Manipulation of self-assembly amyloid peptide nanotubes by dielectrophoresis (DEP) - DTU Orbit (27/01/2019)

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Self-assembled amyloid peptide nanotubes (SAPNT) were manipulated and immobilized using dielectrophoresis. Micro-patterned electrodes of Au were fabricated by photolithography and lifted off on a silicon dioxide layer. SAPNT were manipulated by adjusting the amplitude and frequency of the applied voltage. The immobilized SAPNT were evaluated by SEM and atomic force microscopy. The conductivity of the immobilized SAPNT was studied by I-V characterization, for both single SAPNT and bundles. This work illustrates a way to manipulate and integrate biological nanostructures into novel bio-nanoassemblies with concrete applications, such as field-effect transistors, microprobes, microarrays, and biosensing devices.

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