

## Studentische Hilfskraft/ Student Assistant

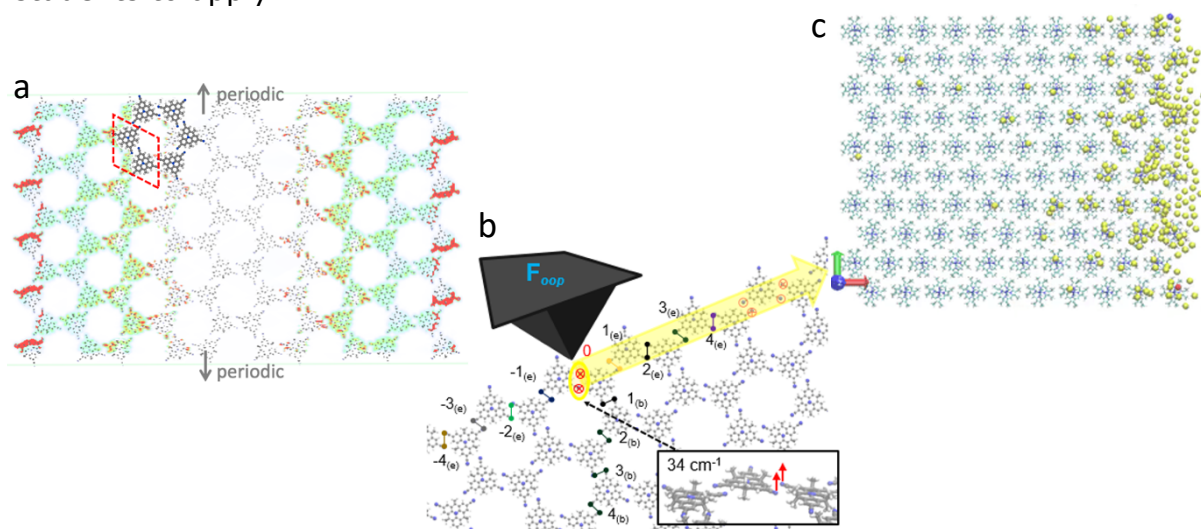
Dr. J. D. Cojal Gonzalez, Prof. C.-A. Palma, Prof. J. P. Rabe

# Topological transport in supramolecular architectures

Keywords: *Supramolecular, Molecular dynamics, python*

Nobel Prizes in Chemistry (1987) and Physics (2016) were awarded for advances in *supramolecular chemistry* and the discovery of *topological phases of matter*, respectively. We recently showed, employing classical atomistic calculations, that the edges of a chiral supramolecular nanoribbon can host topological edge phonon states (**Figure 1** and *J. Phys. Chem. Lett.*, 10, 19, 5830-5835, **2019**). In the Cluster of Excellence »Matters of Activity« we call for an open multidisciplinary perspective in what science and technology represent for a collective of social individuals environing a society. More specifically, in the project »Molecular Filtering« we are exploring new filtering notions, applications and mathematical descriptors from the organized assembly of molecules at interfaces. Aided by the vast universe of supramolecular materials, supramolecular thermal waveguides, diodes, and logics are envisaged as emerging applications.

We are looking for an advanced student from physics, mathematics, chemistry or computational sciences with knowledge of python, scripting skills and basic linux tools (script, bash, sed, awk). We specifically encourage qualified female students to apply.



**Figure 1.** **a** Chiral phonon map in a supramolecular ribbon **b** Simulated excitation of a chiral phonon **c** Potential system for a Molecular Filter

Contact: [cojal@physik.hu-berlin.de](mailto:cojal@physik.hu-berlin.de)