Manipulation of self-assembly amyloid peptide nanotubes by dielectrophoresis (DEP)

**Manipulation of self-assembly amyloid peptide nanotubes by dielectrophoresis (DEP)**

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.

**General information**
Publication status: Published
Organisations: Nanoprobe Group, NanoSystems Engineering Section, Department of Micro- and Nanotechnology, Nano-Bio Integrated Systems Group, Biomedical Micro Systems Section
Contributors: Castillo, J., Tanzi, S., Dimaki, M., Svendsen, W. E.
Pages: 5026-5032
Publication date: 2008
Peer-reviewed: Yes

**Publication information**
Journal: Electrophoresis
Volume: 29
Issue number: 24
ISSN (Print): 0173-0835
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.706 SNIP 0.991
Web of Science (2008): Indexed yes
Original language: English
Keywords: Dielectrophoresis, Self-assembly, Bionanotechnology, Peptide nanotubes
DOIs:
10.1002/elps.200800260
Source: orbit
Source-ID: 234029
Research output: Contribution to journal → Journal article – Annual report year: 2008 → Research → peer-review