Festkörperkolloquium und Seminar TRR 80 Kolloquium

am Donnerstag, 21.06.2012

um 17:15 Uhr

spricht

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über das Thema

The world of Heusler compounds

Heusler compounds are a distinct class of intermetallic materials since they show a large variety of physical phenomena with the electrical and magnetic properties ranging from metals to semiconductors and from ferrimagnets to half-metallic ferromagnets [1,2].

In this talk, I will highlight recent work on Heusler compounds for spintronics ($Co_2Mn_{0.5}Fe_{0.5}Si$) for thermoelectrics ($NiZr_{0.5}Hf_{0.5}Sn$), and for shape memory devices (Mn_2NiGa). A successful application of Heusler materials, however, requires a detailed knowledge of the interplay between their structure and their intrinsic magnetic and electronic properties. In order to separate intrinsic and extrinsic properties, high quality single crystalline model systems are required. The control of the relations between structure and physical properties of these selected model systems is achieved by gaining knowledge of the local structure by means of Nuclear Magnetic Resonance (NMR). NMR probes the direct local environments of the active atoms and is thus able to resolve neighboring shells providing a unique tool to study the (local) structural properties of various Heusler materials. In some cases, one even finds Heusler compounds where they are not expected. During this talk, we will cross from macroscopic Heusler single crystals over to nanoscopic Heusler materials.

im HS 3 im Physik Department

ab 17:00 Uhr Kaffee vor dem Hörsaal

Einführung: C. Pfleiderer