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**DYES  
AND  
PIGMENT**

## Book Review

**Chemistry and Applications of Leuco Dyes.** Edited by R. Muthyala. Plenum Press, New York, 1997. ISBN 0-306-45459-9.

The editor has assembled a panel of recognised experts in the major areas in which leuco dyes have been used and the result is a collection of chapters which covers the synthesis, properties and some of the more significant applications of these dye precursors. An interesting feature is the inclusion of experimental methods in some chapters. Every chapter provides a good range of literature references, although in some cases these could have been brought more up to date, being several years behind the year of publication of this book. Some chapters include only references to patents.

The first chapter deals with the photochromic spiropyrans in which the heterocyclic leuco dye is converted into a coloured merocyanine on UV-irradiation. Oxidation of hydroquinones to quinone dyes which may absorb in the near-infrared is covered in Chapter 2. Leuco dyes based on oxazine, thiazine and phenazine also yield the coloured form on oxidation and have value in thermography and photography. Three chapters discuss various arylmethines—phthalides,

triarylmethanes and fluorans—easily converted into dyes and all of which are useful in copying and thermosensitive recording. Finally, tetrazolium salts, which on reduction yield formazan dyes of value in chemical and biochemical analysis and in photography, are reviewed.

As expected of the work of several authors, the style varies between chapters, but the editor has achieved consistency in format. In some instances the use of English leaves a little to be desired and a better proof reading of some chapters could have eliminated the few chemical and rather minor but annoying typographical and grammatical errors. This is the first time that a text devoted to leuco dyes has been attempted. The result is a useful introduction to the area and a compilation which will help chemists appreciate the range and potential of leuco dyes and which may promote the development of both new systems and new applications of these materials.

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