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How to Write a Good Scientific Paper: the Cover Letter

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This is the fifth in a series of editorials covering all aspects of good science writing.

Whenever a manuscript is submitted to the *Journal of Micro/Nanolithography, MEMS, and MOEMS* (JM3), the manuscript first goes to me, the editor-in-chief. And the first thing I do is read the cover letter that accompanies the manuscript. Thus, the cover letter creates the first impression that I have of the manuscript. Is this important? Of course I think it is, but let me explain why the author(s) should think it is important as well.

When I look at a submission my first decision is whether I think it would be productive for the manuscript to go through the peer-review process, or whether it should be declined without review. It is the cover letter that gives me the information I need to make this first important assessment (or at least it should). If I believe the manuscript merits review by JM3, my next choice is which senior editor to send it to, based on a match of editor expertise to paper topic. The senior editor will then repeat my exercise, deciding whether to decline without review, and if not, which associate editor to assign it to. Finally, the associate editor will again read the cover letter and could again decide to decline without review. If the associate editor believes the material merits review, he or she must find the right reviewers for the manuscript. Each editor might look at the full manuscript, and may even read it fully and carefully. But it is the cover letter that is the first and most important indicator that each editor looks at when making these decisions.

Why might a manuscript be declined without review? There are three basic reasons. First, the paper may not fit within the scope of our journal. I have declined perfectly good manuscripts because they would be better served by being published in a different journal (if possible, I try to recommend a more appropriate journal and encourage the authors to try there). Another reason to decline without review would be if the manuscript's English is poor. I have great respect for anyone who writes a paper in a language that is not their first, native language—this is something I am totally incapable of doing. But if reviewers have too much difficulty understanding the meaning of the sentences, they will not be able to adequately review the technical merits of the work. I won't waste the precious time of our volunteer reviewers unless I believe that the content of the manuscript is clear enough to understand. If I decline for this reason, I encourage the authors to have the manuscript edited by a native English speaker (or optionally use the Editage commercial service; see spie.org/EnglishEditing) and then resubmit. Finally, an editor may decline a paper without review if it is clear that the paper is either not novel or not significant.

Thus, the author's goal in writing the cover letter should be obvious: provide enough information to ensure that the manuscript is not inappropriately declined without review. With this in mind, here are my views on how to write a good cover letter.

1 Structured Cover Letter

A cover letter is formatted like a standard business letter and addressed to the editor-in-chief (me). It should be succinct and focused—not longer than one page, containing everything needed for the editors to make the "decline/send out for peer review" decision.

I am a big fan of structured abstracts,[1] where the important topical areas needed in the abstract are formalized by adding subheadings and subsections (the "structure"). Borrowing from that idea, here is my advice on how to write a structured cover letter. Start with a standard business letter opening/greeting. Then, in the body, supply the following structure, with one or at most two sentences for each topic:

Manuscript information: Title of the submitted manuscript and type of article (letter, regular paper, special section paper, review, tutorial, or communication). If submitting to a special section, mention the special section name.

Problem being addressed: What issues led to this work? What gap is being filled? What is the broader context for this work?

Novelty of the work: What is new here, not previously published? "To our knowledge, this is the first report showing. . . ."

Significance of the work: Why is the novel content mentioned above important? What is the potential impact to the field?

Fit to this journal: Why does this work belong in and appeal to the readership of this journal? How will publication of this manuscript benefit the journal? (Be familiar with the JM3 journal scope, found at nanolithography.spiedigitallibrary.org.) Mention if this paper builds on a previous paper published in this journal, or is otherwise directly linked to a paper published in this journal.

Double publication: "This manuscript has not been previously published and is not currently in press, under review, or being considered for publication by another journal." For a submission based on an SPIE conference proceedings paper, list the proceedings volume and paper number (see spie.org/x85029.xml#Proceedings for details about submitting an SPIE conference paper to JM3).

Author approval: "All authors have read and approved the manuscript being submitted, and agree to its submittal to this journal."

Finally, end with a standard letter ending, including the name and contact information for the corresponding author.

Things to avoid in a cover letter include statements that exaggerate or overstate results, conclusions that are not supported by the data reported in the manuscript, sentences repeated word-for-word from the manuscript text (please don't copy and paste the abstract!), and too many technical details. Remember that the cover letter should be brief—say only what is most important.

While I like the format of a structured cover letter, authors are free to use a more conventional prose approach. Be sure to include all of the information outlined above. Some journals also request that recommendations for reviewers for the manuscript also be included in the cover letter. For JM3

those recommendations can be made during the online submission process, and so their inclusion in the cover letter is not needed.

2 Conclusions

The SPIE author guidelines state that "Authors are required to include a separate cover letter with their submission explaining the significance and novelty of the work, the problem that is being addressed, and why the manuscript belongs in this journal." This requirement is not arbitrary—it is an important part of the manuscript submittal and review process. A well-crafted cover letter will smooth the review process by making sure that an inappropriate "decline without review" decision is not made, and help to find the best editors and reviewers for the manuscript, thus speeding it through the process and producing the most desirable outcome. Considering all the effort that goes into preparing a manuscript for publication, it would be a shame for that manuscript to receive less than a fair shake simply because of a poorly crafted cover letter.

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Editor-in-Chief

References

1. C. A. Mack, "Editorial: How to write a good scientific paper: title, abstract, and keywords," *J. Micro/Nanolith. MEMS MOEMS* **11**(2), 020101 (2012).