



## Boosting electrical conductivity in a gel-derived material by nanostructuring with trace carbon nanotubes

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### Résumé en anglais

An organogelator with two distinct [small pi]-functional units is able to incorporate carbon nanotubes into its mesh of fibres in the gel state. The morphology of the material derived from this nanocomposite after evaporation of the solvent is a complex mesh of fibres which is clearly different from the pure gelator. This feature indicates a role of the nanotubes in assisting the formation of a fibre structure in the gel thanks to their interaction with the pyrene units in the organogelator. The nanocomposite conducts electricity once the p-type gelator is doped with iodine vapour. The change in morphology caused by the carbon material increases the conductivity of the material compared with the purely organic conducting system. It is remarkable that this improvement in the physical property is caused by an extremely small proportion of the carbon material (only present at a ratio of 0.1% w/w). The practically unique properties of TTF unit allow measurements with both doped and undoped materials with conducting atomic force microscopy which have demonstrated that the carbon nanotubes are not directly responsible for the increased conductivity.

URL de la notice <http://okina.univ-angers.fr/publications/ua2788> [5]

### Liens

- [1] <http://okina.univ-angers.fr/david.canevet/publications>
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=2680](http://okina.univ-angers.fr/publications?f[author]=2680)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=2681](http://okina.univ-angers.fr/publications?f[author]=2681)
- [4] <http://okina.univ-angers.fr/marc.salle/publications>
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