



A New Photomechanical Molecular Switch Based on a Linear π -Conjugated System

Submitted by Philippe Blanchard on Mon, 01/15/2018 - 18:30

Titre	A New Photomechanical Molecular Switch Based on a Linear π -Conjugated System
Type de publication	Article de revue
Auteur	Lenfant, Stéphane [1], Viero, Yannick [2], Krzeminski, C. [3], Vuillaume, Dominique [4], Demeter, Dora [5], Dobra, I. L. [6], Ocafrain, Maitena [7], Blanchard, Philippe [8], Roncali, Jean [9], Van Dick, C. [10], Cornil, Jérôme [11]
Editeur	American Chemical Society
Type	Article scientifique dans une revue à comité de lecture
Année	2017
Langue	Anglais
Date	2017
Numéro	22
Pagination	12416-12425
Volume	121
Titre de la revue	Journal of Physical Chemistry C
ISSN	1932-7455
Résumé en anglais	<p>We report the electron-transport properties of a new photoaddressable molecular switch. The switching process relies on a new concept based on linear π-conjugated dynamic systems, in which the geometry and, hence, the electronic properties of an oligothiophene chain can be reversibly modified by the photochemical trans-cis isomerization of an azobenzene unit fixed in a lateral loop. Electron-transport measurements through self-assembled monolayers on gold, in contact with an eGaIn top contact, showed switching with a conductance ratio of up to 103. Ab initio calculations were used to identify the most energetically stable conformations of the molecular switch; the corresponding calculated conductances qualitatively explain the trend observed in the photoswitching experiments.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua16651 [12]
DOI	10.1021/acs.jpcc.7b01240 [13]
Lien vers le document	http://pubs.acs.org/doi/10.1021/acs.jpcc.7b01240 [14]

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- [13] <http://dx.doi.org/10.1021/acs.jpcc.7b01240>
- [14] <http://pubs.acs.org/doi/10.1021/acs.jpcc.7b01240>

Publié sur *Okina* (<http://okina.univ-angers.fr>)