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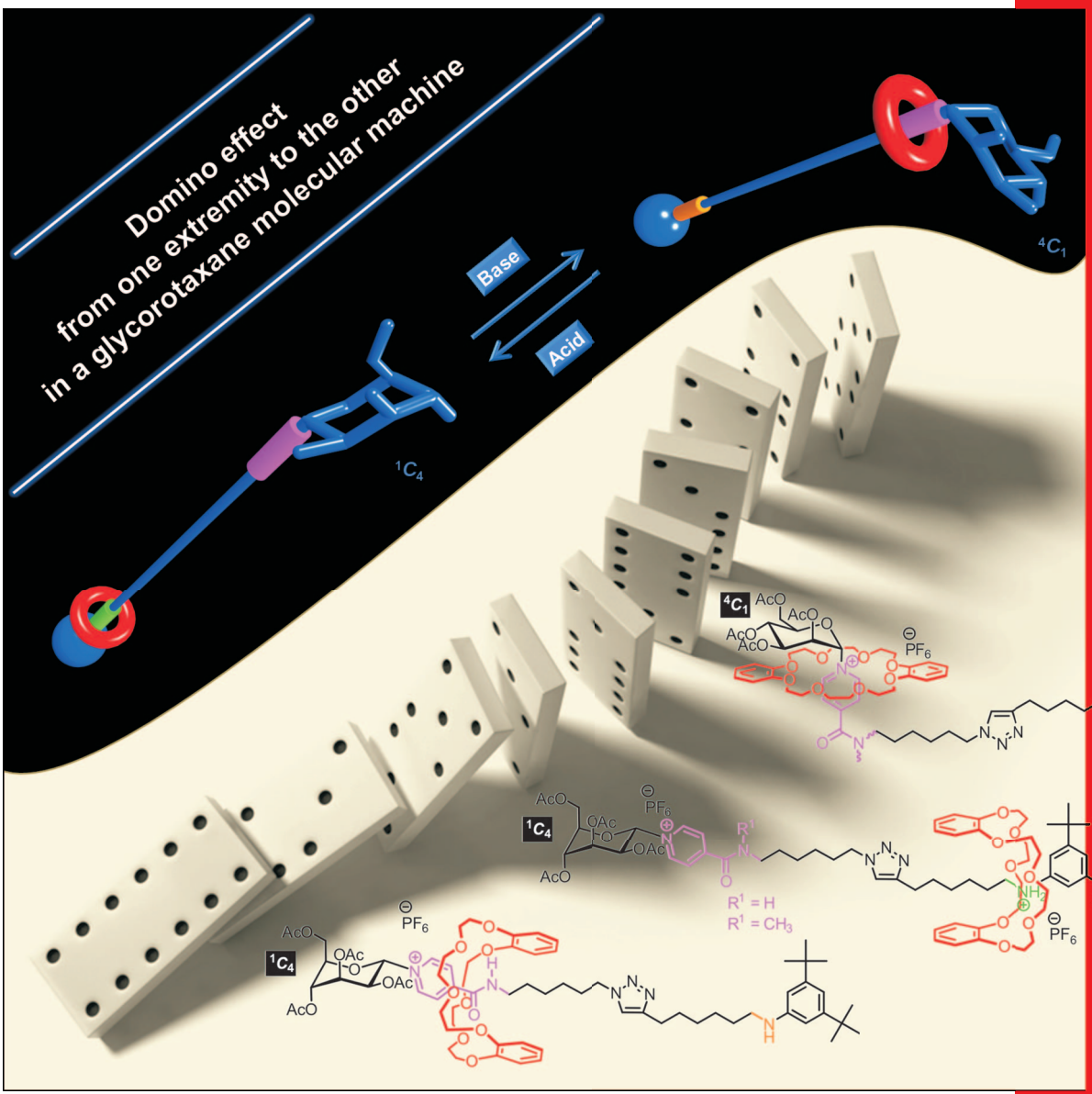
15/21

2009



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Concept

Conformationally Complex π-Conjugated Molecular and Polymeric Materials: New Challenges for Organic Synthesis

J. D. Tovar and D. A. Guthrie

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CEUJED 15 (21) 5161–5388 (2009) · ISSN 0947-6539 · Vol. 15 · No. 21 · 2009

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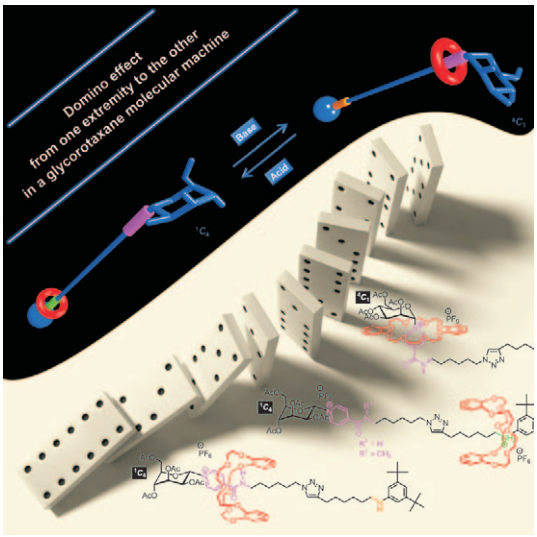
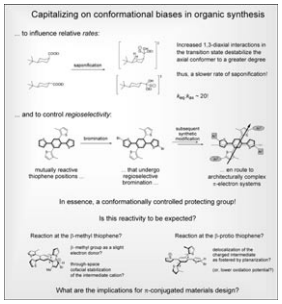
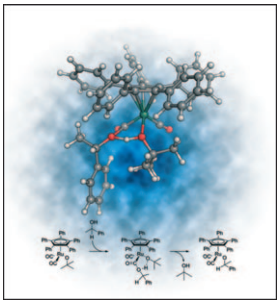
… from one extremity to the other is observed in a large-amplitude mannosyl [2]rotaxane molecular machine. In their Communication on page 5186 ff., F. Coutrot and E. Busseron describe the efficient preparation of new [2]rotaxane molecular machines containing anilinium and either mono- or disubstituted pyridinium amide stations. In the case of the disubstituted pyridinium amide, the macrocycle shuttles from the anilinium to the pyridinium upon deprotonation and causes an impressive flipping of the chair conformation of the glucidic moiety.

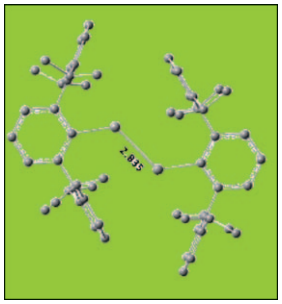




π-Electron Materials
In their Concept article on page 5176 ff., J. D. Tovar and D. A. Guthrie describe recent examples of regioselective functionalization of polyaromatic substrates as regulated by molecular conformation for the preparation of π-conjugated organic electronic materials.



Homogeneous Catalysis
In their Full Paper on page 5220 ff., J.-E. Bäckvall, T. Privalov, and J. Nyhlén investigate two possible pathways for the inner-sphere racemization of 1-phenylethanol with the $[RuCl(CO)_2(\eta^5\text{-pentaphenylcyclopentadienyl})]$ catalyst.



Organogallium Chemistry
In their Full Paper on page 5263 ff., P. P. Power, S. Nagase et al. describe their latest results on the synthesis, characterization and real molecule DFT calculations for neutral organogallium(I) aryl dimers and monomers. The main conclusion is that the Ga–Ga bond in neutral [ArGaGaAr] dimers is weak and is comparable in strength to the interaction seen between many closed shell centers.