

# Introduction to Multiferroics

Multiferroic materials are an interesting group of substances which combine magnetic and electric polarisations. This particular combination allows the creation of a magnetic moment by the application of an applied electric field, as well as the creation of a polarisation with the application of a magnetic field. Such a possibility has sparked the imagination of scientists interested in the design of electronic devices, as it would allow, among many other possibilities, the writing of a magnetic memory bit by an electric field, while still permitting the reading process to make use of a magnetic signal.

An introduction is given to the physics of multiferroic materials. Their properties are discussed and mechanisms are shown which could give rise to multiferroic behaviour on a macroscopic level. Examples are given from the literature of multiferroic materials, their measurements and underlying physics. This introduction is aimed at non-specialists in the field of multiferroic materials.