



Origin of Magnetism in Oxide-Based Diluted Magnetic Semiconductors

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LAP Lambert Academic Publishing Aug 2014, 2014. Taschenbuch. Condition: Neu. Neuware - Spintronics, short notation for spin-based electronics, is a research area which seeks to exploit the spin of electrons in addition to their charge in semiconductors. The basic idea is to combine the characteristics of existing magnetic devices with semiconductor devices in order to realize a new generation of devices that are much smaller, more energy efficient, non-volatile, and much faster than presently available. The key requirement in the development of such devices is an efficient injection, transfer and detection of spin-polarized current from a ferromagnetic material into a semiconductor. Due to the well known problem of a resistance mismatch at metal/semiconductor interfaces, hindering an effective spin injection, much interest is concentrated on the development of room-temperature ferromagnetic semiconductors. The aim of this book is to shed some light on the origin of room temperature ferromagnetism in oxide-based DMS materials whether it originates from clusters or from uniformly distributed magnetic atoms. 124 pp. Englisch.

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