



Photophysical and Laser Based Techniques in Chemistry, Biology, and Medicine

By El-Zeiny M Ebeid

Booksurge Publishing, United States, 2006. Paperback. Book Condition: New. 249 x 175 mm. Language: English . Brand New Book ***** Print on Demand *****.This book is a teaching book for advanced undergraduate and/or postgraduate levels. Its primary goal is to link some contemporary applications in chemistry, biology and medicine to known photophysical principles and laser properties. Chapters 1-3 highlight the basic photochemical and photophysical principles associated with electronic states together with a survey of laser systems, timing, and related devices. The following chapters include several techniques and applications in the fields of chemistry, biology and medicine that are based on these basic principles. This approach provides a means of motivating the student to link simple scientific ideas to their potential applications. The discussed techniques were grouped according to the photophysical or laser characteristics that are common among them. For instance, the photophysical properties of internal conversion (ic) and vibrational cascade (vc) constitute the basis of techniques depending on changes in molecular flexibility. We discussed several techniques depending on this phenomenon namely the detection of salmonella by the commercially available 4-methyl umbelliferyl caprilate (MUCAP) reagent, the modification of fingerprints upon metal ion complexation, DNA quantification by flexible fluorescent stains. The heat...



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