



### Why Don't Optical Engineers Publish?

One of the outcomes of the Joint Task Force (JTF) report on SPIE-OSA unification was a study undertaken by John Murray, Editor-in-Chief of *Applied Optics*, on the publishing patterns in OSA and SPIE journals. (The full report of the JTF Publications Subcommittee is available on the web at <http://www.spie.org/info/jtf/report/pubs.html>.) A tabulation of papers based on the author affiliations was done to determine the relative contributions from academic and industrial sites. The conclusion was that "over a 12-month period, OE and AO have virtually the same mix of about 60% academic, 30% mixed, and 10% industrial." So this pattern is not confined to one journal or the other. The finding confirms what most of us in optics already knew: most optical engineers working outside of academia do not publish.

Why don't optical engineers publish? What's the matter? Early in my tenure as editor I was seized by a compulsion to berate optical engineers for their reluctance to publish in a peer-reviewed journal. Luckily, that passed. I have become resigned to the fact that most optical engineers will not, cannot, and, in some cases, should not publish.

Why does anyone publish? The short answers are: money and fame. Many authors hold positions at institutions of higher learning that strongly encourage their faculty to publish in refereed journals. In some ways it becomes a paper count. I have, for example, seen one of my colleagues do a quick count of the number of *Physical Review Letters*, followed by a count of *The Physical Review* papers in the publication list of a person's CV. He considers this to be a method of making a quick assessment of someone's productivity as a researcher in a field other than his own. Publish or perish. So the pressure to publish in many instances is one of survival.

The other reason to publish is fame. Publication in a peer-reviewed journal provides a means of establishing priority of some discovery and an authentication of the results. In this time of rapid technological change, the hottest topics go to the letters-type journals or in some cases to the unrefereed manuscript servers. Far behind, but still a factor, is the urge to publish. Some people simply need to tell others what they have done.

What keeps optical engineers from publishing? For some, it is that there are a lot more fun things to do than publish a paper. Most, even the most productive researchers, regard writing a paper as the adult equivalent of eating one's broccoli. But beyond the nearly universal inclination to put off a writing assignment, there are additional countervailing forces that can reduce the optical engineer's motivation to publish. First, there are the demands of time. From my consulting over many years I have come to understand that most engineers spend their time on the wrong side of deadlines. Perhaps that may be because the consultant gets called in when the problems are appearing faster than the solutions. But I have had other experiences that convince me that most engineers are short of time—all the time.

Beyond the press of time there is management's reluctance to permit publication. For some, the question is: What is the charge number to write this paper? And then, there is the suspicion that publishing a paper is akin to giving away trade secrets and unpatented ideas. Some companies have a strong review policy that can intimidate those even contemplating the idea of letting the world know what they are doing. So what's an optiker to do?

One of the reasons for SPIE's success over the years is an inclusive approach to accepting conference papers. To some that raises the cry that standards are not being upheld and the conference organizer should be stoned at the doors of the convention center. But this inclusiveness has proved beneficial to the profession. Aside from inappropriate papers and ones that are obviously wrong and should be rejected by the chair of the conference, permitting someone to contribute to the technical conversation in a field without formal peer review of the paper gets the material to those who are confronted with the same problems.

And it may be at that point that the process should stop. It may be that what is presented and published in the proceedings is sufficient for the record and its import on the future progress in the field is limited. For example, it is not unusual to see a paper at a lens design conference that reviews the current capabilities of a certain design program. In a year, this information will be out of date. It is valuable as a conference paper; it is not appropriate as a journal article.

But for other work, especially work that is innovative and significant, it is a shame that some of you do not take the initiative to submit to a journal like *Optical Engineering*. For some potential authors, the prospect of going through the review hoop is too intimidating. That is unfortunate because the peer-review process can improve a manuscript. I am amazed at the assistance and insights that our reviewers give to authors. An author should consider the peer-review process as a form of quality assurance and improvement rather than an obstacle to publication.

Also, companies should look carefully at their publication and review policies. Certainly, papers on ongoing projects may not be appropriate. But papers on systems in production can provide interested vendors and customers with an insight into a firm's capability beyond that found in the standard marketing brochure. Because the paper has

been peer-reviewed, its contents will be regarded by others as less self-serving than a four-color trifold brochure would be. Publication can be an excellent means of improving the recognition and prestige of a company.

It is becoming common for an optical engineer to work for several employers during his or her lifetime. Therefore, a record of accomplishment in optical engineering should include conference papers and publications. Whether at the behest of your boss or through your own inclination to brag in an acceptable manner, submission of a paper to a journal, like this one, is a good idea. Optical engineers should publish.

**Donald C. O'Shea**  
Editor