Public Abstract

First Name:Andrew

Middle Name:Keith

Last Name:Maerz

Adviser's First Name:Jerry

Adviser's Last Name:Atwood

Co-Adviser's First Name:

Co-Adviser's Last Name:

Graduation Term:SS 2011

Department:Chemistry

Degree:PhD

Title:Synthesis and Characterization of Host-Guest Complexes: Metal-Organic Nanocapsules Using Aryl-Substituted Pyrogallol[4]arenes

Herein, we show that complexation of zinc and C-phenylpyrogallol[4]arene, as well as other benzyl derivatives, induces a conformational flip in these macrocycles from chair to cone. This formation of the zinc-seamed metal-organic nanocapsules has been tracked via NMR, X-ray Diffraction and Mass Spectroscopy studies. The results yield several important trends that can be applied towards both the study of supramolecular self-assembly and the utilization of these host-guest capsular entities for other purposes.