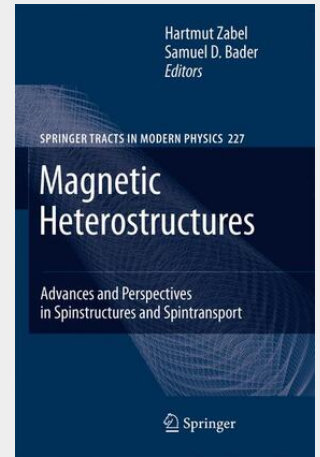


Magnetic Heterostructures

Advances and Perspectives in Spinstructures and Spintransport

Heterostructures consist of combinations of different materials, which are in contact through at least one interface. Magnetic heterostructures combine different physical properties which do not exist in nature. Examples are semiconductors/ferromagnets, superconductors/ferromagnets, or ferromagnets/antiferromagnets. These combinations display new physical properties different from any single one of them. Interlayer exchange coupling, exchange bias, proximity effects, giant magneto-resistance, tunneling magneto-resistance, spin spininjection and spintransport are examples for new physical phenomena, which relay on the combination of various metal, semiconductor, and oxide layers. Heterostructures are generated by stack-wise deposition of these materials layers and by lateral structuring them via lithographic processes. This book provides the first comprehensive overview of an exciting and fast developing field of research, which has already resulted in numerous applications and is the basis for future spintronic devices.

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