



Handbook of Magnetic Materials: Volume 14 (Hardback)

By K. H. J. Buschow

ELSEVIER SCIENCE TECHNOLOGY, United States, 2002. Hardback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****. Magneto-electronics is a novel and rapidly developing field. This new field is frequently referred to as spin-electronics or spintronics. It includes spin-utilizing devices that need neither a magnetic field nor magnetic materials. In semiconductor devices, the spin of the carriers has only played a very modest role so far because well established semiconductor devices are non-magnetic and show only negligible effects of spin. Nanoscale thin films and multilayers, nanocrystalline magnetic materials, granular films, and amorphous alloys have attracted much attention in the last few decades, in the field of basic research as well as in the broader field of materials science. Such heterogeneous materials display uncommon magnetic properties that virtually do not occur in bulk materials. This is true, in particular with respect to surface (interface) magnetic anisotropy and surface (interface) magnetostrictive strains and giant magnetoresistance. The local atomic arrangement at the interface differs strongly from that in the bulk. The local symmetry is lowered, so that some interactions are changed or are missing altogether. The interface atoms may be envisaged as forming a new phase and some properties characteristic of...



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