DESCRIPTION

This first book to focus on the applications of nanomagnetism presents those already realized while also suggesting bold ideas for further breakthroughs.

The first part is devoted to the concept of spin electronics and its use for data storage and magnetic sensing, while the second part concentrates on magnetic nanoparticles and their use in industrial environment, biological and medical applications. The third, more prospective part goes on to describe emerging applications related to spin current creation and manipulation, dynamics, spin waves and binary logic based on nano-scale magnetism.

With its unique choice of topics and authors, this will appeal to academic as well as corporate researchers in a wide range of disciplines from physics via materials science to engineering, chemistry and life science.

ABOUT THE AUTHOR

Claude Fermon is currently directing the Nanomagnetism and Oxide Laboratory in CEA, France. After an education at the Ecole Normale Supérieure and in the University of Paris VI, France, he has obtained a PhD in the field of nuclear magnetic resonance. His interest is focused on nanomagnetism, spin dynamics in nanometric objects, spin-dependent electronic transport in nanostructures, biomagnetism and spin electronics based magnetic sensors.
Dr. Claude Fermon has received a number of awards, among them the A. Abragam price for the development of neutron reflectivity methods and the A. Poirson price for the development of ultra-sensitive magnetic sensors. He has published more than 130 papers, one book, a number of book chapters and 22 patents.

Marcel Van de Voorde has 40 years’ experience in European Research Organisations including CERN-Geneva, European Commission, with 10 years at the Max Planck Institute in Stuttgart, Germany. For many years, he was involved in research and research strategies, policy and management, especially in European research institutions. He holds a Professorship at the University of Technology in Delft, the Netherlands, as well as multiple visiting professorships in Europe and worldwide. He holds a doctor honoris causa and various honorary Professorships.

He is senator of the European Academy for Sciences and Arts, in Salzburg and Fellow of the World Academy for Sciences. He is a Fellow of various scientific societies and has been decorated by the Belgian King. He has authored of multiple scientific and technical publications and co-edited multiple books in the field of nanoscience and nanotechnology.

SERIES

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