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## Semiconducting single wall carbon nanotubes investigated by photoconductivity and electromodulation spectroscopy

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Using semiconducting single wall carbon nanotubes with well defined chiral index  $(n,m)$ , the photo-carrier generation mechanisms (essential in photoconductor and photovoltaic devices) and the Stark effects (essential in non-linear optical and electro-optical effects) have been investigated by photoconductivity and electromodulation spectroscopy. This achievement was made possible, because very recently, we have developed a technique which selectively extract semiconducting SWNT with a limited extent of chiral indexes without detectable traces of m-SWNT, from HiPCO or CoMoCat samples using polyfluorene as an extracting agent assisted by sonication and ultracentrifugation techniques<sup>1,2</sup>.

[1] N. Izard, S. Kazaoui, K. Hata, T. Okazaki, T. Saito, S. Iijima, N. Minami, Appl. Phys. Lett. 92 (2008) 243112

[2] A. Nish, J.-Y. Hwang, J. Doig, R.J. Nicholas, Nat. Nanotechnol. 2 (2007) 640

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