

Writing Style

...neither Faulkner....

“Then he told me to have a look in the old opera house, where somebody had stored a lot of papers and junk out of the old Merchants’ and Farmers’ Bank when it failed, so I dodged up a few more alleys so Earl couldn’t see me and finally found old man Simmons and got the key from him and went up there and dug around.”

(from The Sound and the Fury)

... nor O’Brien.

“Paul Berlin remembered separate things that refused to blend together. Whistling on ambush. Always chewing gum. The smiling. Fat, slow, going bald, young. Rapt, willing to do the hard stuff. And dumb. Dumb as milk. A case of gross tomfoolery.”

(from Going after Cacciato)

Not technical manuals, either

- Bulleted lists of phrases, laid out in a manner suitable for a slide presentation should not replace complete and correct sentences and paragraphs.
- Technical jargon and acronyms should be explained at first usage.
- Incorrect, colloquial, or very new usage, although common in technical fields, should be avoided in formal papers. Rely on the more traditional usage of words. For example, use “input” as a noun but not a verb in formal writing.

- Scientific arguments are generally made objectively and unemotionally.
- Try to convince the reader that you have researched all sides of the scientific issues and are basing your presentation and arguments on them in an objective way.
- Be skeptical of information from parties (especially companies) with vested interests in the issue.

Some Important Elements

- **Title and Authorship.** Often provided on a cover page.
- **Introduction.** Set out the overall goal of the paper and state your thesis. Sometimes in science writing, the thesis is simply to survey a scientific subject and explain it to the reader.

- **Background.** As part of the introduction, you often need to explain enough about the background to enable the reader to follow your development of the subject.
- **Development of the subject.**
 - Present the research results in a systematic manner.
 - Include the full range of major investigations.
 - If you have a point of view to present, you need to acknowledge those studies that do not support it, as well as those that do.

- **Conclusion and Summary.**
 - Don't just quit! Pull the various threads of the paper together and make sure the reader gets the "take home" message.
 - Why does this paper "matter"?

- **Endnotes**

References

- Use lots of references.
- Do not quote often; instead paraphrase and cite.
 - Quotes do not convince the reader that you understand the subject.
- For background material (e.g. basic physics or chemistry), cite an introductory level chemistry or physics text and paraphrase its explanation.

- Most often scientists use endnotes. You should do the same. Use one list of endnotes for your entire bibliography and works-cited items.
 - ...was observed by Johnson.¹²
 - ...was observed by Johnson (12).
- See chapter 30 of *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*, for discussion of Endnote forms and use.
- Use the Citation-Sequence System of endnotes rather than the Name-Year System. See the attached papers for examples.

The Chemistry of Solid-State Electronics
E. YABLONOVITCH

REFERENCES AND NOTES

1. W. Shockley, *Electrons and Holes in Semiconductors* (Van Nostrand Reinhold, New York, 1950).
2. In present-day semiconductor lasers, E_p does not extend all the way down into the valence band as shown in Fig. 1, penalizing efficiency; see E. Yablonoivitch and E. O. Kane, *IEEE J. Lightwave Technol.*, **LT-4**, 504 (1986).
3. R. N. Hall, *Phys. Rev.*, **87**, 387 (1952).
4. W. Shockley and W. T. Read, *Phys. Rev.*, **87**, 392 (1952).
5. M. S. Dresselhaus, *Phys. Rev.*, **100**, 580 (1951).
6. R. E. Dool, E. H. Snow, A. S. Grove, *Semicond. Prod. Solid State Technol.*, **9**, 22 (1964).
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9. M. A. Little, M. G. Anderson, C. M. Butler, *Appl. Phys. Lett.*, **40**, 1199 (1982).
10. G. C. Onyon, R. M. Bullock, J. L. Gerardo, *Appl. Phys. Lett.*, **41**, 172 (1982).
11. M. Taniuchi, *Appl. Phys. Lett.*, **40**, 88 (1982).
12. F. L. Carter, Ed., *Semiconductor Devices* (McGraw-Hill, New York, 1982).
13. M. R. Pinsky and J. H. Spector, *Appl. Phys. Lett.*, **36**, 588 (1979).
14. E. D. Mauer, *Proc. IEEE*, **67**, 432 (1979).
15. Y. S. Shyue, Y. L. Chang, C. C. Chang, T. Gmitter, T. S. Bright, *Phys. Rev. Lett.*, **57**, 249 (1986).
16. E. Yablonoivitch, D. J. L. Jones, C. C. Chang, T. Gmitter, T. S. Bright, *Phys. Rev. Lett.*, **57**, 249 (1986).
17. E. L. Hedges, R. M. Tromp, J. E. Dimmock, *Appl. Phys. Lett.*, **56**, 1972 (1986).
18. E. L. Hedges, *Appl. Phys. Lett.*, **52**, 2022 (1988).
19. F. Sauer and J. M. Woodall, *J. Appl. Phys.*, **48**, 3004 (1974).
20. M. Knapik, M. Spector, E. Yablonoivitch, *J. Opt. Commun.*, **48**, 277 (1979).
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22. E. Yablonoivitch, T. Gmitter, T. J. Gmitter, C. F. Yan, R. Blau, *IEEE Phot. Technol. Lett.*, **4**, 41 (1982).
23. L. Van Hove, W. D. Rusk, M. Van Rossum, G. Breglio, *Electron. Lett.*, **20**, 136 (1982).
24. E. R. Brown, J. F. Kline, J. A. Lane, *York City for Science Division Report* (1989).
25. I thank Dr. A. Agazzi, M. Spector, and R. Francis for carefully editing the manuscript.

All 25 references appear in a single list at the end of the paper.

Every Reference in the list is cited in the body of the paper with its number.

The sequence here is the order in which the sources are cited for the first time in the paper.

The Chemistry of Solid-State Electronics
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REFERENCES AND NOTES

1. W. Shockley, *Electrons and Holes in Semiconductors* (Van Nostrand Reinhold, New York, 1950).
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3. R. N. Hall, *Phys. Rev.*, **87**, 387 (1952).
4. W. Shockley and W. T. Read, *Appl. Phys. Lett.*, **1**, 3 (1952).

Some endnotes provide explanatory information instead of references.

The Chemistry of Solid-State Electronics

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The idea of having two distinct quasi-Fermi levels or chemical potentials within the same volume of material, first emphasized by Shockley (1), is a rather striking one. It has deeper implications than the somewhat similar concept of two distinct effective temperatures, which can occur, for example, in nuclear spin systems that have weak spin-lattice coupling. The semiconductor energy level structure is all illustrated in Fig. 1, where E_{F_n} is the quasi-Fermi level or chemical potential of electrons in the conduction band and E_{F_p} is the quasi-Fermi level for electrons in the valence band. We can immediately

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3. R. N. Hall, *Phys. Rev.* 87, 387 (1952).
4. W. Shockley and W. T. Read, *ibid.* n. 835

The first citation of Reference 1, on page 347

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progress of solid-state electronics. The need for surfaces of extremely high chemical quality can be appreciated from Fig. 2A, an original drawing (1) of the first

Note that in this system repeat references to the same source usually use the same endnote. An exception is with books or very large papers, where some clarification is needed to find the information. See Refs 1 and 4 in this list.

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2. In present-day semiconductor lasers, E_{F_n} does not extend all the way down into the valence band as shown in Fig. 1, penalizing efficiency; see E. Yablonovitch and E. O. Kane, *IEEE J. Lightwave Technol.* LT-4, 504 (1986).
3. R. N. Hall, *Phys. Rev.* 87, 387 (1952).
4. W. Shockley and W. T. Read, *ibid.*, p. 835.
5. M. M. Azalla, E. Tammenbaum, E. J. Scheibner, *Bell Syst. Tech. J.* 38, 749 (1959).

The second citation of Reference 1, on page 347

- To cite general works (e.g. texts) that contributed broadly to your understanding, refer to them in the introduction or background section with citations.
 - The basic mechanics presented here is presented in several texts on the subject.²⁻⁵
 - The discussion presented below follows that of Little *et al.*⁶
 - Previously, this general subject has been well reviewed by several authors (7-10).

- Figures or Tables lifted from other works should be given credit on the figure or at the bottom of the table.
- Try to move from WWW sources to “real” printed ones. This is often possible, and almost always preferable.
- Notable exceptions to the above are “official” web publications such as government documents.

- **When you use a WWW source as a reference, you are to print the referenced pages and attach them as an appendix to your paper.**
- **It is your job to evaluate any source you use. In the case of scholarly journals, this may be straightforward. However, in case of general purpose publications, web publications, etc., you need to convince the reader that your referenced source is authoritative.**

- Citation Style**
- All works listed are directly referenced from the text.
 - A single list of endnotes. (not footnotes)
 - Use a style for the endnotes that is similar to:
 - that given in CBE Manual
 - the journal Science
 - the IBM Journal of R&D papers on our reserve list.

Odds and ends...

- Use formal grammar (no exceptions).
- Make judicious use of figures, equations, and tables. - not as space fillers, but as aides to communication. .
- Equations may be neatly entered by hand.

Odds and ends (with Heath Refs)

- Sentence fragments -30a
- Comma splices (run on) -30c
- Spliced by conjunctive adverb (e.g. however) - 30c
- Fused sentences - 30c
- Subject/verb agreement - 26a
- Incorrect capitalization -38b

Odds and ends (with Heath Refs)

- Pronoun/antecedent reference - 12a
- Page numbers -21
- Use of commas - 32
- That/who G21
- That/ ,which G21
- There, their, they're G22
- Amount/number G4

Odds and ends (with Heath Refs)

- Who/whom -27b
- Effect/affect -G2
- “Impact” is not a verb -G12
- Write out numbers less than one hundred -38c
- Its/it’s -G3
- Use of semicolon -33a
- two,to,too - G22
