



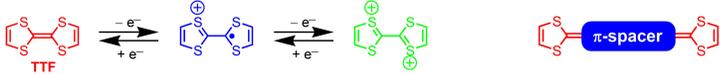
Synthesis and Characterization of Extended Tetrathiafulvalenes with Acetylenic Cores



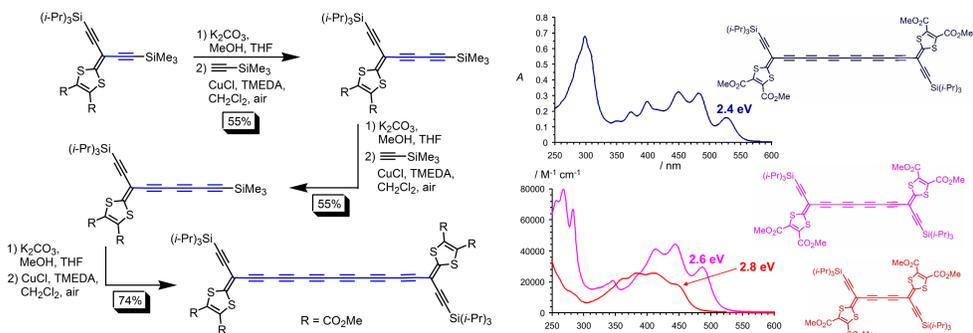
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Tetrathiafulvalene (TTF)

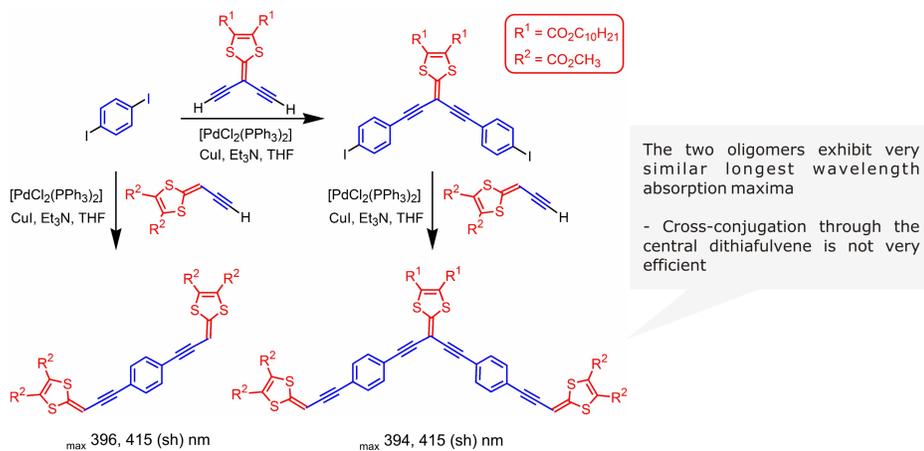
Tetrathiafulvalene (TTF) is a good electron donor that has been exploited widely in materials and supramolecular chemistry. The properties can be finely tuned by incorporation of a conjugated spacer between the two dithiole rings. Here we present the synthesis and properties of a large selection of acetylenic TTF scaffolds.



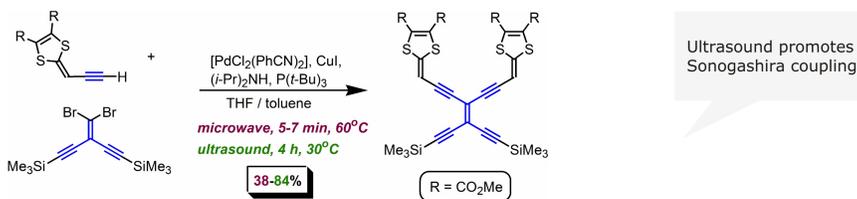
Alkyne-Extended TTFs



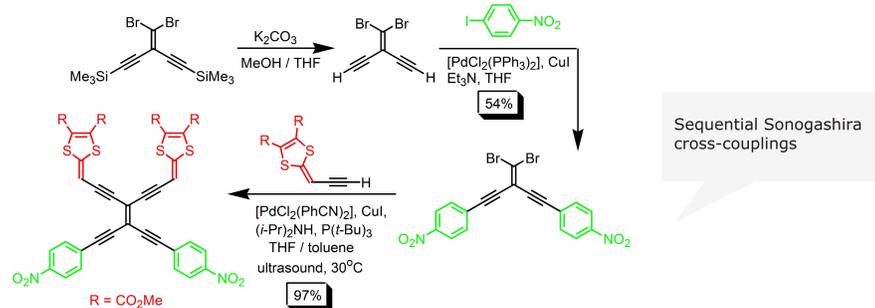
Oligomeric Dithiafulvenes



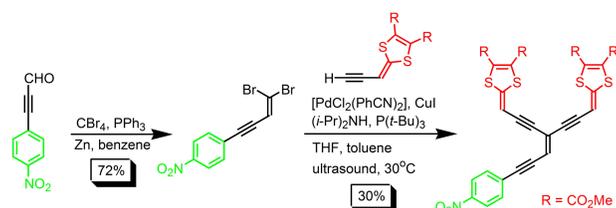
Tetraethynylene Extended TTFs



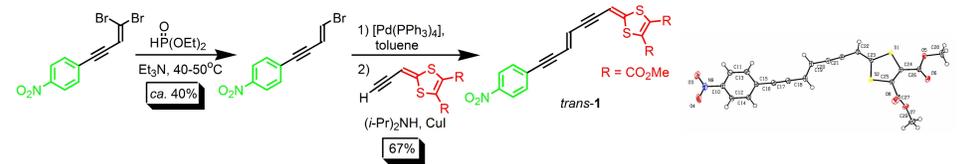
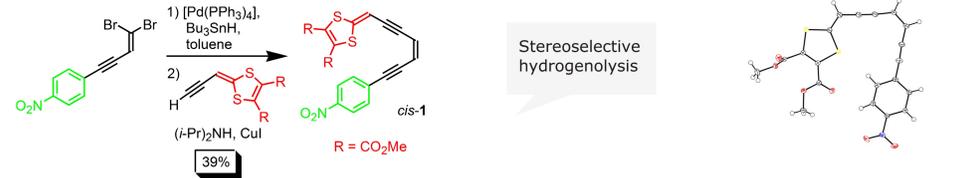
Donor-Acceptor Functionalized Tetraethynylethenes



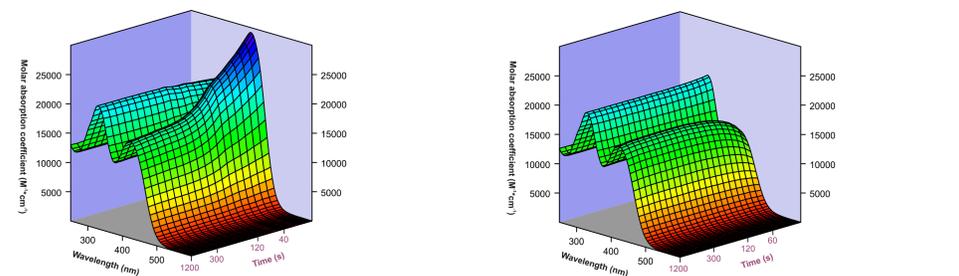
Donor-Acceptor Functionalized Triethynylethenes



Donor-Acceptor Functionalized Diethynylethenes

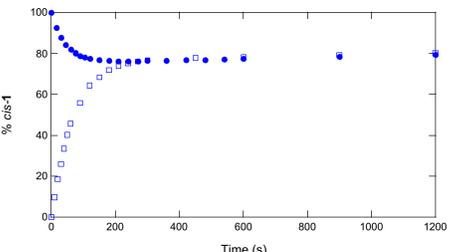
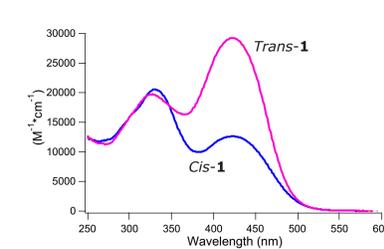


Cis-Trans Photoisomerization

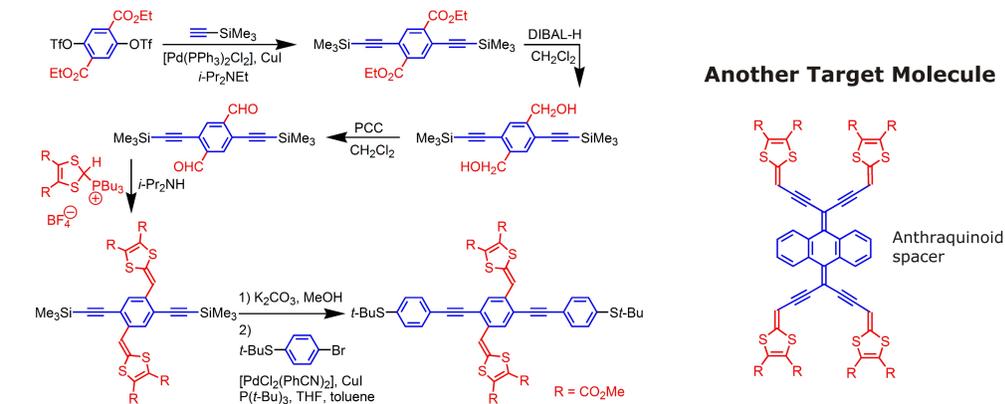


The absorption spectrum as a function of irradiation time starting from pure trans-1.

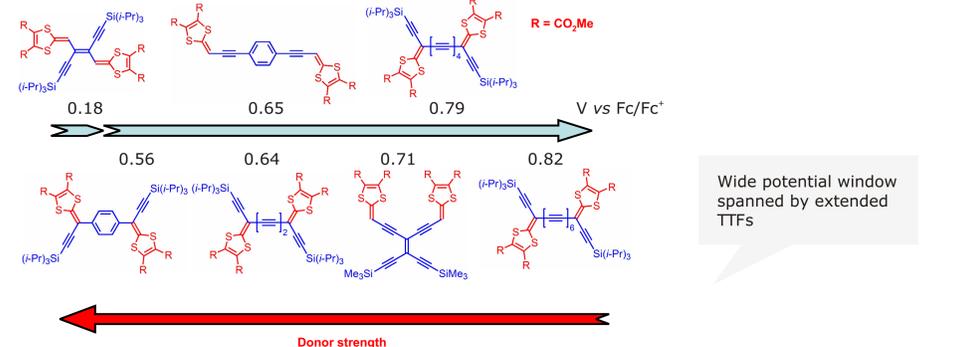
The absorption spectrum as a function of irradiation time starting from pure cis-1.



Wires for Molecular Electronics - Attachment of Thiol End-Caps



First Oxidation Potential as a Function of the Acetylenic Spacer



References

- K. Qvortrup, M.T. Jakobsen, J.-P. Gisselbrecht, C. Boudon, F. Jensen, S.B. Nielsen, M.B. Nielsen, *J. Mater. Chem.* **2004**, *14*, 1768-1773.
 K. Qvortrup, A.S. Andersson, J.-P. Mayer, A.S. Jepsen, M.B. Nielsen, *Synlett* **2004**, 2818-2820.
 M.B. Nielsen, J.C. Petersen, N. Thorup, A.S. Jepsen, J.-P. Gisselbrecht, C. Boudon, M. Gross, *J. Mater. Chem.* **2005**, *15*, 2599-2605.
 A.S. Andersson, K. Qvortrup, E.R. Torbensen, J.-P. Mayer, J.-P. Gisselbrecht, C. Boudon, M. Gross, A. Kadziola, K. Kilså, M.B. Nielsen, *Eur. J. Org. Chem.*, In press.