

## Book Review

Schweiger, A., Jeschke, G.: *Principles of Pulse Electron Paramagnetic Resonance*. XXVI, 578 pp. Oxford University Press, Oxford 2001. Hardcover GBP 95.00

Paramagnetic species play a central role in many processes. Among these are transition metal catalysis, photosynthesis, radiation damage, and so on. They can also be used as spin probes to obtain insight into the molecular dynamics of proteins, phase transitions, etc. In all these systems, electron paramagnetic resonance (EPR) and electron nuclear double resonance (ENDOR) are the methods of choice to apply. Of great importance is that EPR and ENDOR spectroscopy are capable of structure characterization in systems lacking long-range order on length scales of 0.5–5 nm which are not easily accessible by other techniques. Modern EPR spectroscopy can access molecular and chemical dynamics down to the nanosecond timescale.

The potential of EPR spectroscopy cannot be fully utilized with the traditional continuous-wave methods due to limitations in spectral and time resolution. Pulse EPR allows one to eliminate the inhomogeneous broadening of spectra which masks the effects arising from intrinsic interactions of paramagnetic particles.

During the last decades pulse EPR has become one of the main driving forces in the application of EPR spectroscopy to new problems.

There are many excellent monographs and textbooks on EPR and ENDOR. However standard EPR textbooks scarcely describe foundations and applications of pulse EPR experiments. This book is a coherent and comprehensive introduction to the methodology of pulse EPR. The book is organized in three parts, which cover the basic theory, the experimental techniques, and the general experimental strategy for solving application problems.

The book is written by scientists who essentially contributed to the development of pulse EPR and who continue to actively work in the field. They are the top experts as concerns the methodology of pulse EPR. This book will serve for a new generation of EPR spectroscopists as a textbook which provides a solid knowledge of the foundations of pulse EPR, the present state of understanding of the methodology of pulse EPR, as a guide-book in this rapidly developing field of science. But this book will be extremely useful not only for beginners. Even experienced practitioners in the field will gain a fresh look from the high-level experts at the opportunities for new applications and further methodical developments.

I am confident that this book will be widely used by radiospectroscopists.

*K. M. Salikhov*