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For nearly 15 years the bible in holography has been OPTICAL Holography by Collier, Burckhardt, and Lin. During these 15 years there have been many developments in holography; a book of the breadth and quality of Hariharan’s is long overdue.

In the Preface Hariharan states that his “aim in writing the book is to present a self-contained treatment of the principles, techniques, and applications of optical holography, with particular emphasis on recent developments.” While this book covers both new and old material in sufficient detail to be self-contained, it does not go into excessive detail. Instead it is generous in giving references to the original papers. Because of this, we believe that the author has achieved his goal.

The book contains fifteen chapters, four appendices, and a list of some 700 references. These fifteen chapters are split into two sections. The first seven chapters concentrate on the basics of holography, recording media, and the making of holograms. Chapter 1 provides a short historical overview of holography. Chapters 2–4 outline the basic wavefront reconstruction process, describe the reconstructed image and its aberrations, and discuss the types of hologram. The next three chapters deal with light sources and the recording media. Chapter 5 describes optical systems and light sources for making holograms. Characteristics of recording media are presented in Chap. 6, and Chap. 7 lists some practical recording media.

The second half of the book deals with various applications of holography such as displays, color holography, computer-generated holograms, and holographic interferometry. Chapters 8 and 9 describe holograms for displays and color holography. These chapters are of particular interest because they cover a lot of excellent material that has not been dealt with adequately in previous holography books. Chapter 10 discusses the theory and applications of computer-generated holograms. Special holographic techniques such as polarization recording, incoherent holography, and the copying of holograms are covered in Chap. 11. The next two chapters discuss applications in imaging such as particle sizing, correction of aberrated wave fronts, high-resolution projection imaging, evanescent-wave holography, holographic diffraction gratings and optical elements, and information storage and processing.

Last, there are two chapters on the largest use of holography: holographic interferometry. Chapter 14 contains an up-to-date description of heterodyne-holographic interferometry as well as traditional techniques for holography nondestructive testing. Then Chap. 15 gives an excellent discussion of the measurement of vibrations, photoelasticity, and contouring techniques. Finally, the book is rounded out with appendices containing short descriptions of Fourier transforms, wave propagation and diffraction, interference and coherence, speckle, and He&D curve.

Hariharan has done something that we thought was impossible. He has succeeded in writing a book on general holography that we like better than all previous books. We strongly recommend it.

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This first edition of ElectroTechnology Review summarizes new developments in the fields that comprise electrotechnology for readers who have some technical know-how. This volume—inagurating what is hoped to be an annual review series—contains 32 short reviews of areas of electrical and electronic engineering and computers. There are three two-page surveys of special interest under the heading Optical Materials, Devices and Applications. I. P. Ippen has an account of the shortening of ultrashort optical pulses in which the pulse time has been reduced since 1965 from 10 ps to 16 fs in 1984 by using the colliding-pulse-mode-locking (CPM) principle. Reliable pulses shorter than 100 fs can be produced with a CPM dye laser using the interaction of two oppositely directed pulses in a thin saturable absorber. Sisy Wang describes tunable semiconductor lasers which employ various interferometric principles to control the laser wavelength. Joseph T. Longo shows how improved IR detector arrays can be made using stable crystalline layers of mercury–cadmium–telluride grown epitaxially on single-crystal sapphire instead of bulk CdTe.