1. Record Nr. UNINA9910828597903321

Titolo	Distance measurements in biological systems by EPR / / edited by Lawrence J. Berliner, Gareth R. Eaton and Sandra S. Eaton
Pubbl/distr/stampa	New York ; ; London, : Kluwer Academic/Plenum, c2000
ISBN	0-306-47109-4
Edizione	[1st ed. 2000.]
Descrizione fisica	1 online resource (XVIII, 614 p.)
Collana	Biological magnetic resonance ; ; v. 19
Altri autori (Persone)	BerlinerLawrence J EatonGareth R EatonSandra S
Disciplina	538.364
Soggetti	Electron paramagnetic resonance Magnetic resonance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Distance Measurements by CW and Pulsed EPR -- Relaxation Times of Organic Radicals and Transition Metal Ions -- Structural Information from CW-EPR Spectra of Dipolar Coupled Nitroxide Spin Labels -- Determination of Protein Folds and Conformational Dynamics Using Spin-Labeling EPR Spectroscopy -- EPR Spectroscopic Ruler: the Deconvolution Method and its Applications -- TOAC -- Depth of Immersion of Paramagnetic Centers in Biological Systems -- Determination of Distances Based on T1 and Tm Effects -- Double-Quantum ESR and Distance Measurements -- “2+1” Pulse Sequence as Applied for Distance and Spatial Distribution Measurements of Paramagnetic Centers -- Double Electron-Electron Resonance -- Electron Paramagnetic Resonance Distance Measurements in Photosystems -- Photo-Induced Radical Pairs Investigated Using Out-of-Phase Electron Spin Echo.
Sommario/riassunto	Distance measurements in biological systems by EPR The foundation for understanding function and dynamics of biological systems is knowledge of their structure. Many experimental methodologies are used for determination of structure, each with special utility. Volumes in this series on Biological Magnetic Resonance emphasize the methods that involve magnetic resonance. This volume seeks to provide a critical

evaluation of EPR methods for determining the distances between two unpaired electrons. The editors invited the authors to make this a very practical book, with specific numerical examples of how experimental data is worked up to produce a distance estimate, and realistic assessments of uncertainties and of the range of applicability, along with examples of the power of the technique to answer biological problems. The first chapter is an overview, by two of the editors, of EPR methods to determine distances, with a focus on the range of applicability. The next chapter, also by the Batons, reviews what is known about electron spin relaxation times that are needed in estimating distances between spins or in selecting appropriate temperatures for particular experiments. Albert Beth and Eric Hustedt describe the information about spin-spin interaction that one can obtain by simulating CW EPR line shapes of nitroxyl radicals. The information in fluid solution CW EPR spectra of dual-spin labeled proteins is illustrated by Hassane Mchaourab and Eduardo Perozo.