

Efficient assembly of semiconducting SWNT tips by dielectrophoresis

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There are several advantageous over the properties of semiconducting single-walled carbon nanotubes (SWNT). However, the handling is still problems, and a SWNT tip is available for significant elements with superior electrical as well as thermal properties. Assembly of a SWNT tip was obtained through the dielectrophoresis force. DEP is the effective method that can be used to produce SWNT tip. In this process, neutral particles under an electric field having a polarity move to the strongest magnetic fields. Therefore, we applied this concept to attach pure semiconducting SWNTs (sc-SWNT) in which metallic nanotubes had been separated by density-gradient ultracentrifugation. This aligned homogeneous SWNT tips are promising applications as a photovoltaic and highly efficient exciton energy transfer.