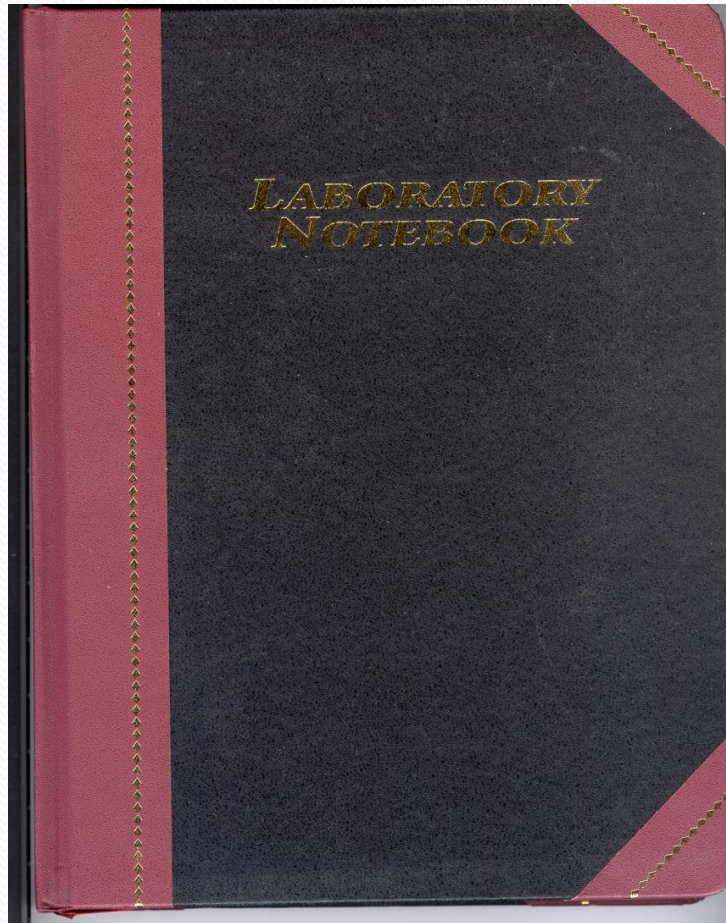


Notebook

Xingwei Wang

Lab. Notebook



Lab. Notebook

- Hard Cover Official Lab Notebook
- Numbered Pages
- 1st Page , Table of Contents
- Name & ID number
- Section number

Lab. Notebook

- about \$ 20.00
- 300 Numbered Pages
- Lots of 4 books $19.95 \times 4 + \$6.00$
- Office Supplies & Equip. Co.
- 1 800 636-3403
- Ask for Bonny (all credit cards)

PUT
YOUR
NAME IN
THE
BOOK

LABORATORY NOTEBOOK
PROJECT INFORMATION

COMPANY/INSTITUTION NAME _____

DEPARTMENT _____

LABORATORY NOTEBOOK NUMBER _____

PRIOR VOLUME NUMBER (If Any) _____

RESEARCHER _____

SIGNATURE _____

INITIAL ENTRY FINAL ENTRY
(Date of Assignment)


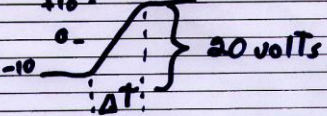
COMPLETE
or
CONTINUED IN LAB. NOTEBOOK NO. _____

ASSIGNED BY _____
(Project Leader)

Table of Contents

TABLE OF CONTENTS		
	NAME _____	
	NOTEBOOK NO. _____	
PAGE	ENTRY	DATE
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Put
everything
you do in
the book

38	PROJECT NAME <u>LAB. #1</u>	NOTEBOOK NO. <u>312</u>
<u>LM 741 Slew Rate</u>		
* <u>Spec.</u> <u>NON-INVERTING AMP.</u>		
Voltage gain <u>26 dB</u>		
Power <u>± 15 VDC</u>		
Output offset = <u>0 V.</u>		
* <u>Method of Test</u> : measure the voltage rise over a <u>20 volt swing</u> with step input		
INPUT	OUTPUT	
		
	ΔT	
	Slew Rate = $\frac{\Delta V_{out}}{\Delta T}$	
	$T = 1 \mu\text{sec}$	
	Voltage Gain dB = $A = 80 \log \frac{V_{out}}{V_{in}}$	
	Gain of <u>NONINVERTING AMP</u>	
	$A_{NL} = \frac{R_f}{R_{in}} + 1$	
SIGNATURE	<input type="text"/>	DATE <u>1/20 2008</u>
READ AND UNDERSTOOD	<input type="text"/>	DATE <input type="text"/>

Schematic with pin numbers,
part values ID'ed,
formals used to
get results

41 PROJECT NAME Lab 1 p.4 NOTEBOOK NO. 312

Square wave gen. AD712C

$C1 = 1\mu F$ IC = AD712C
 $R1 = 20K$
 $R2 = 47K$
 $R3 = 100K$
 $R4 = 10K$ Trim pot
 $C2, C3 = .01\mu F$ By Pass cap.

$C1$ & $R1$ selected for Timing

$$freq = \frac{1}{2RC} = \frac{1}{2 \cdot 20K \cdot 1 \times 10^{-6}}$$

$$freq = 850 \text{ Hz}$$

SIGNATURE _____ DATE 1/20 20 08
 READ AND UNDERSTOOD _____ DATE _____ RE

Test Setup & settings of equipment

42 PROJECT NAME Lab 1 p5 NOTEBOOK NO. 312

Scope setup

Ch 1: 5 v/div. Trig on ↑
ON output of square wave
+ Trig; sweep To 5µs/div.

Ch 2: 5v/div on output of
741 AMP pin 6

Sq wave | DUT — ch 1
ch 2

SIGNATURE _____ DATE 1/20 20 08
READ AND UNDERSTOOD _____ DATE _____ RE

Parts List with price & Reference of price data

43	PROJECT NAME	Lab 1, P6	NOTEBOOK NO.	312
Parts List.				
* <u>Sq. Wave Gen</u>				
IC = A0712 1.35 each/10				
R1 = 20K Ω 1/4w 5% .07 ea.				
R2 = 47K Ω 1/4w 5% .07 ea.				
R3 = 100K Ω 1/4w 5% .07 ea.				
R4 = 10K Trim Bourn 103T 2.05 ea.				
C1 = 1 μ F 50v 20% .32 each				
C2,3 = .01 μ F 50v 20% .25 ea.				
* 741 op amp crkt.				
IC = 741C .36 ea.				
R1 = 20K Ω 1/4w 5% .07 ea.				
R2 = 1K Ω 1/4w 5% .07 ea.				
R3 = 51 Ω 1/4w 5% .07 ea.				
R4 = 10K Trim pot 103T 2.05 ea.				
C1,2 = .01 μ F 50v 20% .16 ea.				
Vendor Ref. Digkey				
Data sheets National, Analog Devices				
Ap notes National - A15				
SIGNATURE		DATE		20
READ AND UNDERSTOOD		DATE		

Scope Pictures & Results

48 PROJECT NAME LoB1 p7 NOTEBOOK NO. 312

Scope
picture
full screen

Scope
picture
expander

Result: Voltage swing of 20 volts
Took 35 μ sec.
Slow Rate = $\frac{\Delta V_{out}}{\Delta T} = \frac{20v}{35\mu s} = .57v/\mu s$

Slow Rate = .57v/ μ s

SIGNATURE Student DATE 1/20 2008
READ AND UNDERSTOOD TA + score DATE _____ RE

The **LAST** page of the experiment will have the date, your name, and the TA's signoff with the **point value earned**
100 points / exp.

SIGNATURE	<i>Student</i>	DATE	<i>1/20</i> 20 <i>08</i>
READ AND UNDERSTOOD	<i>TA + score</i>	DATE	

Laboratory Notebook Guidelines

INTRODUCTION Using a Laboratory Notebook to record ideas, inventions, experimentation records, observations and all work details is a vital part of any laboratory process. Careful attention to how you keep your Laboratory Notebook can have a positive impact on the patent outcome of a pending discovery or invention.

Following are some overall recommendations to help you keep more efficient and accurate Laboratory Notebook entries. Remember, however, that these are simply a suggested set of guidelines. Only your attorney can supply the exact guidelines she would like you to follow to satisfy specific legal requirements. That is why we recommend that you consult your legal counsel.

Laboratory Notebook Guidelines

- **RECORDING DATA** Your Laboratory Notebook is a vital record of your work whether it is for patent purposes, legal records or documenting drug research under FDA guidelines. The Laboratory Notebook can help you prove:

Laboratory Notebook Guidelines

- Exact details and dates of conception
- Details and dates of reduction to practice
- Diligence in reducing your invention to practice
- Details regarding the structure and operation of your invention
- Experimentation observations and results
- A chronological record of your work
- Other work details

Laboratory Notebook Guidelines

Follow a few simple rules of thumb

- Always record entries legibly, neatly and in **permanent ink**.
- Immediately enter into your notebook and date all original concepts, data and observations, using separate headings to differentiate each.
- Record all concepts, results, references and other information in a systematic and orderly manner. (Language, charts and numbering systems should be maintained consistently throughout.)
- It is acceptable to make your entries brief. Always, however, include enough details for someone else to successfully duplicate the work you have recorded.
- Label all figures and calculations.
- Never, under any circumstances, remove pages from your notebook.

Laboratory Notebook Guidelines

- Start entries at the top of the first page, and always make successive, dated entries, working your way to the bottom of the last page.
- After completing a page, sign it before continuing to the next page.
- Make sure that you record the date of each entry clearly and unambiguously.
- Never let anyone other than yourself write in your Notebook (excluding witness signatures, discussed later).

Laboratory Notebook Guidelines

- **Remember to treat your Laboratory Notebook as a legal document:**
- It records the chronological history of your activities. The following guidelines should help you maintain the consistent and accurate entries needed for future legal purposes.
- Never leave blank spaces, and never erase or remove material you have added. Simply draw lines through any blank spaces at the same time you are making your entries.

Laboratory Notebook Guidelines

- **Do not erase errors.** Just draw a single line through any erroneous entry, then add your initials. Enter the correct entry nearby.
- You can **supplement your entries** with supporting material (e.g., test-result printouts and other documentation). But you must permanently affix the material onto a page in its proper chronological location.
- Never rely solely on any supplemental attachment. Always include your own entry describing the attachment and add any conclusions that you might draw from its substance.
- Occasionally, secondary sources might be too large or inappropriate to attach directly to your notebook. In this case, you can add all secondary sources to an ancillary record maintained precisely for this purpose. However, always remember to write a description of these secondary sources, clearly and unambiguously, in your notebook.

Laboratory Notebook Guidelines

- **DOCUMENTING PATENT ACTIVITIES**
- A primary purpose of a Laboratory Notebook is the support of documenting work that may be patentable. To support patent activities, it is necessary to provide clear, concise, chronological entries with specific dates. To rely on these dates, you must have at least one non-inventor corroborate that the events actually happened and that he or she understood your invention by signing and dating the "Disclosed to and Understood by" signature blocks.

Laboratory Notebook Guidelines

- Your Laboratory Notebook should help you document and prove:
- *Conception Date*--The date that you knew your invention would solve the problem.
- *Date of reduction to practice*--The moment that you made a working embodiment of your invention. *Diligence in reducing your invention to practice*--Diligence refers to your intent and conscious effort to make a working embodiment. You are not required to rush, or even to take the most efficient development strategy. But your Notebook must include details relating to your diligent activities. These are dates and facts that show what activities you have conducted to reduce the invention to practice, and when such activities were conducted.

Laboratory Notebook Guidelines

- *How to make and use your invention--provide documentation details sufficient to teach a colleague how to make and use your invention.*
- *The best mode of practicing your invention--document the best way to practice your invention.*
- A non-inventor colleague should corroborate each of these events/facts by signing the "Disclosed to and Understood by" on the relevant pages.