**Fragenkatalog**

Introduction to Nanotechnology (134.152)

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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.