Carbon nanotube solar power generation

1. Introduction. Solar energy is attracting increasing attention because of its potential applications in electricity generation [1], [2], wastewater purification [3], seawater ...

Thermoelectric generators (TEGs) produce electricity from heat energy 1,2,3,4, with conventional TEGs connecting n- and p-type materials in series via metal electrodes 5,6,7,8.Placing one end of a ...

OverviewSingle wall carbon nanotubes as light harvesting mediaCarbon nanotube composites in the photoactive layerCarbon nanotubes as a transparent electrodeCNTs in dye-sensitized solar cellsSee alsoSingle wall carbon nanotubes possess a wide range of direct bandgaps matching the solar spectrum, strong photoabsorption, from infrared to ultraviolet, and high carrier mobility and reduced carrier transport scattering, which make themselves ideal photovoltaic material. Photovoltaic effect can be achieved in ideal single wall carbon nanotube (SWNT) diodes. Individual SWNTs can form ideal p-n junction diodes. An ideal behavior is the theoretical limit of performance for any diode, ...

1 Introduction. The atomic structure of a single walled carbon nanotube (SWCNT) is described by their chirality and is defined by the two integers (n,m), which describe the theoretical "roll-up" ...

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