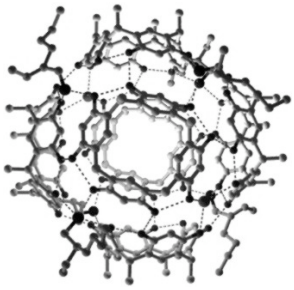
W0181

Designer Container-Molecule Materials. K. T. Holman, S. T. Mough, O. Ugono, S.D. Drake, Dept. of Chemistry, Georgetown Univ., Washington, DC 20057 USA.



So-called container molecules have received a great deal of attention in recent years related to their solution-phase binding properties and the unique behaviors of intimately associated "molecules within molecules." Little is known, however, about the corresponding properties of materials derived from these remarkable molecules, though such materials might be expected to display recognition and storage properties commensurate with the molecular recognition properties of their building blocks. A design strategy toward functional soft materials derived from cup-like cavitands or container-like molecules will be outlined and some exemplary successes will be highlighted. The self-assembly of cup-like organic cavitands such as functionalized calix[4]resorcinarenes or cyclotriveratrylenes into container-like and/or extended network solids will be described. Extended network structures derived from the self-assembly of cryptophane molecular containers will also be discussed.