

# PHYSIKALISCHES KOLLOQUIUM

Mittwoch, den 11.04.2012, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013

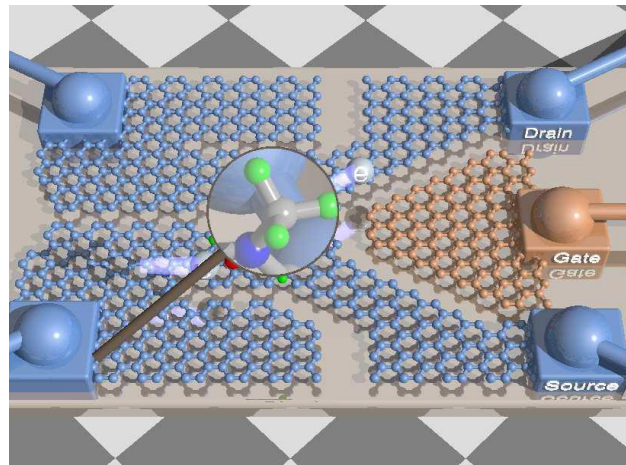


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## Charge migration and heat phenomena in biomolecular systems: two sides of the same medal?

Charge migration is a ubiquitous phenomenon with profound implications throughout many areas of chemistry, physics, biology and materials science. The long-term vision of designing functional materials with pre-defined molecular scale properties has triggered an increasing quest to identify prototypical systems where truly intermolecular conduction pathways play a fundamental role. Such pathways can be formed due to molecular organization of various organic materials and are widely used to discuss electronic properties at the nanometer scale.



Molecular systems on the other hand could also efficiently provide strategies for phonon transport which results in the possibility of tailoring its thermal transport properties. In this talk, I will illustrate how recent important contributions to unimolecular electronics research can help -on a similar footing- in describing heat conductance and the possible consequences of exploiting such effects.

[1] S. M. Avdoshenko, C. G. da Rocha, G. Cuniberti; *Nanoscale*, (2012), arXiv:1201.3519

[2] C. Sevik, H. Sevincli, G. Cuniberti, C. Tagin; *Nano Letters* **11**, 4971 (2011)

[3] G. Cuniberti, et.al; *Nano Letters* **10**, 4929 (2010)