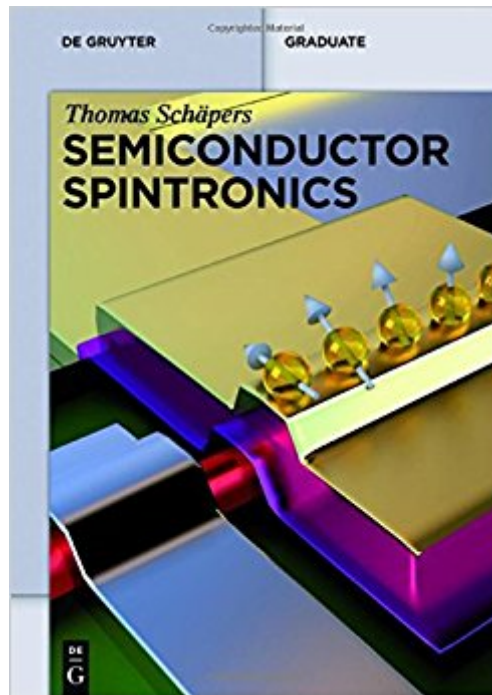




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Semiconductor Spintronics (De Gruyter Textbook)



Synopsis

As the first comprehensive introduction into the rapidly evolving field of spintronics, this textbook covers ferromagnetism in nano-electrodes, spin injection, spin manipulation, and the practical use of these effects in next-generation electronics. Based on foundations in quantum mechanics and solid state physics this textbook guides the reader to the forefront of research and development in the field.

Book Information

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Customer Reviews

Thomas Schapers, Research Center Julich, Germany.

Spintronics belongs to a relatively new branch of solid state electronics and usually is not well known for students of applied faculties. The problem results partially from the complicated theoretical base of underlying quantum effects and, in general, related quantum formalism. Nevertheless, as we know, spintronics evolved into reality and materialized in a form of working devices. The book by Thomas Schapers is an example of the optimized approach to manage this problem of deep understanding by applied scientists, students and even physicists for whom this part of knowledge is not yet known. The book is very well written, in a structural way, starting from fundamentals into the description of working nanodevices, presenting underlying physics useful in presentation of spin-injection effects, interference phenomena, presenting intensively the spin

transistor, quantum Hall effect, and finally describing the recent field of topological insulators. Importantly, the book was written by a single person, an expert, keeping the same style across all chapters. In my opinion the book is the best example of a semiconductor spintronics textbook which can be used for regular didactic purposes or by researchers from industrial laboratories. Prof. Tomasz Blachowicz Silesian University of Technology, Institute of Physics - CSE Gliwice, Poland

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