



X-RAY MULTILAYERED OPTICS

- 897 **Guest Editorial: X-Ray Multilayered Optics**
Gerald F. Marshall
- 898 **Multilayers for x-ray optics**
Troy W. Barbee, Jr.
- 916 **Automatic electron-beam deposition of multilayer soft x-ray coatings with laterally graded d-spacing**
M. P. Bruijn, P. Chakraborty, H. W. van Essen, J. Verhoeven, M. J. van der Wiel
- 922 **Monochromatization by multilayered optics on a cylindrical reflector and on an ellipsoidal focusing ring**
Gerald F. Marshall
- 933 **Computing x-ray reflectance of focusing multilayer films**
Dwight W. Berreman
- 937 **Characterization of multilayer x-ray analyzers: models and measurements**
B. L. Henke, J. Y. Uejio, H. T. Yamada, R. E. Tackaberry
- 948 **Analytical electron microscopy of multilayered thin films using microcleavage**
Yves Lepêtre, Ivan K. Schuller, Georges Rasigni, René Rivoira, Roger Philip, Pierre Dhez
- 954 **Determination of thickness errors and boundary roughness from the measured performance of a multilayer coating**
Eberhard Spiller, Alan E. Rosenbluth
- 964 **Layered synthetic microstructures for long wavelength x-ray spectrometry**
J. A. Nicolosi, J. P. Groven, D. Merlo, R. Jenkins
- 970 **Spectral Slicing X-Ray Telescope**
Richard B. Hoover, David L. Shealy, Shao-Hua Chao
- IMAGE CODING**
- 979 **Adaptive transform coding and image quality**
Andrew G. Tescher, John A. Saghi
- FIBER-OPTIC COUPLER**
- 984 **Polarization-preserving fiber-optic 2×2 directional coupler**
Shigefumi Masuda, Terumi Chikama, Hiroshi Onaka

Contents continued on page SR-146

Office of the Editor: Optical Sciences Center, The University of Arizona, Tucson, AZ 85721; 602/621-4111. **Office of the Associate Editor:** 10451 E. Plumeria Rd., Tucson, AZ 85749; 602/749-5427. **Office of the Managing Editor:** SPIE, P.O. Box 10, Bellingham, WA 98227-0010 USA; 206/676-3290. Telex: 46-7053. **Assistant Editor:** Irving J. Spiro. **Book Reviews Editor:** Joseph L. Horner. **Executive Editor:** Joseph Yaver. **Editorial Advisors:** Henri H. Arsenault (Canada), Toshimitsu Asakura (Japan), Mark Beran (Israel), D. J. Bradley (U.K.), Pal Greguss, Jr. (Hungary), B. D. Guenther, Harold H. Hopkins (U.K.), Henry Lum, A. A. Sawchuck, Richard A. Soref, W. H. Steel (Australia), Jumpei Tsujuchi (Japan), Vincent C. Vannicola.

SPIE Membership. Annual dues (includes *Optical Engineering*): Regular \$60. Retired \$25. Student \$15. Sustaining Member information on request. **Subscriptions, change of address** to SPIE, P.O. Box 10, Bellingham, WA 98227-0010 USA—please send old and new address. **Editorial:** Send manuscripts, editorial correspondence, books for review to the Editor. Bylined articles in *Optical Engineering* reflect the author's opinion; inclusion of articles and advertisements in this publication does not necessarily constitute endorsement by the editors or by the Society of Photo-Optical Instrumentation Engineers. © 1986 Society of Photo-Optical Instrumentation Engineers.

Optical Engineering (ISSN 0091-3286) (USPS 450-970) is published monthly at the annual subscription price of \$95 North America, \$115 all other countries, single copy \$15, by the Society of Photo-Optical Instrumentation Engineers, P.O. Box 10, Bellingham, WA 98227-0010. Second class postage paid at Bellingham, WA 98227 and at additional mailing offices. **Postmaster:** Send address changes to *Optical Engineering*, P.O. Box 10, Bellingham, WA 98227-0010.

