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EINLADUNG zum IFP-SEMINAR

Entropy, magnetism and thermopower in selected oxides and chalcogenides

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Host: Silke Bühler-Paschen
Termin: Donnerstag, 22.01.2026, 16:00 Uhr
Ort: TU Wien, Freihausgebäude
Wiedner Hauptstraße 8-10, 1040 Wien
DB 03 E11 (gelber Bereich, 3. OG)

Abstract:

The Seebeck coefficient can be used as a powerful probe of the electronic properties of a material as it strongly depends on the band structure, the nature of carriers, or the different transport mechanisms. Moreover it is also a good probe of the entropy in the material, and can thus be sensitive to magnetic entropy. In this talk, the Seebeck coefficient of several examples of oxides will be presented to highlight the peculiar role of spin and orbital entropy in these correlated materials, focusing on the specific case of ruthenates [1, 2]. The impact of magnetism on the Seebeck effect will also be shown in less correlated sulfides such as pyrites and thiospinels [3]. Finally the results obtained in metal rich sulfides, which can also present an interesting interplay between magnetism and transport as in the shandite $\text{Co}_3\text{Sn}_2\text{S}_2$, will be presented focusing here on the case of metallic samples [4].

[1] : F. Pawula et al., in 'Thermoelectric Energy Conversion', Edited by R. Funahashi, Elsevier (2021).

[2] : R. Daou et al., Phys. Rev. B 108, L121106 (2023).

[3] : S. Hébert et al., ZAAC 648, e202200045 (2022).

[4] : L. Agnarelli et al., Chem. Comm, 10.1039/d5cc03147h (2025).

Supported by:

