



## Spin-dependent Transport of Interacting Electrons

By Laßl, Andreas

Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | Analyzing Electronic Properties of Nanodevices | The last four decades have seen a rapid evolution of electronic components towards always smaller and more powerful units. This development has strongly influenced our everyday life by the progress of compact and high-performance electronic equipment like laptops, mobile phones or multimedia devices. But how will this trend evolve in the near future? The modern field of nano-electronics studies the properties of systems at the nanometer scale and opens the way to future applications. In the present book the author theoretically analyzes electronic properties of selected nanosystems taking into account the spin degree of freedom and electron-electron interaction effects. After outlining the widely used Green function formalism, which is the theoretical basis of this work, the transport properties of quantum point contacts are investigated, in particular the so-called 0.7 anomaly. The second part is dedicated to quantum ratchet devices that can rectify charge or spin currents when an alternating voltage is applied. The book addresses students, scientists and engineers familiar with the basic concepts of quantum theory. | Format: Paperback | Language/Sprache: english | 215 gr | 152 pp.



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