



TRR 80 Sonderseminar

Am Mittwoch, den 13. Juni um 17:15 Uhr

spricht

Dr. Gustav Bihlmayer

Peter Grünberg Institut, FZ Jülich

über das Thema

***Some DFT insights in oxide interfaces with polar discontinuities:
domain walls, ferroelectric surfaces and the DyScO₃/SrTiO₃ interface***

The realization of a two-dimensional electron gas (2DEG) at oxide interfaces has attracted considerable attention in the last years. On the other hand, systems, where a 2DEG can be naively expected, turn out to be often insulating even on a microscopic scale. Head-to-head domain walls or ferroelectric surfaces with perpendicular polarization are examples that are investigated with density functional theory calculations. From the comparison of our results to experimental data we can analyse microscopic models that allow for insulating ferroelectric interfaces or surfaces [1]. While defect formation seems to be common in the ferroelectrics, at the DyScO₃ / SrTiO₃ interface chemical intermixing or the formation of a polarization in SrTiO₃ keeps the structure insulating [2]. We discuss similarities and differences to the LaAlO₃ / SrTiO₃ interface.

[1] I. Krug et al., Appl. Phys. Lett. 97, 222903 (2010)

[2] K. Rahmanizadeh et al., Phys. Rev. B 85, 075314 (2012)

Gäste sind herzlich willkommen.

Der Vortrag findet im Hörsaal C419, Theresienstr. 41, LMU München statt.

Gastgeber: PD Dr. Rossitza Pentcheva
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