



## Electronic Publishing

For many years the promise of a paperless office has been held out to those who, for either efficiency or environmental reasons, wished to do away with paper, but there appeared to be no substantial reduction in the reams of papers next to the copy machines or our laser printers. However, the replacement of processed twigs and carbon dust with electronic documents is under way. This is due to developments in technology in the form of cheap memory, inexpensive permanent recording (CDs and DVDs), and high-resolution monitors. Despite my assertions that I could not read a paper displayed on a computer monitor and that I had to print it first, I find that in the past year I tend to activate the scroll button instead of the print button more often.

Apparently, this is true for many of you. About half of the subscribers to this journal, individual and institutional, have online (i.e., electronic) subscriptions. So, we are well under way to the paperless, or less papered, future that was promised. The next steps will go well beyond the electronic duplication of your current print journals and provide new resources for your work. I chair a subcommittee of the SPIE Publications Committee looking into the opportunities in electronic publishing. A number of interesting prospects have presented themselves.

There is one aspect of electronic publishing that has been a feature of this journal for the past four years. It is the rapid publication section of the journal, *OE Letters*. If you only read the print version, you may not be aware that once a letter is accepted for publication in *Optical Engineering*, a preprint (i.e., a version that has not yet been copyedited or typeset) is posted on <http://spie.org>, often a few months before it appears in the official online and print issues of *Optical Engineering*. In a sense, the paper is published electronically in real time. In contrast, our regular papers are copyedited, typeset, and queued up for the next issue to be printed and posted online.

But something similar to the *OE Letters* model could be extended to all papers. One option is an approach known as “real-time,” “article-at-a-time,” or “e-first” publishing. Once papers are accepted, copyedited, and typeset, subscribers to the electronic version of *Optical*

*Engineering* would be able to view the papers individually, as they are approved for publication. The online table of contents would build as a “partial issue” until the issue is complete, and then the next online issue would open. After the electronic versions of the papers have been published online and the closing date for the issue is reached, the printed version of the journal is generated and distributed to our print subscribers. Such an e-first initiative would be applied to all SPIE journals, not just this one.

How does this benefit you? If you or your institution subscribes to the electronic version of the journal, then you will be able to view those papers completed and ready for publication several weeks before they will be mailed and seen in print. Considering how early publication of results are prized, such an effort may attract research papers to our journals. At any rate, it will enhance timely publication and therefore access to SPIE journal papers.

After *Optical Engineering* was started, each new SPIE journal introduced has been established by forming a subcommittee to identify a technical area within SPIE that should have its own journal, to estimate the size and interest of the audience, and, if a new journal is warranted, to identify and recommend an editor. One uncertainty to such an enterprise is whether the number of papers submitted and the number of interested subscribers would be sufficient to sustain a journal and justify the editorial, printing, and distribution costs that are incurred. Therefore, the bar for establishing a new print journal is quite high.

However, our Society continues to grow and change. With the advent of electronic publishing, it may be possible to publish an electronic journal, or eJournal, for some segment of our Society with no printed version. One such eJournal is OSA’s *Optics Express*, whose coverage is the entire field of optics. Instead of a journal with such broad coverage, an eJournal might be developed in one of the fields of optics that has a particularly strong presence within SPIE. For some fields, presentation of results in the form of full and false color images, animations, and videos would make an electronic journal an ideal platform.

Because researchers publish in a number of different journals, the state of progress in a particular field is not necessarily apparent to others in that field unless they are

very diligent investigators, or they have trained their graduate students to comb the literature for new work. However, electronic publications offer the possibility of combining the links for all relevant papers in the field to be collected in the form of a “virtual journal.” The actual links would lead back to the parent publication site. For SPIE, this would be the the constituent publications within the SPIE Digital Library and could include both journal and proceedings articles. Perhaps the most difficult part of the entire enterprise would be finding editors who would be willing to accumulate a source of potential papers and then decide which should be included. Wow, that could make for an interesting position!

As all scholarly journals convert to electronic publication, the options available to serve the research community increase. Depending on how things progress we could be overwhelmed by an information overload or we could be provided with a more comprehensive, up-to-the-minute view of our research field. It will probably take us a while to adapt to this amazing new technology.

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