Editorial

Jack D. Gaskill, Editor

Figures of No Merit

The subject of this editorial is figures—not the kinds of figures seen on the beach or those displayed in the columns of a ledger. The figures of concern here are those included with manuscripts submitted to *Optical Engineering*. You might ask, “Why an editorial on figures?” I’ll tell you why—because we have been receiving too many crummy ones! I don’t wish to exaggerate the severity of the problem, but approximately 11 out of every 10 illustrations submitted are bad. I don’t understand the reasons for this, particularly when the journal to which they are being submitted is one involving optics, but it is true.* I just can’t figure it out.

What do I mean by “crummy”? Basically, I mean a figure that won’t reproduce well in the journal. In the section entitled “Information for Contributors to *Optical Engineering*” found in each issue of the journal, authors are instructed to send one original and two photocopies of each illustration. For line drawings, the original should be either a glossy print or a black ink drawing, and for photographs the original should be a glossy print. Authors are often reluctant to send the “original” originals for fear they will be lost, and send a second-generation version instead.

However, these second-generation illustrations frequently are not as good as the originals—e.g., the lines of graphs are not of uniform width or contrast—and will therefore not reproduce as well as the original. Consequently, the best version available should be submitted.

Perhaps the biggest problem encountered has to do with figure reduction. To illustrate, if you were to send us a line drawing of dimensions 24×24 cm, it would likely be reduced to a size of about 8×8 cm or less in the journal. If, in addition, the lettering on your original is just large enough to be read at a comfortable reading distance (e.g., 40 cm), it would be very difficult to read at that distance when reduced in size by a factor of 3 or 4. To get an idea of how it would look after such a reduction, move your original to a position three or four times as far away as you normally hold it for reading—120 to 160 cm for this example—and see how it looks. If the lettering is difficult to read at that distance, it would also be difficult to read after reduction in the journal. This problem could be partially alleviated by not reducing the figure as much, but I should point out that there are really only two choices for reduction—either to the width of a page or to the width of a column. The column-width choice is usually preferred because a figure that takes up the full width of the page wastes a lot of space and costs much more to print.

Let me leave you with Gaskill’s corollary to the well-known phrase that “a word is only worth a milli-picture”: given a crummy picture, a word is likely to be worth considerably more than a milli-picture.

*I do not wish to offend any authors who always submit good illustrations. This editorial is mainly addressed to those who do not.

Future Special Issues (see p. 921 for complete editorial schedule)

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Optical Information Processing: Systems, Materials, and Devices

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We are continuing our series of special issues on optical information processing, with the fourth issue scheduled for publication in May 1987. As with its predecessors, the scope will encompass developments in materials, devices, and systems for optical information processing. The special issue will cover the following areas: optical implementation of image processing, including thresholding, level slicing, correlation, subtraction, division, geometrical operations, and logarithmic transformation; system implementation of optical computing functions including matrix operations, in particular multiplication and inversion, correlations, convolutions, and optical implementation of associative memories for

both image processing and optical computing; and optical information processing devices, including one- and two-dimensional SLMs and their applications in adaptive optics, acousto-optic and magneto-optic devices, LED and laser diode arrays, wavelength image converters and intensifiers, and special-purpose one- and two-dimensional optical detectors such as CCD imagers and integrating arrays.

Finally, new developments in the associated materials will be covered, including electro-optic, multiple-quantum-well materials and nipi structures for optical modulation, organic optical materials, liquid crystals (including ferroelectrics), as well as acousto-optic, magneto-optic, and photorefractive materials for real-time holography.

Manuscripts announcing the discovery or invention of novel materials or devices or the potential utilization of novel physical effects are also solicited, as are manuscripts that establish fundamental physical performance boundaries for whole classes of components.

Authors are encouraged to submit manuscripts on any of the above topics for inclusion in the special issue. Manuscripts submitted for consideration should be sent to the Guest Editor before October 1, 1986.