

book review

Practical Holography: third edition

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About the author

Iñaki studied Physics at Imperial College, London. He has been making holograms for the past 15 years, and has perfected an enviable holography studio. During the last 7 years he has concentrated on pseudocolour display holograms. He has worked at various companies involved in security holography.

It has been a while since the release of any new books on practical holography, at least within Europe and the U.S. Despite the wealth of information available on the internet, getting hold of current information on the specifics of the subject, especially from one source, has become increasingly difficult. So the third edition of "Practical Holography" by Graham Saxby comes as a welcome read.

In brief this book is an extremely comprehensive manual on all current aspects of holography, from basic theory to in-depth practical information including commercial and industrial processes. The emphasis from the author's point of view is of course on the practical techniques, and these are covered in extensive detail. As anyone who has dabbled in the process of making holograms will know, seemingly small and insignificant information at the time of reading can be invaluable at a time of crisis in the lab, when all else seems to have failed! Due to the author's many years of practical experience this text contains that necessary information so the book can be referred to from the outset as a learning aid and then as a detailed reference for all practical aspects of the subject.

Compared with the two previous editions the layout of the book has been refined, thus improving readability and providing better continuity throughout. There are numerous asides, set as marginal notes, giving topical pieces of useful information. The diagrams throughout follow a clear generic style making them easy to understand, and there are many photographs including some very interesting colour plates of images made by various holographic artists.

The book is divided into four main sections: principles, which covers the very basics of the subject, essentially the building blocks; practical display holography, which comprises the bulk of the book and is detailed enough to cater for all levels; applied holography, which includes commercial and industrial applications; and finally five appendices covering mathematical theories, unusual geometries and processing formulae. So, anyone with a non-scientific background will know which sections to avoid!

The layout of the practical section is organised so that individuals can progressively work from one chapter to the next at their own pace, increasing their knowledge and understanding, and the complexity of the holographic systems they create. There is plenty of advice on corrective measures when things go wrong, and helpful tips on unusual but necessary skills such as cutting glass in the dark. There are many ideas for cost saving as well. A large number of items used in holography can be made from a few basic materials and a little ingenuity. These are fully described throughout the practical section, and there are also references if further information is required. One chapter has been dedicated to producing cheap homemade optical elements including HOE's for use primarily in the holographic systems described in the book. However, I think a reasonable level of holographic experience has to be achieved before attempting these, as they need to be clean and efficient to work satisfactorily.

There have been significant changes in holography over the past decade since the second edition, some good and some bad; this new edition is completely updated and it expands on areas of increased interest and development such as holographic stereograms and colour work (both natural and pseudocolour). There is an up-to-date report on holographic plates including a useful summary of commercially available recording materials, which will hopefully go a long way towards relieving the concerns about alternative emulsion availability. With the advent of more stable diode lasers there is also information on using these and the necessary criteria they need to fulfil in order to work as well as the more traditional lasers.

There are plenty of good books on theoretical holography but there are very few that focus primarily on the physical processes. This book would suit anyone interested in the making of holograms be it from an artistic, commercial, industrial or research perspective. Taking into consideration the possible savings on equipment and raw materials, and potential time wasted, this comprehensive and extremely informative book will no doubt pay for itself in a very short time indeed, and I can strongly recommend it.