

MAGNETIC BIAS AND THERMALLY INDUCED MAGNETIZATION REVERSAL IN THE RARE-EARTH ORTHOERRITE

Within the framework of a mean field theory the origin of a spin- reorientation transition, compensation point, magnetic bias and thermally induced spin reversal have been investigated for rare-earth orthoferrites. It is considered the most general case of two sublattice antiferromagnetic with exchange anisotropy and rare-earth - iron interactions. A small applied field appears to be a source of the additional anisotropy from canting of the sublattice moments. This anisotropy leads to imbalance of free energy for two types of domains. As a result we have a spin jump near the compensation point. A similar phenomenon is observed experimentally in the erbium orthoferrite.

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