DESCRIPTION

The content of this volume has been added to emagres (formerly Encyclopedia of Magnetic Resonance) - the ultimate online resource for NMR and MRI.

Up to now MRI could not be used clinically for imaging fine structures of bones or muscles. Since the late 1990s however, the scene has changed dramatically. In particular, Graeme Bydder and his many collaborators have demonstrated the possibility – and importance – of imaging structures in the body that were previously regarded as being "MR Invisible". The images obtained with a variety of these newly developed methods exhibit complex contrast, resulting in a new quality of images for a wide range of new applications.

This Handbook is designed to enable the radiology community to begin their assessment of how best to exploit these new capabilities. It is organised in four major sections – the first of which, after an Introduction, deals with the basic science underlying the rest of the contents of the Handbook. The second, larger, section describes the techniques which are used in recovering the short T2 and T2* data from which the images are reconstructed. The third and fourth sections present a range of applications of the methods described earlier. The third section deals with pre-clinical uses and studies, while the final section describes a range of clinical applications. It is this last section that will surely have the biggest impact on the development in the next few years as the huge promise of Short T2 and T2* Imaging will be exploited to the benefit of patients.

In many instances, the authors of an article are the only research group who have published on the topic they describe. This demonstrates that this Handbook presents a range of methods and applications with a huge potential for future developments.
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**ABOUT THE AUTHOR**

Graeme M Bydder is professor of radiology specializing in magnetic resonance imaging. He has published articles on magnetic resonance techniques, clinical applications of magnetic resonance, image interpretation and related subjects. He is the main developer of UTE.

Professor Ian Young, from Marlborough, who helped develop the Magnetic Resonance Imaging (MRI) technology, has received the Sir Frank Whittle Medal. MRI uses special imaging techniques to take pictures of inside the body.

Professor Young, 72, was one of two authors who published the first MRI-generated image of a head in 1978. He also built the world's first MRI machine to use a super-conducting magnet for imaging, an approach now in almost universal use.

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