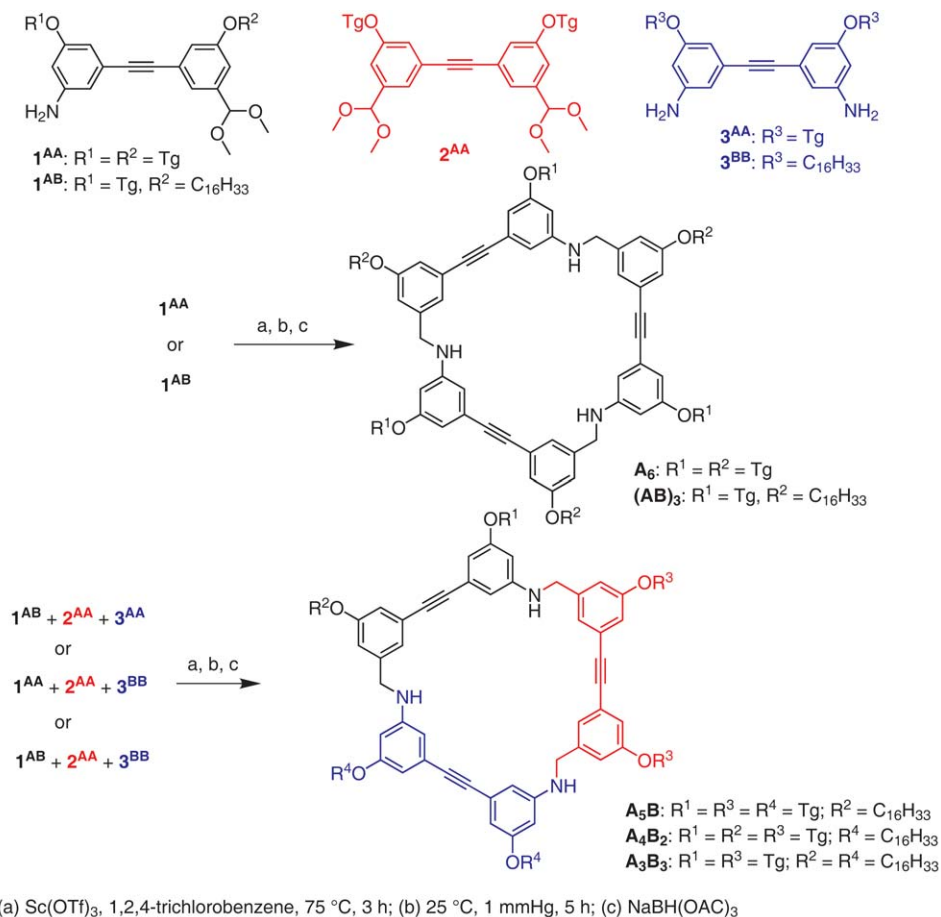


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Programmed Dynamic Covalent Assembly of Unsymmetrical Macrocycles
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A Dynamic Covalent Approach



Significance: The authors demonstrated the first sequence-directed, dynamic covalent approach to unsymmetrical macrocycles like A_6 , $(AB)_3$, A_5B , A_4B_2 , and A_3B_3 using imine formation and exchange. Formation of macrocycle A_6 was carried out by treating 1^{AA} with $Sc(OTf)_3$ 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), $(AB)_3$, A_5B , A_4B_2 , and A_3B_3 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.

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