DNA is not only a wonderful material for nanoscale construction, its hybridization or hydrolysis can be used to provide energy for synthetic molecular machinery. With DNA it is possible to design and build three-dimensional scaffolds, to attach molecular components to them with sub-nanometre precision – and then to make them move. I shall describe our work on assembly pathways, on autonomous, biomimetic molecular motors powered by chemical fuels and the use of synthetic molecular machinery to control covalent chemical synthesis. I shall also discuss the use of kinesin motor proteins to power synthetic devices.

Prof. Turberfield will serve as the faculty opponent in the defense of Cassandra Niman's PhD thesis "Nano- and Microstructures for Studies of Model Biological Systems" on Friday, November 21, 9.15 am, in Rydbergsalen. Welcome!

Host: Heiner Linke (Solid State Physics)