

Interfaces with functional organic molecules

Petra Tegerer

*Physikalisch-Chemisches Institut, Ruprecht-Karls-Universität Heidelberg,
Im Neuenheimer Feld 253, 69120 Heidelberg*

Semiconducting materials based on organic molecules are being explored for a number of fascinating applications in optoelectronic devices such as organic photovoltaic cells, organic light emitting diodes, or organic thin film transistors. Knowledge of the electronic and geometrical properties of the molecular species in contact with a substrate is necessary in order to understand, improve and optimize the device performance.

In this talk I will present results on two classes of organic molecules adsorbed on surfaces, namely molecular switches and thiophene-based species. Molecular switches possess the ability to undergo reversible changes between different molecular states and accordingly molecular properties by excitation with light or other external stimuli. Mounting these compounds at surfaces or interfaces of solids open the perspective to design functional surfaces, whose molecular properties can be changed at will between various states. Thiophene-based materials are highly relevant for small-molecule-based solar cells.