Stuttgarter Physikalisches Kolloquium

Max-Planck-Institut für Intelligente Systeme
Max-Planck-Institut für Festkörperforschung
Fachbereich Physik, Universität Stuttgart

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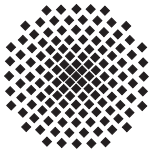

Dienstag, 10. Dezember 2019 | **16.00 Uhr c.t.** | **Hörsaal 2D5**

Stuttgarter Max-Planck-Institute, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Gastgeber: Prof. Gisela Schütz, Max-Planck-Institut für Intelligente Systeme, Telefon: 0711 689-1950

Ion Beam Modification of Magnetic Materials

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Abstract

In recent years the tailoring of magnetic properties by means of ion irradiation and implantation techniques has become fashionable. Early investigations relied on the fact that the perpendicular magnetic anisotropy of Co/Pt multilayers depend sensitively on the interface sharpness. Subsequently also the ion induced modification of exchange bias phenomena as well as interlayer exchange coupling have been investigated. For single magnetic films ion implantation has been used to reduce the Curie temperature and hence the saturation magnetization. Nowadays also the reverse process, i.e. the creation of nanomagnets within special binary alloys is employed. In combination with lithography or with focused ion beams a pure magnetic patterning becomes possible leading to hybrid magnetic materials with properties different from both, the ion irradiated as well as the untreated material. Even ion induced chemical reduction can be employed to create a nanomagnetic pattern. An overview of the present status in this research field will be given.