

New pathways to tailor the properties of carbon nanotubes

Among the various nano-carbon allotropes, single-walled carbon nanotubes (SWNTs) step up for their mechanical endurance and their optical and electronic properties, trademarks of their quantum nature. SWNTs come in different chiral species, each of them with their distinctive electronic character, providing a rich field to compare theoretical predictions and experimental validations. Despite their structure-properties features have been thoroughly investigated, their customization is still actively under development. Straightforward, reliable, and reproducible protocols to adapt their properties to targeted applications are still missing. Here we focus on the approach we developed to control the amount of charges injected in each SWNTs at the single nanotube level and how to exploit this for targeted applications.

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Track Classification : Condensed Matter