

Publishing at IMS—Part II

James C. Rautio

In the June issue of the magazine, we talked about the rationale behind the IEEE Microwave Theory and Techniques Society (MTT-S) International Microwave Symposium (IMS) double-blind review system, where not only are the reviewers not known to the authors but the authors are not (nominally) known to the reviewers. This reduces the chance of any bias on the part of the reviewer for or against any particular author. Nevertheless, it also makes it harder for the reviewer to catch double publication. Now we look at what you can do to increase chances of acceptance.

The first thing is to think about the task facing the reviewer. In the various subcommittees in which I have participated, we have had to review anywhere from 40 to 90 papers. This is usually done in the final week of the year. Just like you, all the reviewers on the committee are extremely busy with both personal and professional commitments. The end of the year might be a little less busy. On the other hand, a lot of commitments that can be moved here are indeed moved here, taking up space and time. Think about your own schedule. How much time could you put into carefully reviewing each of 40 or more technical papers, one after another? Also, keep in mind that while you are an expert in your specific field, there are going to be papers that are in fields adjacent to your field. Those papers will be harder to review.

Let's do a time estimate, say 15 min per review. That is ten hours minimum, which is a lot of time to take away from family and work. We could demand more time, but remember, these people are unpaid volunteers. In fact, with travel expenses to the MTT Technical Paper Review Committee (TPRC) meeting,

they actually have to pay for the privilege of being a reviewer.

When we realize the severely time-constrained situation faced by our reviewers, we can work to increase the chances our paper will be accepted. (Yes, "our" paper, pretend I am sitting right here helping you write it!) To short circuit any chance that someone will cite me for sneaking in a double publication, I want to acknowledge that much of the following is adapted from a write-up I did as TPC chair for ICUWB2012, with permission.

Just like at IMS, we decided to judge ICUWB2012 papers based on the following:

- Originality—Is this something new and distinct from previous work?
- Clarity—Is it easy to understand?
- Interest—Will our (usually sleep-deprived) audience sit up and pay attention?
- Quantitative—Is there quantitative validation of results? Is the work well-formulated?

The four categories are equally weighted. Please keep these criteria in mind. As mentioned above, IMS reviewers have a lot of papers to review. Make it easy for the reviewers to give high scores in each area, and we will be more likely to have our paper accepted.

For example, the introduction should make it clear that our work is original by citing the work of others

This article was originally published on RF Globalnet (www.rfglobalnet.com) in 2012 as a three-part guest column series.

James C. Rautio (rautio@ieee.org) is with Sonnet Software, Inc.

Digital Object Identifier 10.1109/MMM.2013.2259403

Date of publication: 11 July 2013

and specifically stating how it builds on and is distinct from prior work. While our reviewers (and our future audience as well) are very knowledgeable, they might not be experts in our exact specific area. Please make life easy for them and they will in turn treat us well. The most successful papers allow the reviewer to give full credit for this item within 1 min of starting to read. If the reviewer started out with 15 min for our paper, we now have 14 min left to make our case.

As I just indicated, time is critical. So, let's keep the introduction short. Give just enough information so the reviewer is happy to give full credit for originality and has some idea of what we are doing. If the introduction is a historical tome taking a full page and 10 min of the reviewer's time, we now have two pages (assuming a three-page limit) and 5 min of the reviewer's time left. That is begging for rejection.

Let's keep the conclusion short and concise, too. Pretend that we have a really busy reviewer who has only 30 s and will read only the conclusion. In two or three sentences, we need to convince her that we have some really fantastic stuff that is worth accepting. Imagine that the only thing another reviewer reads is the figure captions. You should make sure our figure captions, all by themselves, one after another, tell a short, sweet story. Captions like, "These are the results," are opportunity lost. The caption, "The 7–20-GHz rejection band of greater than 60 dB achieves previously unattainable results," makes me want to know more! Real reviewers will indeed read our entire paper, but they might do it conclusion first, or captions first, or in some other way. Let's make sure they all get a good story right at the start, as fast as possible.

For clarity, become familiar with writing-style issues. Repeatedly go through and remove unneeded verbosity. Have a friend do likewise. Look for words to remove that leave overall meaning unchanged. Write in active voice, "We demonstrate world-class results." Do not write, "World-class results were seen." Use present tense whenever possible; this makes our paper immediate and important. Do not use tense to indicate location. Write, "Results are described below." Do not write, "Results will be described," which actually suggests we have not yet completed the paper. If you are not a native English speaker, consider asking a native English speaker to look over our paper.

Make sure all main points are clearly stated and flow smoothly. Use large, easy-to-read fonts in all figures. Label all axes and curves (including units in parentheses, not brackets). Make sure a black and white copy is just as useful as a color copy. Put figures at the top of the column, not in the middle or bottom. To entice readers, try to have an especially attractive figure on page 1, at the top of column 2. Read the "IEEE Style Manual" [1]. Much of the "IEEE Information for Authors" [2] should be applied. Potential readers will have an easier time finding our paper when we use IEEE key words [3] and

list all key words in alphabetical order. Help readers by running our paper through the IEEE reference checker [4]. Read the classic *Elements of Style* [5] by Strunk and White. Absolutely, above all else, start with the paper template available on the IMS website. Read it and follow the instructions. Please don't make up your own font types, sizes, or paragraph formats.

The introduction and conclusion are good places to cite why our paper is of interest to our community. Fully and clearly described solutions to practical problems readers are likely to see are far more interesting than papers that were written primarily to impress the reader and are otherwise "content free."

Topic areas are incredibly important. If the topic is measurements, make sure we have some measurements included, with error analysis, and an application focus is emphasized. If the topic is electromagnetic analysis, a few critical equations and an overall description of the theory are a good idea. If we claim high EM analysis accuracy, an error analysis is required as well. If we cite superior EM analysis speed, include timings.

Be absolutely sure to select exactly the right area for submission. If our paper goes to the wrong subcommittee and the chair does not catch it before reviews begin, chances for acceptance are close to zero, no matter how good it is. If there is any doubt at all, ask a few colleagues. Selecting the right subcommittee/technical topic is probably the most important single thing we need to do to gain acceptance. Again, if we make life easy for our reviewers, they will be kind to us in return.

As for quantitative, keep in mind that we are all engineers. Our audience needs numbers. Validation by comparison with results from other sources is important. Don't waste time with the ubiquitous "good agreement" statement. Instead try, "Our results show an error of less than 1.6%." Don't say anything hilarious like, "Our accuracy is 1.6%." If you do not know the exact answer, which is often the case, use the word, "difference," instead of "error." Avoid warm, fuzzy (and useless) statements like, "We clearly have very accurate results." Such statements take up space uselessly. After all, would anyone ever publicly describe their results as mediocre or bad? In fact, I find that such statements are usually made if the results are actually pretty bad. If the results really are good, we would not have to tell our readers about it, they would see it for themselves.

Let's pretend that, out of everything, our reviewer will only look at the last figure or table in the entire paper. Pretend an additional constraint: He will look at it for only 10 s and then make a final decision. Make that figure really simple and easy to read. If we want to convince the reviewer that our analysis is accurate, our conclusion should be obvious instantly, no thinking required. If we want to convince the reviewer that our results are world class, clearly show the best the

world has offered to date. Include dozens of curves in one big heap of spaghetti that must be untangled by the reviewer, and all is lost. And don't forget, these reviewers are smart. Leave out some recent world-class results only if we are looking for a guaranteed rejection.

Oh, and one final thing. I did not actually write any of "our" paper. You have written it. Nor did I do any of the research in our paper. So while I sincerely hope that I have been able to help in writing our paper, it would be most improper to list me (or anyone else in a similar situation, even if they are the über president or whatever of your organization) as a coauthor. But of course, anyone who did help you with the writing or the research really must be included as a coauthor, or at least include them in the Acknowledgment (note: never "Acknowledgments") section. Acknowledge those upon whose work we build on by including a reference to their work, as mentioned above. It is free. It helps make the leaders in our field feel friendly and supportive towards us. We want that. After all, the RF/microwave field is a small, tightly knit group.

Everyone knows everyone else. Everyone talks to everyone else. "What goes around, comes around," as they say. Always acknowledge those who help us, and we will find our kindness rewarded many times over. In keeping with that spirit, I should mention that both Fred Schindler and Leonard Hayden thoughtfully provided several very good suggestions for this piece.

In the next column, I focus on presenting quantitative data and making it easy for the reviewer to get a good "feel."

Reference

- [1] IEEE editorial style manual. (2010, June 3). [Online]. Available: <http://www.ieee.org/documents/stylemanual.pdf>
- [2] Transactions/Journals Department. (2007, Mar.). Information for authors. IEEE Periodicals. Piscataway, NJ. [Online]. Available: http://www.ieee.org/documents/info_authors_kit.pdf
- [3] 2013 IEEE Taxonomy. (2013). [Online]. Available: http://www.ieee.org/documents/taxonomy_v101.pdf
- [4] The IEEE Reference Checker. (2013). [Online]. Available: <http://refassist.ieee.org/action/showAuthorLogin>
- [5] W. Strunk and E. B. White, *The Elements of Style*, 4th Ed. White Plains, NY: Longman, 2000.



IEEE Open Access

Unrestricted access to today's groundbreaking research via the IEEE Xplore® digital library

IEEE offers a variety of open access (OA) publications:

- Hybrid journals known for their established impact factors
- New fully open access journals in many technical areas
- A multidisciplinary open access mega journal spanning all IEEE fields of interest

Discover top-quality articles,
chosen by the IEEE peer-review
standard of excellence.

Learn more about IEEE Open Access
www.ieee.org/open-access

