

The Most Common Problems in Technical Papers

PROBLEM	CURE
1. Indicative rather than informative abstract.	The abstract should inform the reader of the key results, not merely indicate the scope of the paper.
2. Introduction not sufficiently broad so that all readers of the target journal can understand the problem studied.	Start paper with general statements defining the field and the problem so that anyone normally reading the target journal knows at least what you are talking about.
3. Introduction does not contain a 'gap' sentence, or the gap sentence is fuzzy.	State <u>explicitly</u> in a separate sentence what wasn't done, or done improperly, in the previous literature, that justifies doing and publishing the current research.
4. Objective not clearly stated.	State the objective in a sentence beginning "The objective of this work was"
5. Insufficient detail in the method and apparatus sections, or in the derivation of equations.	Give sufficient detail so that another skilled investigator can exactly duplicate your results.
6. Mixture of 'fact' and interpretation	Always organize your presentation with (1) what you did, (2) what you got (i.e. results), and (3) interpretation, in that order. Separate interpretation from facts, by placing interpretation in a separate sentence, or better a separate section (i.e. discussion). Use appropriate words to indicate lack of certainty and modesty in presenting interpretation.
7. Bad organization	Separate into separate sections (1) what you did (i.e. method), (2) what you got (i.e. results), and (3) why (i.e. discussion). Ask yourself after each sentence "Did I give the reader ALL the information he needs to understand this sentence someplace previously in the paper?"
8. Undefined symbols, changing nomenclature	Make a nomenclature table for your own use. List and define each symbol. List each page where a symbol appears. List the page you defined the symbol. During proof-reading, check each symbol against the table.
9. Rabbits pulled from the hat.	Introduce all results in the results section. No new 'results' in the discussion or conclusion. Make sure all conclusions firmly supported by results, and interpreted in discussion.
10. Bad graphics	Label all axes with name and units. 'Heads-up' presentation[1]. Blind man's rule [2]. Illiterate man's rule[3]. Use large enough letters, symbols, and line width.
11. Poor paragraph organization	No 1-sentence paragraphs. Lead sentence of par. introduces topic, last sent. presents major point or conclusion. Each sentence follows logically from preceding sentences
12. Plural nouns used as adjectives	Use only the singular form of a noun as an 'adjective' in 'compound nouns': velocity distribution, not velocities distribution .
13. Awkward sentences	Use natural form of verb (not " measurements were made of the voltage" – instead "the voltage was measured"). Mostly use natural English word order: subject, verb, predicate.
14. Research question not answered in the Conclusions	Explicitly answer the research question in the Conclusions.

[1] '*Heads-up*' presentation. Where possible, give as much as the information needed to understand a figure directly on the figure (rather than in the caption or text).

[2] *Blind man's rule*. Key results appearing in figures and tables should be described verbally in the text so that a blind man, who only hears the text, understands the paper.

[3] *Illiterate man's rule*. Figures should be self-explanatory, so that an illiterate (in the language of the paper) can understand the figure without reading any text.