

Optical Engineering

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Structured Abstracts

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I suspect that many of you may have experienced the following situation sometime during your career. You receive a call for papers for a scientific conference and decide to present the results on some ongoing work. As the work is not yet entirely completed, you prepare an abstract that captures the objectives and approach with little specificity on the results that are not yet in hand. You submit your abstract to the conference, complete the work, and ultimately your presentation and conference proceedings paper contain findings and results you only conjectured when you agreed to present.

So what about that abstract? Do you remember to go back and add the key findings into the original draft that was submitted? Or do you feel that the published paper should, for some reason, contain the abstract unchanged from your original response to the call for papers?

For journal papers, this situation should not arise as the abstract and completed paper are submitted at once. However, there is a variance in the form and content of the abstracts submitted to scientific journals like *Optical Engineering* that might carry over from the practice applied to conference papers. My impression is that the largest missing element tends to be the level of detail about key results and findings of the published work.

This variance in abstract content is one factor that recently triggered a discussion among the SPIE Board of Editors concerning the topic of structured abstracts. The practice of structured abstracts has been adopted by medical journals over the past two decades partly in response to a foundational paper in 1987 calling for more uniformly informative abstracts.¹ The concept is to require subheadings delineating

common informational elements that all abstracts must contain. These typically include background or significance, objectives, scientific approach, key results or findings, and conclusions. The subheadings can be tailored for different paper types, such as review papers or tutorials.

Structured abstracts now appear to be ingrained in the culture of the medical research community and are viewed as a positive development. Although there are proponents for the widespread adoption of structured abstracts in scientific journals,² this has not yet occurred. Within SPIE, a leading proponent is Chris Mack, the editor of the *Journal of Micro/Nanolithography, MEMS, and MOEMS* (JM3), and he presents some sound arguments for adopting the practice. Most importantly, the structured abstract requirement leads authors toward making every abstract a comprehensive but succinct synopsis of the paper. While all authors should be addressing each of the subheaded information requirements anyway, experience shows that this often does not occur, even with peer review. Also, as we have moved into the digital information age where search engines, data mining, and data analytics have become tremendously important, the case for structured abstracts is even more compelling as a means to fortify the efficacy of these twenty-first-century tools.

Several SPIE journals are considering pilot programs for structured abstracts, including JM3, which is starting to give authors the option to use structured or traditional abstracts.³ As I have considered whether the adoption of structured abstracts is the best path forward for *Optical Engineering*, I have mixed feelings. I like the look and feel of the traditional free-form abstract but admit that the benefits of structured abstracts are compelling and we will probably become quickly accustomed to this new format. I am interested in your thoughts, as readers of this journal, as to whether *Optical Engineering* should join the movement.

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References

1. F. Gutzwiller and F. M. Peccaud, "A proposal for more informative abstracts of clinical articles," *Ann. Intern. Med.* **106**, 598–604 (1987).
2. R.N. Kostoff and J. Hartley, "Open letter to technical journal editors regarding structured abstracts," *J. Inform. Sci.* **28**(3), 257–261 (2002).
3. C. Mack, "Implementing structured abstracts in JM3," *J. Micro/Nanolith. MEMS MOEMS* **17**(3), 030101 (2018).