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Autore	Gerson Fabian
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Nota di contenuto	Electron Spin Resonance Spectroscopy of Organic Radicals; Contents; Preface; Abbreviations and Symbols; A General Part; 1 Physical Fundamentals of Electron Spin Resonance; 1.1 Spin and Magnetic Moment of Electron; 1.2 Zeeman Splitting and Resonance Condition; 1.3 Spin-lattice Relaxation; 1.4 Line-width and Line-form; 2 Paramagnetic Organic Species and Their Generation; 2.1 Spin Multiplicity; 2.2 Neutral Radicals; 2.3 Radical Ions; 2.4 Triplets: Electron-Electron Magnetic Interaction; 3 Electron-Nuclear Magnetic Interaction; 3.1 Nuclear Magnetism; 3.2 Hyperfine Splitting of ESR Signal 4 Spin Density, Spin Population, Spin Polarization, and Spin Delocalization 4.1 Concepts; 4.2 Radicals; 4.3 Radicals; 4.4 Triplet States; 4.5 Calculations of Spin Populations; 5 Multiresonance; 5.1 Historical Note; 5.2 ENDOR; 5.3 TRIPLE Resonance; 5.4 ELDOR; 6 Taking and Analyzing ESR Spectra; 6.1 Instrumentation; 6.2 g(e) Factor; 6.3 Optimal Conditions; 6.4 Unravelling Hyperfine Pattern; 6.5 Assignment and Sign of Coupling Constants; 6.6 Ion Pairing; 6.7 Intramolecular Dynamic Processes; B Special Part; 7 Organic Radicals Centered on One, Two, or Three Atoms

7.1 C-, N-, and O-centered Radicals; 7.2 Si-, P-, and S-centered Radicals; 7.3 CC-, NN-, and OO-centered Radicals; 7.4 NO- and NO(2)-centered Radicals; 7.5 PO-, PP-, SO-, SS-, and SO(2)-centered Radicals; 8 Conjugated Hydrocarbon Radicals; 8.1 Theoretical Introduction; 8.2 Odd Alternant Radicals; 8.3 Odd Nonalternant Radicals and Radical Dianions; 8.4 Even Alternant Radical Ions; 8.5 Even Nonalternant Radical Ions; 8.6 Radicals and Radical Ions with a Perturbed Perimeter; 8.7 Radical Ions of Phanes; 8.8 Radical Ions of Radialenes; 9 Conjugated Radicals with Heteroatoms; 9.1 Neutral Radicals; 9.2 Radical Anions of Electron Acceptors; 9.3 Radical Cations of Electron Donors; 9.4 Radical Cations with Special Structures; 9.5 Radical Ions of Multi-redox Systems; 10 Saturated Hydrocarbon Radicals; 10.1 Radical Cations of Alkanes; 10.2 Structurally Modified Radical Cations; 11 Biradicals and Triplet-state Molecules; 11.1 Biradicals; 11.2 Molecules in Photoexcited Triplet State; 11.3 Molecules in Ground or Thermally Accessible Triplet State; Appendices; A.1 Nitroxyls as Spin Labels and Spin Adducts; A.2 Hyperfine Splitting by Alkali-Metal Nuclei in Counterions of Radical Anions; References
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Sommario/riassunto

Electron spin resonance spectroscopy is the method used to determine the structure and life expectancy of a number of radicals. Written by Fabian Gerson and Walter Huber, top experts in the field of electron spin resonance spectroscopy, this book offers a compact yet readily comprehensible introduction to the modern world of ESR. Thanks to its comprehensive coverage, ranging from fundamental theory right up to the treatment of all important classes of organic radicals and triplet-state molecules that can be analyzed using ESR spectroscopy, this unique book is suitable for users in both research
