



# Document details - Applications of Electron Paramagnetic Resonance

1 of 1

[Export](#) [Download](#) [More...](#)

Spin Resonance Spectroscopy: Principles and applications
4 January 2018, Pages 281-347

## Applications of Electron Paramagnetic Resonance ( Book Chapter)

Karunakaran, C., Balamurugan, M., Karthikeyan, M.

VHNSN College (Autonomous), Virudhunagar, India

### Abstract

This chapter focuses on the applications of electron paramagnetic resonance (EPR) to transition metal complexes of  $d^1$  ions including  $Ti^{3+}$ ,  $Mo^{5+}$ ,  $V^{4+}$ ,  $d^3$  ion  $Cr^{3+}$ , EPR of  $Mn^{2+}$  and parallel mode EPR of  $Mn^{3+}$ , EPR of interconversion of low-spin to high-spin iron complexes and rhombogram for its ground state, iron-sulfur exchange coupled clusters and heme containing proteins, EPR of low spin, high-spin octahedral and tetrahedral  $Co^{2+/3+}$  complexes, and EPR of Nickel in +2, +3 and +1 oxidation states. EPR of  $Cu^{2+}$  and its proteins and Jahn-Teller coupling and its types viz., static and dynamic Jahn-Teller distortions, temperature dependence of Jahn-Teller effect, structural elucidation of bis-salicylaldimine-Cu(II) are discussed. Fast-flow, rapid freeze-quench EPR to direct monitoring of free radicals and indirectly by spin traps, types, and applications of spin traps are presented. Electron spin resonance spin labeling, dosimetry, imaging, spin probes in EPR imaging, in vivo EPR imaging, Overhauser enhanced magnetic resonance imaging, and proton electron double resonance imaging are also described. © 2018 Elsevier Inc. All rights reserved.

### Author keywords

EPR imaging   EPR of transition metal ions and their proteins   Fast-flow and rapid freeze-quench EPR   Rhombogram  
Spin labeling   Spin traps

ISBN: 978-012813609-6;978-012813608-9

Source Type: Book

Original language: English

DOI: 10.1016/B978-0-12-813608-9.00006-X

Document Type: Book Chapter

Publisher: Elsevier

Karunakaran, C.; VHNSN College (Autonomous), Virudhunagar, India

© Copyright 2020 Elsevier B.V., All rights reserved.

### SciVal Topic Prominence

Topic:

Prominence percentile:

## Chapters in this book

View Scopus record for this book  
7 chapters found in Scopus

- Principles of Nuclear Magnetic Resonance and Pulsed Nuclear Magnetic Resonance
- Preface
- $^1H$  and  $^{13}C$  nuclear magnetic resonance spectroscopy
- Applications of Nuclear Magnetic Resonance
- Electron Paramagnetic Resonance Spectroscopy
- Advances in Electron Paramagnetic Resonance
- Applications of Electron Paramagnetic Resonance

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert &gt;

Set citation feed &gt;

## Related documents

Find more related documents in Scopus based on:

Authors &gt; Keywords &gt;

---

## About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

## Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

## Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

---

## ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗

All content on this site: Copyright © 2024 Elsevier B.V. ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply. We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies ↗.

