

Guidelines for Physical Electronics Paper

Topic: The Common-Emitter Amplifier

Length: 4-6 Pages

Format: similar to articles in *Review of Scientific Instruments*

- Title, author, institution
- Abstract
- Introduction (motivation, background, context)
- Body
 - Theory
 - Experimental Setup
 - Results
 - Discussion
- Conclusions
- Acknowledgments
- References

Style:

- AIP Style Manual: <http://www.aip.org/pubservs/style/4thed/toc.html>
- see sample article(s)

Due:

- Rough draft: Friday 30 October
- Final draft: Friday 13 November

Common Comments on Electronics Paper Drafts:

Title:

The title should accurately indicate the topic of the paper, but also suggest the interesting take on the subject that makes the paper of unique interest.

Abstract:

What is the purpose of the abstract?

The abstract should be a condensed version of the paper. It is not the same as the introduction to the paper. The abstract should summarize the important results, including where possible, the quantitative results that are presented in the paper. Abstracts are made available, separate from the paper, in order to provide a brief summary and give potential readers enough information to determine whether they should obtain and read the entire paper.

Introduction:

The introduction serves some or all of the following functions:

1. It captures the reader's interest in the subject by connecting the work presented to applications or topics of broad interest.
2. It motivates the importance of the work presented and previews its novelty.
3. It sets the historical context for the work, by pointing out how it is similar to or (more importantly) different from past work in the same area.
4. It previews the organization of the paper. This purpose is not as important for a short paper, but can be helpful for longer papers with more complicated logical development.

Body of the Paper:

Things to be aware of and check for the revision:

- Don't present the work as a chronological sequence of measurements. The paper is not a lab notebook. Consider the main points you want to convey and organize the presentation in a logical order that emphasizes those points.
- Sometimes separate sections on theory, experiment, and results is an appropriate organization, but not if it leads to excessive redundancy in the presentation. You might find that organizing the paper by topics (quiescent operating point, gain, frequency response, etc.) makes it flow better.
- Does each paragraph have a topic sentence?
- Does the description of the work include enough important details that someone else could reproduce the experiment?
- Does the description include too many unimportant details that are not essential to understanding and/or reproducing the results?
- Are speculative and/or judgmental statements confined to the discussion or conclusions?

Figures, Tables, and Equations::

- Each figure (don't use 'graph' to refer to data displays) must have a number (and caption) and be referred to explicitly in the text. Refer to figures with the abbreviation, Fig. 1, unless you are starting a sentence, in which case you spell out Figure.
- Titles are not usually included in figures since the caption explains the content of the figure. Also, Kaleidagraph fit results should be separated from the figure and presented separately in the text, in a table, and perhaps in the caption.
- Tell your reader what you want them to get out of each figure. Don't let the figure speak for itself.
- Tables can be used to present lists of quantitative results, but must be set off separately, have a caption, and be referred to explicitly in the text.
- Some equations can be incorporated directly into the sentence in which they are presented. More often, it is better to place an equation on its own line (centered). If you refer to the equation in the text, then it should have a number identifying it. Even equations that are on their own line are part of a sentence and should be punctuated with a comma or period depending on whether the sentence continues after the equation.
- Include only the important steps in a derivation. You can assume that your reader can fill in the missing steps.

Discussion and/or Conclusions:

The conclusion serves some or all of the following functions:

1. It recaps the most significant results (quantitatively where appropriate!).
2. It explores the wider implications of the results.
3. It suggests avenues for future work that might improve upon or extend the work discussed in the paper.

References:

End note references should be numbered in the order in which you first refer to them. Each reference must be identified at the location in the text where the referenced work is used.