.
2. As for a research project for which a lab notebook is required to be kept, the principal investigator and the main participating researcher designated by the principal investigator must keep a separate lab notebook.
3. All research processes and results must be recorded accurately without any omission and in enough detail so that the research may be replicated by a third party.
4. Only facts shall be recorded in a lab notebook; no arbitrary modification of facts shall be allowed.
5. The original entries as well as any changes or additions to them (hereinafter referred to as “any and all records”) must be made in the space inside the page border of each page. The date of the entry must be recorded on each page, and the page must be signed by the recorder and the inspector.
6. The details of research activities must be directly recorded in a lab notebook.
7. If a page is partially filled with records and no more entries are going to be made into the page, a diagonal line must be drawn through the empty space below the existing records to eliminate the possibility of additional entries.
8. If an entry in a lab notebook is neither the description of work performed by the recorder nor his/her opinion, or if an entry includes a citation, the source of the information must be clearly indicated.
9. Not a single page shall be removed from a lab notebook to avoid arousing suspicion that the lab notebook originally contained disadvantageous information.
10. Items that may not be directly written in a lab notebook (e.g., photos, printouts from laboratory equipment, experiment results from another laboratory) shall be affixed and attached to the lab notebook in the order of dates; the recorder must sign across the border of an affixed item with the date of signature indicated so that it may not be replaced with another item at a later time.
11. If a recorder skips a page, he/ she must clearly write on the page that the particular page is left blank so that no other data may be recorded on the page.
12. If any additional entry is inserted into a lab notebook at a later time, the insertion must be clearly marked with the date of insertion indicated.
13. If part of an entry needs to be corrected, one must not use correction fluid. Instead, one must correct it by drawing a diagonal line across the part to be corrected so that the original contents prior to the correction may be seen. The person who makes the correction shall sign and record the date of correction.
14. If correction needs to be made for critical information, the reason for the correction must be clearly indicated, and the person who makes the correction and the inspector must both sign and record the date of correction.

② Detailed methods and formats required for making entries into lab notebooks other than those specified in the provisions of Clause 1 shall be determined separately.

**Article 8 (Inspection)** ① The inspector, which by default shall be the principal investigator, must periodically inspect the lab notebook kept by the recorder and sign it.

② A principal investigator may designate his/her superior or a senior executive in the University

administration as inspector in consideration of the nature of the research in question.

③ When necessary, the director of the unit in charge of research management must check the management status of the retained lab notebooks and report the results to the President of the University.

**Article 9 (Action Taken in Case of Absence)** ① If a recorder becomes absent for a prolonged period of time, the reason for broken continuity in recording must be indicated in the lab notebook.

② If an inspector becomes absent for a prolonged period of time, another inspector who shall inspect and sign the lab notebook must be designated.

**Article 10 (Ownership of Lab Notebooks)** ① Any and all lab notebooks created as a result of performing research and development activities shall be owned by the University unless specified otherwise in the research agreement for the project in question.

② Researchers may not own the original copy of a lab notebook. Any researcher wishing to own a copy of a lab notebook for utilization for future research in the same field must submit a statement of reasons to the unit in charge of research management and obtain approval.

③ A researcher who gets to own a copy of a lab notebook pursuant to Clause 2 may not arbitrarily transfer or sell the copy to a third party. If he/she wishes to let the copy read by other persons, he/she must submit a statement of reason to the unit in charge of research management and obtain approval.

**Article 11 (Return and Retention Management)** ① The recorder and the principal investigator shall take responsibility for recording information in a “lab notebook for ongoing research” and must keep it in a separate place with a locking device and manage it securely and confidentially to prevent disclosure to outsiders.

② Upon completion or suspension of a research project, the principal investigator must fill out a Request for Approval of Lab Notebook Return (Table 2, attached) and submit it to the unit in charge of research management along with all other materials related to the project including the “after-use lab notebook” and attached files.

③ The unit in charge of research management must convert any paper lab notebook from among the submitted materials into a read-only PDF/A file and keep the file separately.

④ The retention period for a lab notebook shall be 30 years from the date of preparation unless specified otherwise because of the special nature of the research in question.

⑤ If a researcher retires/resigns or ceases to participate in a research project, and no one is designated to take over the job, the researcher must return the lab notebook he/she has been keeping up to that point and all other related materials to the principal investigator; if deemed necessary for the retention and management, the lab notebook and the related materials must be returned to the unit in charge of research management along with a Request for Approval of Lab Notebook Return (Table 2, attached) even if the research and development project has not been completed.

⑥ A lab notebook retained by the unit in charge of research management may be accessed by those with access authority to that particular document. An access level to a document shall be assigned by the principal investigator according to the criteria provided in Table 1 (attached).

⑦ Notwithstanding the access authority corresponding to the access level of a document, the head of the department superordinate to that of those with access authority to a lab notebook may access the lab notebook in case of emergency, and the staff member who took over duties from the recorder may access the lab notebook in the absence of the recorder.

⑧ The unit in charge of research management must prepare a log to keep a record of events essential to the management of lab notebooks, such as records of document access and return and disposal of copies, etc.

**Article 12 (Loss and Taking-out)** ① A researcher must take great care that a lab notebook does not get lost; if a lab notebook does get lost, it must be reported immediately to the principal investigator in writing (email, etc.).

② If a loss as specified in Clause 1 does happen, the principal investigator must inform the unit in charge of research management of the loss of the lab notebook; he/she may also make a request for a replacement lab notebook to the unit in charge of research management.

③ In principle, a lab notebook may not be taken out of University premises. If a lab notebook needs to be taken out temporarily for a special purpose, however, prior approval must be obtained from the unit in charge of research management.

**Article 13 (Public Disclosure and Access)** ① The lab notebooks owned by the University shall be read and utilized within the University and may not be disclosed to an outside person or organization unless warranted by special reasons.

② If a lab notebook needs to be disclosed to an outside person or organization for special reasons, a researcher must fill out a Request for Disclosure of Lab Notebook (Table 3, attached) and submit it to the unit in charge of research management, which in turn shall decide whether to disclose it or not following a review by the Research & Industrial Relations Committee.

**Article 14 (Disposal)** ① The President of the University may dispose of a lab notebook whose retention period has expired and whose further retention is deemed unnecessary. The President may also dispose of a lab notebook even before the expiration of its retention period if the lab notebook is deemed unworthy of further retention because of changes in the technological environment.

② If the President of the University wishes to dispose of a lab notebook pursuant to Clause 1, a review must be conducted by the Research and Industrial Relations Committee prior to disposal.

**Article 15 (Management Department)** The unit in charge of research project management and the unit in charge of records management shall assume the responsibility for the management of lab notebooks.

### **Addenda**

1. (Effective Date) These guidelines shall be established and take effect on September 10, 2009.
2. (Mutatis Mutandis Application) Various rules and regulations of the University, rules and regulations of the agencies that provide research funds, and applicable laws shall apply *mutatis mutandis* to matters other than those provided for in these guidelines.

(Table 1)

Access Level and Authority

<b>Access Level</b>	<b>Level Criteria</b>	<b>Access Authority</b>
A	<ul style="list-style-type: none"> <li>• A lab notebook which is likely to have a major impact on the accumulation of know-how or the property value of the institution if disclosed to an outside person or organization or contains critical information that can be utilized by other researchers engaged in similar research if disclosed to outsiders</li> </ul>	The recorder and the principal investigator
B	<ul style="list-style-type: none"> <li>• A lab notebook which contains information about a technology with great property value as know-how of the research institution and access to which therefore must be restricted as much as possible for protection purposes</li> </ul>	Head of the department to which the recorder belongs
C	<ul style="list-style-type: none"> <li>• A lab notebook which contains information about know-how of the research institution that has some property value</li> </ul>	Head of the department superordinate to the one to which the recorder belongs
D	<ul style="list-style-type: none"> <li>• A lab notebook whose contents do not call for a separate protective action</li> </ul>	Staff members of the unit in charge of research management

(Table 2)

## Request for Approval of Lab Notebook Return

Please approve the following request for the return of a lab notebook:

Requester	Staff		Principal Investigator		Head of Academic Department	
Management Department	Staff	Director	Vice President	Provost & Executive Vice President	President	

### 1. Information on the Lab Notebook to Be Returned

Project No.					
Project Title					
Recorder		Position		Management Department	
Period of Record	~	Public Disclosure	Yes/No/Disclose to participating researchers /Disclose after review		
Reason for Return	Project completion/Issuance of a replacement lab notebook/Retirement or resignation/End of project participation/Other			Other Reasons	
Date of Return		Retention Period	30 years		

### 2. Other Matters

Special Remarks	
PDF File Conversion	Attachment ( )

※ If returning more than one notebook, write the information about the other lab notebooks in the Special Remarks field.

To create an electronic lab notebook, convert a paper lab notebook with handwritten entries into a digital format (e.g. PDF) and attach the file.

(Table 3)

## Request for Disclosure of Lab Notebook

Please approve the following request for the disclosure of a lab notebook:

Requester	Staff	Principal Investigator		Head of Academic Department	
Management department	Staff	Director	Vice President	Provost & Executive Vice President	President

### 1. Information on the Lab Notebook to Be Disclosed

Project No.			
Project Title			
Recorder		Department	
Method of Disclosure	Reading/Borrowing/Retention/Other	Access level	A / B / C / D
Purpose of Disclosure		Period of Disclosure	~
To whom it will be disclosed		Main Place of Storage	

### 2. Special Remarks

Special Remarks		
Attachment	PDF file	
	Other files	

※ If returning more than one notebook, write the information about the other lab notebooks in the Special Remarks field.

To create an electronic lab notebook, convert a paper lab notebook with handwritten entries into a digital format (e.g. PDF) and attach the file.

### 3. Access Level

Level	Level Criteria	Access Authority
A	• A lab notebook which is likely to have a major impact on the accumulation of know-how or the property value of the institution if disclosed to an outside person or organization or contains critical information that can be utilized by other researchers engaged in similar research if disclosed to outsiders	The recorder and the principal investigator
B	• A lab notebook which contains information about a technology with great property value as know-how of the research institution and access to which therefore must be restricted as much as possible for protection purposes	Head of the department to which the recorder belongs
C	• A lab notebook which contains information about know-how of the research institution that has some property value	Head of the department superordinate to the one to which the recorder belongs
D	• A lab notebook whose contents do not call for a separate protective action	Staff members of the unit in charge of research management