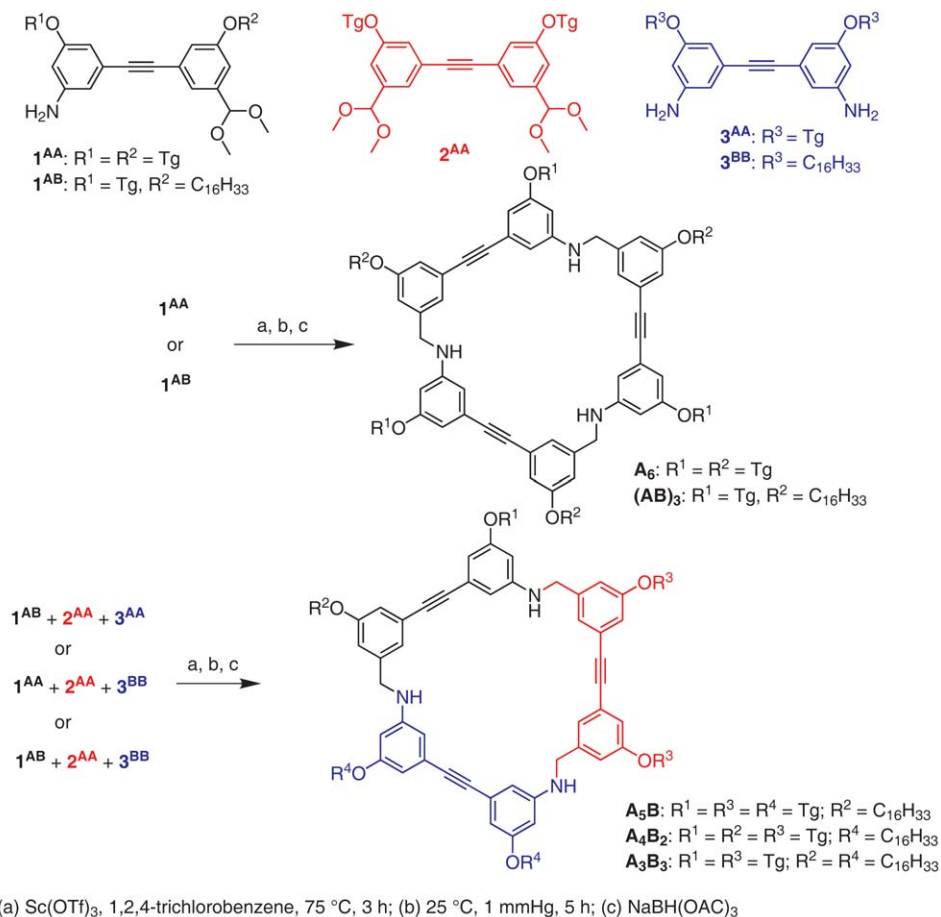


C. S. HARTLEY, J. S. MOORE* (UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, USA)
 Programmed Dynamic Covalent Assembly of Unsymmetrical Macrocycles
J. Am. Chem. Soc. **2007**, 129, 11682-11683.

A Dynamic Covalent Approach



Significance: The authors demonstrated the first sequence-directed, dynamic covalent approach to unsymmetrical macrocycles like **A₆**, **(AB)₃**, **A₅B**, **A₄B₂**, and **A₃B₃** using imine formation and exchange. Formation of macrocycle **A₆** was carried out by treating **1^{AA}** with $\text{Sc}(\text{OTf})_3$ in 1,2,4-trichlorobenzene at 75 °C for 3 hours, followed by stirring under reduced pressure (1 mmHg) at room temperature for 5 hours. By combining corresponding monomer(s), **(AB)₃**, **A₅B**, **A₄B₂**, and **A₃B₃** were also obtained in similar manner.

Comment: This paper describes the first examples of sequence-directed dynamic covalent chemistry and offers a thermodynamically controlled route to unsymmetrical shape-persistent macrocycles as well as basic tools for the self-assembly of complex organic nanostructures.

SYNFACTS Contributors: Timothy M. Swager, Gaku Fukuhara
 Synfacts 2007, 12, 1256-1256 Published online: 22.11.2007
 DOI: 10.1055/s-2007-991357; Reg-No.: S11907SF

2007 © THIEME STUTTGART • NEW YORK