Electronic Absorption Spectra Of Radical Ions

#radical ion spectra #electronic absorption #molecular spectroscopy #transient species #quantum chemistry

Explore the unique electronic absorption spectra of radical ions, delving into how these highly reactive species interact with light. This content provides crucial insights for understanding their molecular structure, reactivity, and applications in various fields of chemistry and physics, utilizing advanced spectroscopic techniques for characterization.

Electronic Absorption Spectra Of Radical Ions

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Intro
Lecture 1
Literature
Systems for EPR - cont
The discovery
Electron spin in a magnetic field (Zeeman Effect)
EPR spectrometer frequencies Leiden Berlin
Boltzmann population
Bloch equations - solution

The signal under low power conditions
Typical relaxation times
Field sweep vs Frequency sweep
Instrumentation
Scheme of a CW EPR spectrometer
The cavity (resonator)
Resonator coupling
Detection scheme field modulation
Magnetic fields in CW EPR
Saturation of the EPR signal under CW conditions
Measurements conditions in field sweep experiments
Effect of power
The magnetic interactions resolved in the EPR spectrum
The g factor
Examples of nuclear spins
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Introduction
Angular Momentum
Fine Structure
Magnetic Field
Absorption Spectroscopy
Resonance Condition
Semiquinone Radical
Absorption spectrum
EPR spectrum
High profile lines
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Neils Bohr's Atom
Absorbing
Emitting photons example
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Emission Spectrum
Emission Spectra
Absorption Spectra
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Intro
1. FINDING ALIENS
TRANSITING EXOPLANETS
ABSORPTION AND EMISSION SPECTRA
ELECTRON ENERGY STATES OF HYDROGEN
SERIES

FINE AND HYPERFINE STRUCTURE
OTHER WAYS LIGHT AND MATTER INTERACT
APPLICATIONS COMPOSITION OF SPACE OBJECTS
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Ultra-Fast Electron Diffraction
Magnetic Materials
Electron Microscope
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Intro
Electronic Transitions
Momentum (k) Space Picture
The Spectrum: EXAFS vs. XANES
EXAFS Equation
Uses of EXAFS/XANES
Light Sources: National Laboratories
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Introduction
Kochoffs Laws
Emission Line Spectra
Absorption Line Spectra
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Intro
Types of Spectrum
Types of Line Spectrum
Atomic Spectrum of Hydrogen
Numerical Problem
Find the wavelength of emitted radiation?
Balmer Series
3 Paschen Series
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Atomic Emission Spectra
Bohr's Atomic Model
Quantized Electron
Allowed Electron Energies
Emission of Red Light from Hydrogen
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Working Principle of the Experiment
Calculating the Slope

Rf Oscillator
Signal for the Electron Spin Resonance
Adjust the Phase
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