How to write an IEEE Letter

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Writing Instructors:
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Microelectronics Letters Journals

IEEE Electron Device Letters
Applied Physics Letters

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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

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