

## Kolloquium der TF am 27.01.2014

Sehr geehrte Damen und Herren,

wir laden Sie herzlich zum Kolloquium der TF am **27.01.2014 um 17:15 Uhr** ein. Auf Einladung von *Herrn Prof. Dr. J. McCord* hält

### **Prof. Dr. Jürgen Fassbender Helmholtz-Zentrum Dresden-Rossendorf**

einen Vortrag mit dem Titel:

#### **„Nanomagnets – created and tailored by ions“**

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 [1]. Subsequently also the ion induced modification of exchange bias phenomena as well as interlayer exchange coupling has been investigated [2]. For single magnetic films ion implantation has been used to reduce the Curie temperature and hence the saturation magnetization [3]. Nowadays also the reverse process, i.e. the creation of nanomagnets within special binary alloys is employed [4,5]. In combination with lithography a pure magnetic patterning becomes possible [6] leading to hybrid magnetic materials [7] 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 [8,9].

In an alternative route to design magnetic properties periodically modulated substrates are used. Low energy ion erosion provides an easy technology to create modulated surfaces with periods ranging from 20 to 200 nm. Due to the broken translational invariance new anisotropy contributions appear [10] and additional relaxation channels are opened [11].

An overview of the present status in this research field will be given.

#### References:

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5. R. Bali et al., Nano Lett. in press.
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**Veranstaltungsort ist wie immer der Vortragsraum der Technischen Fakultät („Aquarium“) im Gebäude D, Kaiserstraße 2, 24143 Kiel. Wir erwarten eine interessante Veranstaltung und freuen uns über Ihr Erscheinen.**

Mit freundlichen Grüßen  
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