

Abstract Submitted
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Crystal Engineering of Tetrahedral ‘Nano Molecules’ Constructed by POSS Cages MINGJUN HUANG, SHAN MEI, STEPHEN CHENG, Department of Polymer Science, the University of Akron — Functional hybrid materials provide us a powerful approach to acquire novel hierarchical structures and exceptional properties. Designed nanoparticle building blocks with specific interactions can self-assemble into targeted ordered structures with intriguing shapes, sizes and functionalities. Classical high symmetric ‘nano atoms’, Polyhedral Oligomeric Silsesquioxane (POSS) can be utilized to construct ‘nano molecules’ with different symmetry, which can further act as novel nanoparticle building blocks. Very interesting rigid tetrahedral ‘nano molecules’ covalent linking four POSS cages were synthesized. Their close packing structures in crystal were determined by transmission electron microscopy (TEM) and wide angle X-ray diffraction (WAXD).

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