**Fragenkatalog**

Introduction to Nanotechnology (134.152)

Ille C. Gebeshuber, TU Wien

24.1.2019

1. **Man-made *vs.* natural nanoscience/nanotechnology.**
* Name similarities and differences.
1. **Bottom-up *vs.* Top-down approach.**
* What do these concepts describe in relation to nanotechnology?
1. **Scanning Probe Microscopy.**
* What is it?
* In which aspects is it different to other microscopy techniques?
* Give some examples for SPM methods.
1. **Langmuir-Blodgett Films.**
* What are they?
* For what can we use them?
1. **Nanorobots**
* What are they?
* Examples
1. **Supramolecular chemistry.**
* What is it?
* In which aspect is it different from conventional chemistry?
1. **Actuation @ the nanoscale.**
* Name the three main ways to achieve actuation @ the nanoscale (in engineering).
* Name some applications.
1. **Biomimetics**
* What is it?
* Name three examples in the areas of 1. materials, 2. structures and 3. processes.
1. **Structural colours.**
* What are they?
* Give some examples of organisms with structural colours and name the physical mechanisms responsible for the structural coloration.
1. **Carbon nanotubes (CNTs).**
* In which aspects are they different from bulk carbon materials such as coal?
* Give some examples for CNTs.
* How are they produced?
* How can they be used in science, medicine or engineering?
1. **EHS.**
* What denotes the abbreviation “EHS” in “EHS aspects of nanotechnology”?
* In which aspect is nanotoxicology different and more complicated than conventional toxicology?
1. **Biomimetics of plant surfaces**
* Name one interesting aspect of plants that is mimicked in technology.
* Why are plant wax crystals so interesting?
* Give some examples of applications of plant wax crystals in technology.