



Molecular Motors and Switches at Surfaces

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Abstract

Molecular motors and switches form the basis of many important biological processes.

In contrast to these solutions chosen by Nature for achieving complex tasks, mankind's present-day technologies function exclusively through their static or equilibrium properties. One can therefore easily anticipate that the controlled movement of molecules or parts of molecules offers unprecedented technological possibilities for the future.

In this presentation I shall show how to build molecular engines that allow movements at the molecular level to be coupled to the macroscopic world, e.g. to transport macroscopic objects like drops of liquid over a surface.

I shall also discuss self-assembled monolayers of switches that can be addressed with light and charge transfer and demonstrate how such systems can be employed for “read and write” functions.