Emerging Optoelectronic Technologies

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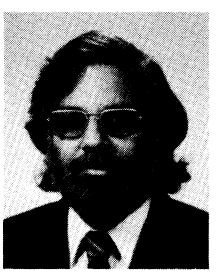
This special section on emerging optoelectronic technologies represents some of the high-quality work reported at the International Conference on Emerging Optoelectronic Technologies held in Bangalore, India, during December 1991. The conference was sponsored by SPIE; the Jawahar Lal Nehru Center for Advanced Scientific Research in Bangalore; the Department of Science and Technology of India; and the U.S. National Science Foundation. Over 300 leading scientists and engineers from all over the world participated in the conference. A glance at the table of contents yields convincing evidence of the diversity of interests and capabilities of the optoelectronic community. The papers represent work reported in the areas of materials and fabrication technologies, optoelectronic devices and integrated circuits, optical waveguides, and novel phenomena and optoelectronic systems.

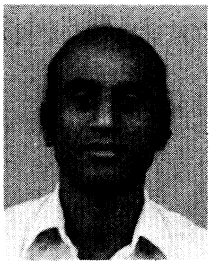
The first nine papers included in this special section are expanded versions of the papers presented at the conference. The other six papers represent the recent results from research groups in India, the United States, and Canada.

We are grateful to the reviewers of the papers published here who made many constructive suggestions for improving the manuscripts and to all the authors who were most cooperative with editorial requests. Our sincere thanks to Editor Brian J. Thompson for his guidance and help with the editorial process.



Vijai K. Tripathi received a BSc degree in 1958 from Agra University, India, a MScTech degree in electronics and radio engineering in 1961 from Allahabad University, India, and MSEE and PhD degrees in electrical engineering in 1964 and 1968, respectively, from the University of Michigan, Ann Arbor. From 1961 to 1963, he was a senior research assistant at the Indian Institute of Technology, Bombay. In 1963, he joined the Electron Physics Laboratory at the University of Michigan, where he worked as a research assistant from 1963 to 1965 and as a research associate from 1966 to 1967. From 1968 to 1973, he was an assistant professor of electrical engineering at the University of Oklahoma, Norman. In 1974 he joined Oregon State University, Corvallis, where he is now a professor of electrical and computer engineering. He has held visiting and sabbatical appointments at the Division of Network Theory at Chalmers University of Technology, Gothenburg, Sweden; Duisburg University, Germany; the Electronics Technology Division of the Naval Research Laboratory, Washington, D.C.; the University of Cental Florida; and the University of Rome. Over the years he has been a consultant to many industrial organizations including AVANTEK, EEsof Inc., Teledyne MMIC, and Tektronix. His research activities are in microwave circuits and devices, electromagnetic fields, interconnect and packaging technologies, and optoelectronic integrated circuits. He is the author/coauthor of over 125 technical papers and the third edition of a book on transmission lines and wave propagation. Professor Tripathi is a fellow of IEEE.

Govind P. Agrawal received the BS degree from the University of Lucknow in 1969 and the MS and PhD degrees from the Indian Institute of Technology, New Delhi, in 1971 and 1974, respectively. After holding positions at the Ecole Polytechnique, France, the City University of New York, and AT&T Bell Laboratories, Dr. Agrawal joined the faculty of the Institute of Optics at the University of Rochester, New York, in January 1989. His research interests focus on quantum electronics, nonlinear optics, and laser physics. In particular, he has contributed significantly to the fields of semiconductor lasers, nonlinear fiber optics, and optical communications. He is author/coauthor of more than 160 research papers, several book chapters and review articles, and three books. He has also coedited a book. Dr. Agrawal is a fellow of the OSA, a senior member of the IEEE, and a member of the APS.



A. Selvarajan obtained his MSc in physics from Annamalai University and his PhD from Indian Institute of Science, Bangalore. Currently, he is a professor at the Department of Electrical Communication Engineering, Indian Institute of Science. He has more than 70 publications in the areas of optics and spectroscopy, holography, acousto-optics, fiber optics, and integrated optics. His current interests include fiber and integrated optics and optical communications. He has been a visiting research fellow/scientist at the Optical Sciences Center, University of Arizona; the University of Upsala, Sweden; the Technical University Denmark; and the University College London. He is a member of OSA and the IETE.