

Carbon Nanotubes and Graphene have attracted great interest due to its unique physical properties such as high charge carrier mobility. These properties have incentive research towards many potential applications in fields as semiconductors, sensor technologies or optoelectronics. Thus, it is important to modulate the electrical and optical properties, together with tuning the band-gap and the resulting work function. Chemical functionalization of Carbon Nanotubes and graphene allows controlling its electronic properties. In this communication, we present some examples of our work in this field with Carbon Nanotubes, Carbon Nanohorns and graphene,

References

- [1] M. Barrejón, M. Vizuete, M. José Gómez-Escalonilla, J. L. G. Fierro, I. Berlanga, F. Zamora, G. Abellán, P. Atienzar, J.-F. Nierengarten, H. García, F. Langa *Chem. Commun.* 2014, 50, 19053.
- [2] M. Barrejón, A. Primo, M. J. Gómez-Escalonilla, J. L. García-Fierro, H. García, F. Langa *Chem. Commun.* 2015, 51, 16916.
- [3] L. M. Arellano, L. Martín-Gomis, H. B. Gobeze, M. Barrejón, D. Molina, M. J. Gómez-Escalonilla, J. L. G. Fierro, M. Zhang, M. Yudasaka, S. Iijima, F. D'Souza, F. Langa, Á. Sastre-Santos. *J. Mater. Chem. C.* 2015, 3, 10215.
- [4] M. Barrejón, H. B. Gobeze, M. J. Gómez-Escalonilla, J. L. G. Fierro, M. Zhang, M. Yudasaka, S. Iijima, F. D'Souza, F. Langa *Nanoscale* 2016, 8, 14716.
- [5] M. Barrejón, M. J. Gómez-Escalonilla, J. L. G. Fierro, P. Prieto, J. R. Carrillo, A. M. Rodríguez, G. Abellán, M. C. López-Escalante, M. Gabás, T. López-Navarrete, F. Langa *Phys Chem Chem Phys* 2016, 18, 29582.

Figures

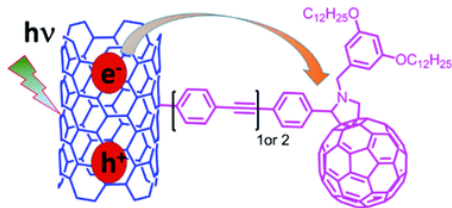


Figure 1: SWCNT-C60 hybrid (ref. 4)

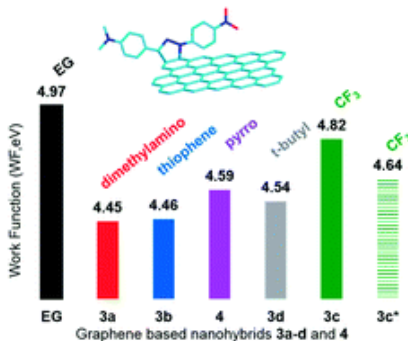


Figure 2: Modulation of work function of graphene by functionalization (ref. 5)