

## Recent advances in Pyrazolino[60]fullerene systems

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We have shown that pyrazolino[60]fullerenes (Figure 1) can be easily prepared in one pot from hydrazones by 1,3-dipolar cycloaddition of the nitrileimines, prepared *in situ* from the hydrazones, to C<sub>60</sub>.<sup>1</sup> Electrochemical studies show that this family of compounds presents better electron acceptor properties than the parent C<sub>60</sub>.<sup>2</sup> Photophysical investigations have revealed that efficient electron transfer process take place from the sp<sup>3</sup> Nitrogen atom of the pyrazoline ring.<sup>3</sup>

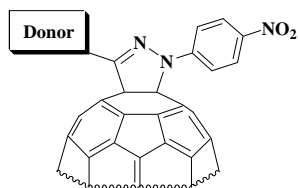


Figure 1

Phenylenevinylene dendrimers attached to a C<sub>60</sub> core<sup>4</sup> through a pyrazoline bridge show that strong interaction between both moieties exist and the competence between energy and charge transfer process in the excited state can be envisaged by analysis of the fluorescence spectra.

In this communication, we present our last results on the synthesis and properties of new Donor-C<sub>60</sub>-donor systems (Figure 2) as well as on the synthesis and properties of Phenylenevinylene fullerodendrimers (Figure 3)

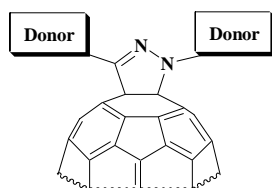


Figure 2

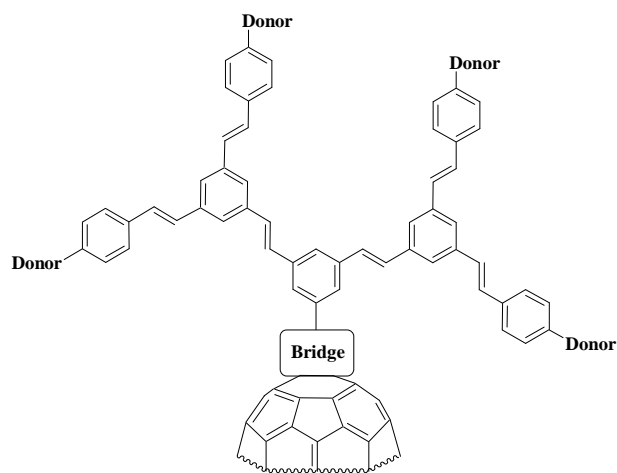


Figure 5

<sup>1</sup> a) P. de la Cruz, A. Díaz-Ortiz, J.J. García, M.J. Gómez-Escalonilla, A. de la Hoz and F. Langa, *Tetrahedron Lett.*, **40**, 1587 (1999); b) F. Langa, P. de la Cruz, E. Espíldora, A. de la Hoz, J. L. Bourdelande, L. Sánchez, N. Martín, *J. Org. Chem.*, **66**, 5033 (2001); c) E. Espíldora, J.L. Delgado, P. de la Cruz, A. de la Hoz, V. López-Arza and F. Langa, *Tetrahedron*, **58**, 5821 (2002); d) M.J. Gómez-Escalonilla, F. Langa, J.M. Rueff, L. Oswald and J.-F. Nierengarten, *Tetrahedron Lett.*, **43**, 7507 (2002).

<sup>2</sup> F. Langa, P. de la Cruz, J.L. Delgado, M.J. Gómez-Escalonilla, A. González-Cortés, A. de la Hoz and V. López-Arza, *New J. Chem.*, **26**, 76 (2002).

<sup>3</sup> N. Armadori, G. Accorsi, J.P. Gisselbrecht, M. Gross, V. Krasnikov, D. Tsamouras, G. Hadziioannou, M.J. Gómez-Escalonilla, F. Langa, J.F. Eckert and J.F. Nierengarten, *J. Mat. Chem.*, **12**, 2077 (2002).

<sup>4</sup> F. Langa, M.J. Gómez-Escalonilla, E. Díez-Barra, J.C. García-Martínez, A. de la Hoz, J. Rodríguez-López, A. González and V. López-Arza, *Tetrahedron Lett.*, **42**, 3435 (2001).