

How to write an IEEE Letter

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Microelectronics Letters Journals

IEEE Electron Device Letters
Applied Physics Letters

Available online at libraries.mit.edu

Click on VERA

(Virtual Electronic Resource Access)

Lab Report

~10 pages

Title Page

Abstract

Introduction

Theory

Methods

Results

Discussion

Conclusion

References

Letter (Ma, et al.)

3 pages

Title, Byline, etc

Abstract

Introduction (includes Theory)

Experiment

Results & Discussion

Conclusion

References

Focus the Letter: Purpose & Audience

Purpose of your letter:

To evaluate your fabrication process.

(Use MOS C-V to determine whether your process succeeded at creating a device with the desired characteristics.)

Letters Audience:

Familiar with microelectronics processing

May specialize in a different field

English may not be first language

Introduction

Background: Identify gap in current state of the field

Purpose of this work:

Your purpose: To evaluate your fabrication process

Experiment (methods)

Repeatability & context

Past tense, passive voice

You may give overview and use references for details, but describe ways process deviated from that in references.

Results & Discussion

Purpose: “to evaluate your fabrication process”

Measured vs. expected values--what does the difference tell you about the process?

Support your contentions.

Structure discussion carefully.

Introduce results as needed. You may not need to present all results, but you must discuss any unexpected results.

Conclusion

Summarize most important points.
Your purpose: to evaluate fabrication process.

Tables and Figures

Should be able to stand alone--use clear labels: define variables and give units of measure.

Use captions to point out what you want audience to notice.

Structure to make point clear

- Items to be compared should be placed near each other

- Remove unnecessary details, like grid lines

Title, Byline, Abstract, & References

Title: The title reflects the purpose: To evaluate your fabrication process

*Use of Capacitance-Voltage Measurements for
Characterization of a new poly-gate MOS process*

Should be specific enough to attract audience

Byline, etc: Give name, e-mail, subject number, professor, lab group, date

Abstract:

“The abstract should be limited to 50–200 words and should concisely state **what** was done, **how** it was done, principal **results**, and their **significance**.

The abstract will appear later in various abstracts journals and should contain the most critical information in the paper.”

—IEEE Information for Authors

References: Use IEEE style.

Appendices

Appendix A: Results

Graphs showing the raw data (I-V and C-V curves)

A table summarizing all measured & calculated parameters for easy comparison. See Professor Schmidt's slides for the data to include.

Appendix B: Calculations

Show how you obtained the calculated results in Appendix A.

Drafting your report

Allow time over several days.

Organize data, compare measured to expected, make and test conjectures

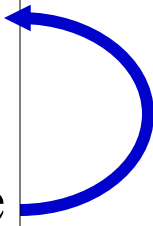
Make a writing plan

Write

Sleep

Read

Revise



Print & proofread

Writing Quality

Concise, but don't drop articles

“The reason the film was thinner than expected was because...”

Better: “The film was thinner than expected because...”

“The annealing step caused the resistivity to decrease.”

Better: “Annealing decreased the resistivity.”

Easy to read & understand

Goal is not to put words on paper but to communicate to audience.

Read “The Science of Scientific Writing” by Gopen & Swan

Writing Help

“The Science of Scientific Writing” by Gopen & Swan

A Google search will generate many hits.

The Writing Center

web.mit.edu/writing

The Mayfield Handbook of Scientific and Technical Writing

3.155J/6.152J Writing Tutors