



## Reviewing Papers

There is a crucial link between reporting an advance in technology and its publication in this journal. That link is the reviewer of the paper. Were it not for the considered and informed reviews that *Optical Engineering* and other journals receive we would be dead in the water.

How are the reviewers chosen for a paper that is submitted for publication? After the paper is logged in at SPIE and assigned an accession number (that little OE 030... that appears below the abstract on all papers), the journals staff sends me e-mail telling me the paper needs to be assigned an editor. Based on the topic of the paper and the range of expertise of the members of our Board of Editors, I assign an appropriate Associate Editor to oversee the review of the paper and take any actions needed to accept or decline to publish the paper or request revisions.

It is then the responsibility of the Associate Editor to assign the reviewers to the paper. In some instances he or she may call on a colleague who they know could provide a good evaluation of the paper. However, if they do that very often, they will soon find their circle of colleagues getting smaller year by year. Sometimes authors listed in the paper's reference section will be asked. But the major source of reviewers is an internal database of previous authors and interested professionals who have filled out a reviewer form for SPIE. Based on keywords, reviewer affiliations, and in some instances, name recognition, an editor will choose a number of persons to review the paper, listed in the order in which they should be requested.

Until this month, the members of the SPIE journals staff contacted the potential reviewers to see if they were able to review the paper. But beginning this month, with the introduction of an online reviewing system, Peer X-Press, the Associate Editor will choose the reviewers and the requests to review will be generated automatically.

When I get a paper to review, a number of reactions tend to be generated—all at once. They range from “Hmm, this looks interesting” to “Where am I going to find the time to review this paper?” Some fraction of the scientists and engineers that are asked to review dismiss the request out of hand. That is too bad. Those of us in the

field of research have an obligation. We publish our results to disseminate our discoveries and gain recognition for them, and therefore reviewing papers represents a response in this great technical conversation that is carried on by our community.

When you accept the responsibility to review, you take on some obligations beyond responding in a timely manner. For one thing, if you find upon reading the paper that there is a conflict of interest regarding your own research or commercial interests, you need to decline to finish the review. Also, the role of reviewer is a position of trust. A paper must be considered a privileged communication, whose contents cannot be disclosed to others or be used to further one's own research at the expense of the author. One exception to revealing a paper's contents would be to consult with research colleagues who can help you evaluate the paper.

A reviewer needs to, insofar as possible, separate his or her approach to the subject from that used by the authors. After all, it's their paper. However, incorrect or flawed work should be identified and described. Errors, misinterpretations, and unsubstantiated claims should be pointed out. If there are references that can amplify your critique, they should be listed in the review. Assuming the paper is correct, the reviewer can assist the authors by providing them with suggestions for improving the contents and language of their paper.

Some reviewers go beyond suggestions for improvement and edit the document. In some instances, particularly in case of technical terms or language, this may be useful to a point. But when it comes to detailed copyediting of a manuscript, it would be best to leave the work to publishing staff. Comments on the overall organization and exposition are useful, however.

Beyond an honest and detailed evaluation of the paper, the reviewer can assist the editor by assessing the overall importance of the paper. In the case of *Optical Engineering*, we provide two lists to rate the journalistic qualities (appropriateness, writing quality, organization and clarity, length, references, and figures) and the scientific merit (originality, significance of results, technical accuracy, rigor, level of detail, and substantiation of conclusions) of the paper. These ratings can assist the editor in determining if the paper, although correct in every respect, is wor-

thy of publication and worth the time and effort for you, the reader, to pay attention to it.

In addition to the obvious purpose of ensuring quality and originality, there is the need to ensure integrity of the papers published in our journals. One of the most valuable functions that our reviewers perform is that they detect improper conduct on the part of the authors. With one exception, all cases of plagiarism that I have had to contend with this past year were detected by our reviewers. A case of duplicate submission was also brought to light by a reviewer. In some cases a reviewer may have previously evaluated the paper and the authors have not modified it since it was last seen. Besides the obvious suggestion to the editor not to publish it, the reviewer should notify the editor that this paper had been previously submitted and rejected elsewhere.

Sometimes with the pressure of time and other obligations, you are unable to review a paper. When that hap-

pens, let the journal staff and the Associate Editor know that you can't do the review promptly. If possible, suggest one or two other reviewers who would be qualified to review the manuscript.

Despite all of the work that comes with selecting and corresponding with a wide number of professionals in optics, the peer-review system for technical publication works well. There is the impartiality of the unpaid reviewer that a paid reviewer might not have. Although there will always be some whose reviews are usually delivered in one line ("Looks OK to me"), I am impressed by and appreciative of the thought and energy that go into most reviews. My thanks to all who provide our community with such a valuable service.

**Donald C. O'Shea**  
Editor