

Preface

The modern challenges of food science and technology require a better understanding of the utilisation of food by the human body and the determinants of food quality. We need to know how raw materials, processing, and changes during storage impact upon the sensory and nutritional attributes of foods. Magnetic resonance is well positioned to help address these challenges. This is being achieved through a combination of the following developments:

- Advances in hardware, in particular in terms of technically and economically achievable field strength.
- Advances in data analysis e.g. through the use of complex multivariate protocols.
- Affordability and robustness of instruments, widening the access to magnetic resonance.

The 8th *International Conference on the Applications of Magnetic Resonance in Food Science* was held at The University of Nottingham on the 16th - 19th July 2006. As the principal conference in the field of magnetic resonance in food sciences, the event attracts contributions from internationally acknowledged experts from academia and industry and an audience from all over the world. This edition was inaugurated by a lecture by Sir Peter Mansfield, Medicine Nobel prize laureate for his discoveries in magnetic resonance imaging.

The 8th edition of the proceedings is entitled *From Molecules to Man* in order to truly reflect the breath of the applications of nuclear magnetic resonance in all aspects of food sciences: from the studies of subtle molecular motion modes to macroscopic scale mass transfer during processing and from structure elucidation to authentication, quality and metabonomics.

This book is based on contributions to the conference technical programme. It is structured into four major sections:

- Food in the human body which includes MRI and metabonomics studies.
- Food quality which includes papers on animal metabonomics, structure of food systems, food stability and authentication.
- Food processing with particular emphasis on dynamic processes such as water migration and phase transformations.
- New techniques, novel data analysis and exploitation covering innovations in NMR methodologies, hardware and data analysis, for example using multivariate approaches.

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