

Recent Advances in Diffractive- and Micro-Optics Technology

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Diffractive- and micro-optics technology provides new degrees of freedom for the design and optimization of optical systems. In this talk emphasis will be placed on recent advances in the design and fabrication of precision, micro-structured optical elements and their applications in the optical telecommunication, vision-care, illumination and display markets.

Particular emphasis will be given to beam shaping for microlens array collimators for optical switching systems, fiber-to-fiber coupling, as well as several state-of-the-art applications, including: head-mounted displays; phakic intraocular lenses, laser and white-light projection display systems; and anti-reflection surfaces, polarization components and narrow-band filters based on subwavelength-structured surfaces.

G. Michael Morris Biographical Sketch

Michael Morris received his B.S. degree with Special Distinction in Engineering Physics in 1975 from the University of Oklahoma, and his M.S. and Ph. D. degrees in Electrical Engineering from the California Institute of Technology in 1976 and 1979, respectively. From 1979 to 1982, Morris was a Scientist in Optics at The Institute of Optics, University of Rochester. From 1982-2001, Morris was a Professor of Optics at The Institute of Optics, and is currently an Adjunct Professor of Optics.

In 1989, Morris co-founded Rochester Photonics Corporation (RPC) that specialized in design, prototyping, and manufacturing of diffractive- and micro-optics components and subsystems. In February 1999, RPC was acquired by Corning Incorporated, and functioned as a wholly-owned subsidiary of Corning Incorporated through December 2002. Morris is currently in the process of spinning off two companies from Corning Rochester Photonics Corporation: (1) Apollo Optical Systems LLC, which will focus on product development and services for the vision-care market, and (2) the "new" Rochester Photonics Corporation, which will focus in product development and services for the display and illumination markets.

Morris' research has spanned a wide variety of topics in statistical optics, optical information processing, automatic pattern recognition, and diffractive- and micro-optics. Morris' current research interests centers on the design and fabrication of telecommunication that utilize diffractive- and micro-optical elements. He is a Fellow of the Optical Society of America and SPIE, and is President of the Optical Society of America for 2003. He is also the recipient of the 1997 Rochester Chamber of Commerce Civic Award for Science and Technology, and is an Honorary Member of the OSA, Rochester Section.