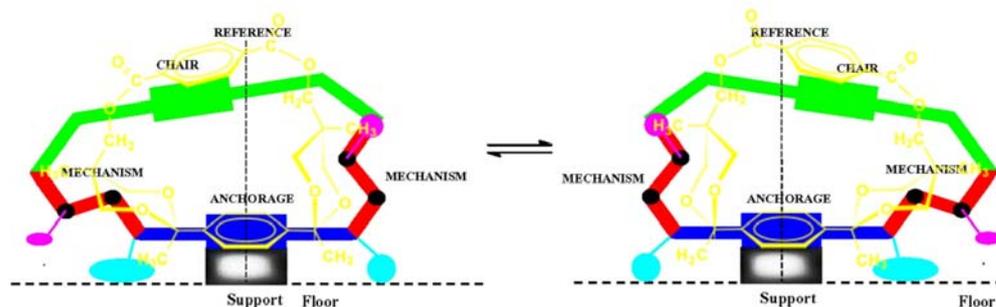


Cyclophanes, Cryptands and Molecular Devices

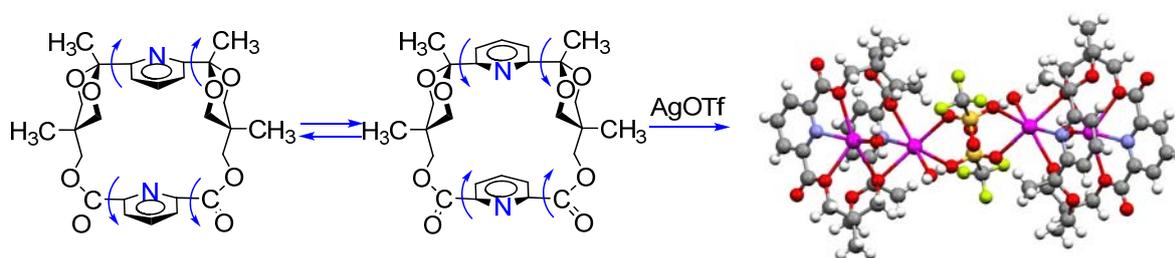
Ion Grosu

Babes-Bolyai University, Organic Chemistry Department, Cluj-Napoca, Romania

The design, synthesis, structural analysis and work of some technomimetic molecules based on cyclophane and cryptand structures are discussed. The investigations of molecular devices like „rocking chair”, „wringer”, „amusement ride” or „rudders” (Scheme 1) were carried out using dynamic NMR experiments and molecular modeling and the structure of the compounds are supported by the single crystal molecular structures obtained by X-ray diffractometry. Cryptands with trisubstituted benzene (I) or triazine units (II, Scheme 2) are proposed as molecular „logical gates”

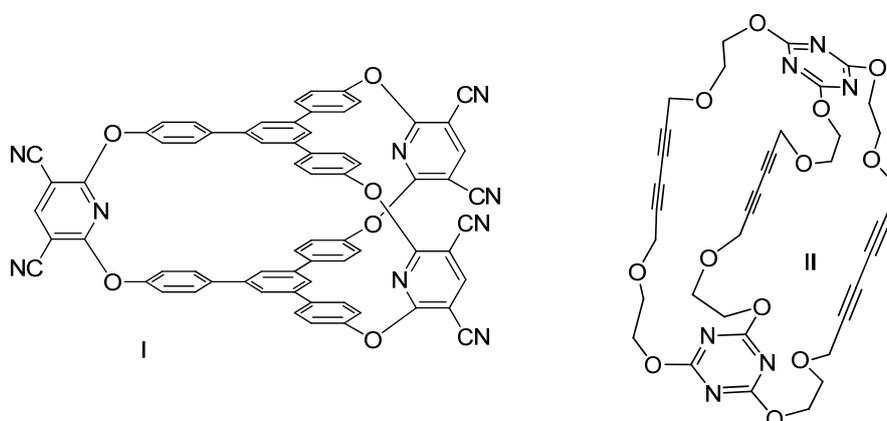


molecular "rocking chair"



molecular "wringer"

Scheme 1



Scheme 2

Grosu, I. and collab., *J. Org. Chem.* **2004**, 69, 1337-1345; **2008**, 73, 5831-5838 ; **2009**, 74, 9062-9070 ; *Org. Lett.*, **2006**, 8, 2619-2622. *Eur. J. Org. Chem.*, **2007**, 4674-4687; *Tetrahedron Lett.*, **2008**, 49, 5204-5207; *Synthesis*, **2010**, in press.