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SCIENCE & TECHNOLOGY

Chemistry

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The following review will appear in the September 2010 issue of CHOICE. The review is for your internal use only until our publication date of 01 September 2010

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Turro, Nicholas J. **Modern molecular photochemistry of organic molecules,** by Nicholas J. Turro, V. Ramamurthy, and J. C. Scaiano. University Science Books, 2010. 1,084 bibl index afp ISBN 9781891389252, $134.50

This is an excellent introductory work for practicing photochemists or those with a particular need to understand how theoretical chemistry and physics can be applied to photochemical synthesis of complex organic molecular structures. Turro (Columbia Univ.; *Modern Molecular Photochemistry*, CH, Sep'79), Ramamurthy (Univ. of Miami), and Scaiano (Univ. of Ottawa, Canada) have reduced complex quantum mechanical concepts to simple formalisms readily understood. The authors make no assumptions and guide readers through the energy diagrams, spin configurations of electronically excited states, transitions between states, and the basic theory of organic photochemistry. The book focuses on the behavior of functional groups and the interaction of photons with chromophores like carbonyls and aromatics. Using diagrams and formalisms, the authors present with the utmost clarity concepts that would be mathematically extremely complex and even tedious. The work explains the field of supramolecular photochemistry, or what can be characterized as chemistry outside the molecule, and employs the supramolecular reaction of various inorganic structures, such as zeolites, as exemplars. The discussion of supramolecular photochemical reactivity manifests future novel synthetic chemistry. Excellent bibliographies conclude each chapter. **Summing Up**: Highly recommended. Senior-level organic chemistry undergraduates, graduate students, researchers/faculty, and professionals. -- *K. Bennett, emeritus, Kalamazoo Valley Community College*