


Internship proposal 2009-2010

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Charge transport in carbon nanowires: an admittance spectroscopy approach.

Scientific project : There is today an enormous interest in the size dependent transport properties of nanostructured materials. These materials are revealing new and unexpected physical properties as the nanometer sized dimension decreases. Moreover, in the case of wired structures new and interesting transport phenomena are active as a consequence of the wire length. Admittance spectroscopy on a wide frequency range, in the GHz range has demonstrated to be useful to understand charge transport mechanisms in such structures.

The present project proposes to analyze carbon nanowires fabricated starting from methane/benzene mixture inside a CVD furnace. Carbon nanowires are produced by using a Fe+3 catalyst on Si/SiO₂ patterned substrates with Gold/Chromium electric contacts.

Techniques in use : Admittance spectroscopy up to 12 GHz

Applicant skills :

Granted internship : yes

C'nano IdF laboratory (France only) :

Possibility for a thesis : yes , financial support possible after selection according to national rules.

Amount of the grant: approximately 13640 €/year (previdential contribution shall be deducted).