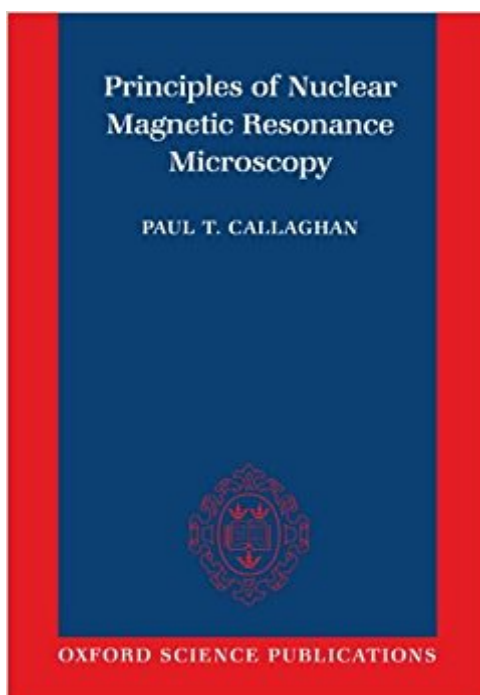


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Principles Of Nuclear Magnetic Resonance Microscopy



Synopsis

Although nuclear magnetic resonance is perhaps best known for its spectacular utility in medical tomography, its potential applicability to fields such as biology, materials science, and chemical physics is being increasingly recognized as laboratory NMR spectrometers are adapted to enable small scale imaging. This excellent introduction to the subject explores principles and common themes underlying two key variants of NMR microscopy, and provides many examples of their use. Methods discussed are not only important to fundamental biological and physical research, but have applications to a wide variety of industries, including those concerned with petrochemicals, polymers, biotechnology, food processing, and natural product processing. The wide range of scientists interested in NMR microscopy will want to own a copy of this book.

Book Information

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Customer Reviews

"By any standards this book is not a 'good read' but a 'good buy' too, and it is clear that it is destined to become a classic of its kind. It is written by an outstandingly able practicing scientist who has incorporated into the text much of that balanced insight which can only be gained by direct experience of the experimental difficulties of the area; that that same scientist has also shared his own sense of excitement, further enhances what would anyway be a wonderful text. . . . Clearly destined to become an NMR classic. I recommend this text without reservation." --The Times Higher Education Supplement
"This book is a joy to read. . . . Clearly, all practitioners of NMR, either 'imaging' or 'spectroscopic,' will be enriched by this book. . . . It is not only the senior experts who

will gain; any graduate student or postdoctoral fellow who has a serious commitment to NMR should consider purchasing a personal copy, since they will need to know the entire contents of this book." --Proceedings RMS

"The text is well-written and thoroughly referenced, with 751 literature citations. It is also well-illustrated with many figures and microscopy images, including four pages of full color images....the text will help bridge the physics gap between solution-state NMR and NMR microscopy. The text would be an excellent addition to the library of any scientist interested in modern NMR experiments. The book could be used very nicely as a text book in a graduate course on NMR microscopy. As the technique of NMR microscopy becomes more common, this book will be useful to an increasing number of a wide variety of scientists." --Journal of Medicinal Chemistry

"Excellent. Callaghan is a major contributor in the area of NMR microscopy. . . . he places the field in its historical context and and systematically develops the principles with keen insight. The result is a rigorous and indeed delightful treatment of NMR microscopy from introductory theory to the latest developments in techniques and instrumentation. It is hard to overemphasize the importance of this book to students and research scientists who are interested in NMR imaging, in NMR studies of diffusion and flow and, especially, in the issues where these areas overlap. There is simply nothing like it for this audience!" --American Scientist

"An excellent book....I expect that the book's largest audience will be researchers with some graduate training in physics, chemistry, or engineering....Well written and authoritative so that readers in other disciplines who do not have a strong mathematics background may still find it rewarding....I would recommend this book to anyone who has a sufficient physical science background to handle the fairly rigorous treatment of the material in the book. It is well written with an extensive bibliography at the end of each chapter..." --Journal of Magnetic Resonance

Paul T. Callaghan is at Massey University, Palmerston North.

Brilliant book written by one the great experts in the field- unfortunately no longer with us.

this is good book for learning about q-space imaging and MRI. general information about MRI might be dated, but also useful.

Dr. Callaghan's work over the past 15 years has been instrumental in developing microscopic applications of NMR imaging. In this text, he expands on the seminal papers that he has published in the field and brings them together into a coherent whole. The veiwpoint of the book is that of a

physicist with a powerful tool looking at physical and biological problems. Of the many texts on MR imaging I believe Dr Callaghan's description of MR physics to be most clear and complete. This book is recommended for physicists and engineers interested in NMR microscopy of course. However I would go on and recommend it for any serious student of MRI wanting a single volume that has a clear description of the fundamental phenomena at work in forming their images.

Wow, I can't believe they are charging \$99 for a softcover!! I bought this book 4 years ago for about \$45 brand new, and now the price is doubled! No doubt this is a very good and useful book to learn the classical theory of NMR in a materials sciences context. NMR diffusion and the formalism of diffusion/flow propagators is clearly explained and should be useful to anyone learning the subject for the first time, or re-learning old forgotten topics.

Excellent book for learning the principles of imaging. I initially tried learning from the book by Mansfield and Morris and found it rather unfocused and unclear. Callaghan's book is clear, focused and very understandable.

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