

Quantum Chemistry and Dynamics of Excited States: A Comprehensive Guide to Molecular Excitation



Quantum Chemistry and Dynamics of Excited States: Methods and Applications by Veronica Roodt

★★★★★ 5 out of 5

Language	: English
File size	: 58442 KB
Text-to-Speech	: Enabled
Enhanced typesetting	: Enabled
X-Ray for textbooks	: Enabled
Print length	: 668 pages
Lending	: Enabled
Screen Reader	: Supported



The exploration of excited states in molecules has revolutionized our understanding of chemical reactivity, photochemistry, and laser physics. Quantum Chemistry and Dynamics of Excited States provides a comprehensive and up-to-date account of the fundamental principles, techniques, and applications of this exciting field.

Key Features of the Book

- **In-depth Coverage:** Explores the theoretical foundations of quantum chemistry, spectroscopic techniques, and the dynamics of excited states.

- **Practical Applications:** Showcases applications in photochemistry, laser physics, and materials science, demonstrating the relevance of excited state chemistry to real-world problems.
- **Expert Insights:** Written by renowned experts in the field, providing authoritative and cutting-edge perspectives.
- **Extensive References:** Includes comprehensive references to the latest research, enabling readers to delve deeper into specific topics.

Chapter Overview

1. **Quantum Mechanics of Excited States:** Introduces the fundamental principles of quantum mechanics and their application to excited states.
2. **Spectroscopy of Excited States:** Discusses various spectroscopic techniques, including absorption, emission, and Raman spectroscopy, used to probe excited states.
3. **Dynamics of Excited States:** Explores the dynamics of excited states, including relaxation processes, photodissociation, and energy transfer.
4. **Applications in Photochemistry:** Examines the role of excited states in photochemical reactions, including photoisomerization, photocycloaddition, and photofragmentation.
5. **Applications in Laser Physics:** Discusses the principles and applications of lasers, emphasizing the role of excited states in laser gain and emission.
6. **Applications in Materials Science:** Explores the use of excited states in the development of novel materials, including semiconductors, solar

cells, and organic electronics.

Benefits for Readers

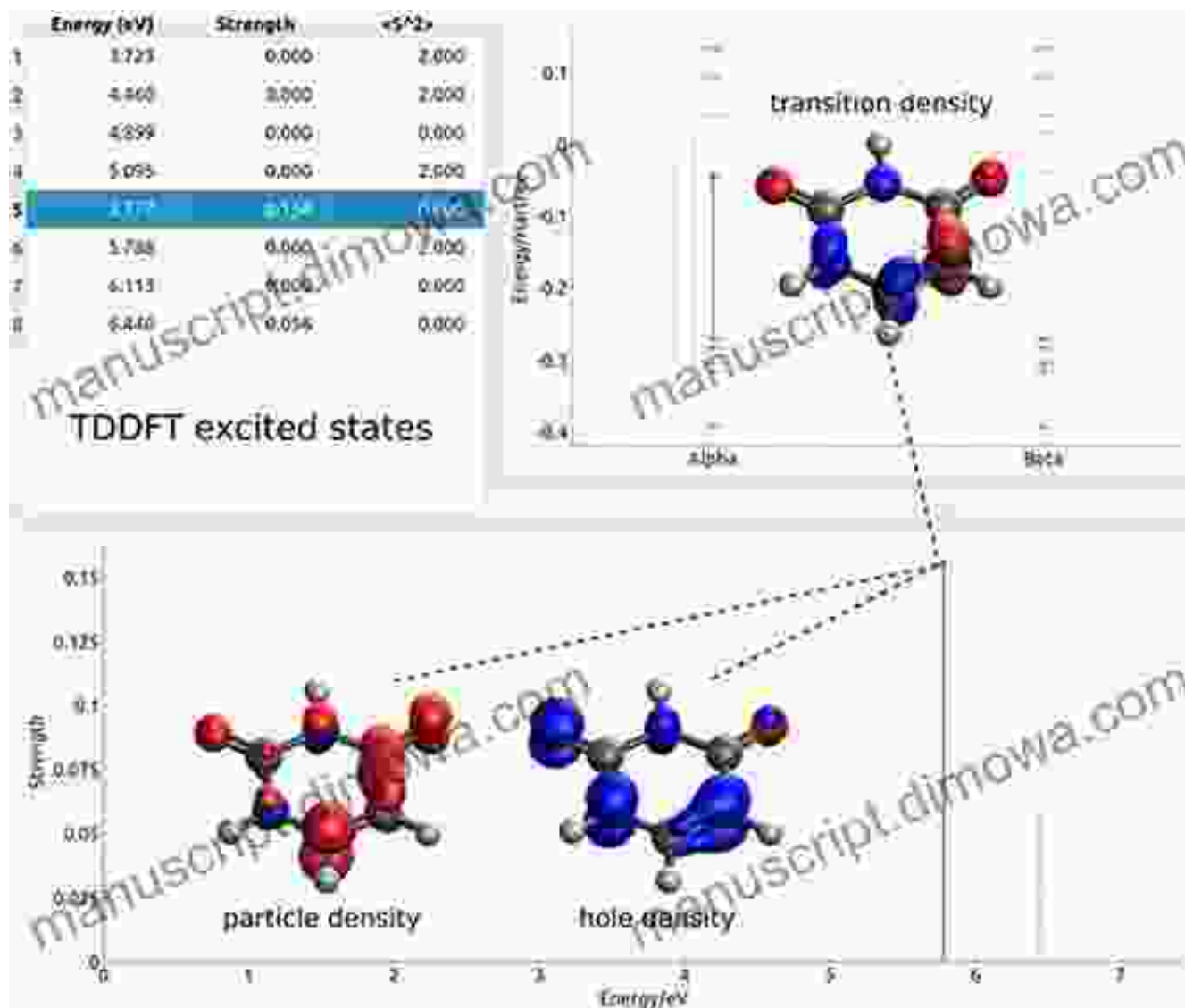
- Gain a comprehensive understanding of the principles and techniques of quantum chemistry and dynamics of excited states.
- Apply excited state chemistry to solve real-world problems in photochemistry, laser physics, and materials science.
- Stay up-to-date with the latest advancements in the field through expert insights and extensive references.
- Enhance your research and development capabilities in fields related to excited state chemistry.

Target Audience

This book is ideal for researchers, graduate students, and advanced undergraduates in chemistry, physics, and materials science. It is also a valuable resource for scientists and engineers working in fields related to photochemistry, laser physics, and molecular dynamics.

Call to Action

Free Download your copy of Quantum Chemistry and Dynamics of Excited States today to delve into the fascinating world of molecular excitation and unlock its potential for groundbreaking research and applications.



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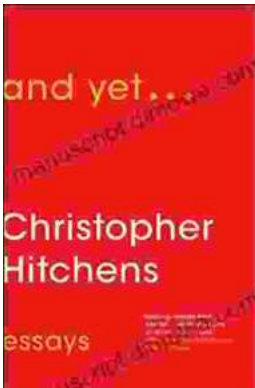
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