Biomedical Optics

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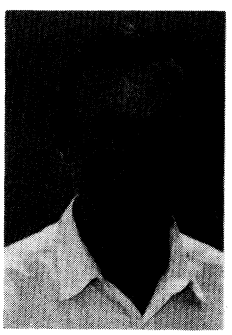
During the last few years, interest has grown in the application of modern optics in medicine and biology. Advanced imaging techniques, various spectroscopic methods, holography, and interferometry have all been applied to biomedicine. The same is true for lasers, optical fibers, and various optoelectronic devices and methods. There is no doubt that biomedical optics is emerging as an independent field of research and that it will have a great impact on medical practice.

During the last eight years, SPIE has organized many conferences and several symposia in areas related to biomedical optics. Thousands of scientists, physicians, and engineers attended these conferences and interacted with each other. More than 1000 papers were presented and most of them were neither purely scientific nor were they clinical. Almost all of the papers combined scientific methods based on physics, mathematics, biology, and chemistry, with medical research involving biological tissue, animal models, or clinical investigation. Many of these works have not been published by regular peer-reviewed journals. They were too scientific for the medical journals and too medical for the exact science journals. It was therefore felt that a real need existed to have an arena where excellent papers in this area could be published.

All of the papers that appear here were carefully reviewed by top scientists in the field. We hope that this section will ultimately lead to the publication of a high-quality journal dedicated to biomedical optics.



Abraham Katzir studied physics at the Hebrew University in Jerusalem, Israel, and received a PhD in 1974. In 1977 he joined Tel Aviv University, where he is now a professor of physics and the head of Applied Physics. He spent several years in the United States as a senior research fellow at the California Institute of Technology, as a visiting member of staff at Bell Telephone Laboratories, New Jersey, and as a visiting professor at MIT and at Boston University, Massachusetts. Katzir is one of the pioneers of the R&D of IR-transmitting optical fibers and has been exploring the use of IR fibers and systems in various applications in medicine and industry. He is interested in the use of lasers and optical fibers in medicine for imaging, sensing, and therapy. He has published more than 100 scientific papers and two book chapters and has presented more than 50 talks and papers at international conferences and scientific meetings. He edited the SPIE Milestone Series volume on *Optical Fibers in Medicine* and is the author of a book on optical fibers in medicine that will be published soon. He is a member of OSA, a senior member of IEEE, and a fellow and member of the Board of Directors of SPIE.