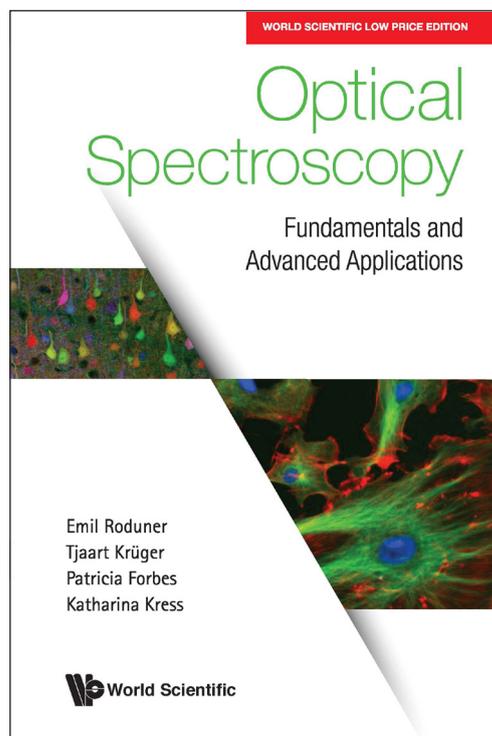


## OPTICAL SPECTROSCOPY

### FUNDAMENTALS AND ADVANCED APPLICATIONS

By  
Emil Roduner  
(*University of Stuttgart,  
Germany & University of  
Pretoria, South Africa*),  
Tjaart Krüger  
(*University of Pretoria,  
South Africa*),  
Patricia Forbes  
(*University of Pretoria,  
South Africa*) and  
Katharina Kress  
(*University of Stuttgart,  
Germany*)



ISBN 9780000988928

Extent: 268pp, PB

Pub Date: 2020

Price: Rs.995

### ABOUT THE BOOK

Developments in optical spectroscopy have taken new directions in recent decades, with the focus shifting from understanding small gas phase molecules towards applications in materials and biological systems. This is due to significant interest in these topics, which has been facilitated by significant technological developments.

Absorption, luminescence and excited state energy transfer properties have become of crucial importance on a large scale in materials related to light-harvesting in organic and inorganic third generation solar cells, for solar water splitting, and in light emitting diodes, TV screens and many other applications. In addition, Förster resonance energy transfer can be used as a ruler for the characterisation of the structure and dynamics of DNA, proteins and other biomolecules via labelling with fluorescing markers.

This advanced textbook covers a range of these applications as well as the basics of absorption, emission and energy transfer of molecular systems in the condensed phase, in addition to the corresponding behaviour of metal nanoparticles and semiconductor quantum dots. Technical experimental requirements, aspects to avoid interfering perturbations and methods of quantitative data analysis make this book accessible and ideal for students and researchers in physical chemistry, biophysics and nanomaterials.

Feel Books Pvt. Ltd.  
4381/4 Ansari Road  
Daryaganj  
New Delhi 110002  
Tel: +91 11 47472600

## READERSHIP

Students and researchers in chemistry, biology, biophysics, materials science, nanomaterials, analytics, energy conversion and light harvesting subjects.

## CONTENTS

- Introduction
- Fundamentals
- Aspects of Experimental Setup and Data Analysis
- Principles of Optical Spectroscopy Demonstrated for a Set of Rigid Merocyanine Dyes
- Absorption and Luminescence of Semiconductor Quantum Dots
- Energy Transfer Processes of Excited States
- Advanced Applications of Optical Spectroscopy

---

*For orders or enquiries, please contact us:*



### **Feel Books Pvt. Ltd.**

Delhi            Tel: +91 11 47472600, +91 9015043442, Email: [orders@feelbooks.in](mailto:orders@feelbooks.in)

Bengaluru      Tel: +91 80 26762129, Email: [bangalore@feelbooks.in](mailto:bangalore@feelbooks.in)

Mumbai        Tel: +91 9820284211, Email: [apandey@feelbooks.in](mailto:apandey@feelbooks.in)

Chennai        Mobile: +91 9003047502, Email: [gsrinivasan@feelbooks.in](mailto:gsrinivasan@feelbooks.in)

Kolkata        Mobile: +91 9836160013, Email: [dbhattacharjee@feelbooks.in](mailto:dbhattacharjee@feelbooks.in)

[www.feelbooks.in](http://www.feelbooks.in)

For any queries, please email us at [marketing@feelbooks.in](mailto:marketing@feelbooks.in)