Download Crystalline Electric Field Effects In F Electron Magnetism

A magnetic field is a vector field that describes the magnetic influence of electrical currents and magnetized materials. In everyday life, the effects of magnetic fields are often seen in permanent magnets, which pull on magnetic materials (such as iron) and attract or repel other magnets.Magnetic fields surround and are created by magnetized material and by moving electric charges (electric ...Magnetism is a class of physical phenomena that are mediated by magnetic fields. Electric currents and the magnetic moments of elementary particles give rise to a magnetic field, which acts on other currents and magnetic moments. The most familiar effects occur in ferromagnetic materials, which are strongly attracted by magnetic fields and can be magnetized to become permanent magnets ...Magnetism - Magnetic field of steady currents: Magnetic fields produced by electric currents can be calculated for any shape of circuit using the law of Biot and Savart, named for the early 19th-century French physicists Jean-Baptiste Biot and Félix Savart. A few magnetic field lines produced by a current in a loop are shown in Figure 1. These lines of B form loops around the current.Crystal - Magnetism: Electrons are perpetually rotating, and, since the electron has a charge, its spin produces a small magnetic moment. Magnetic moments are small magnets with north and south poles. The direction of the moment is from the south to the north pole. In nonmagnetic materials the electron moments cancel, since there is random ordering to the direction of the electron spins.