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**Supramolecular Assembly of Organic-Inorganic Hybrid Polyoxometalate Nanoclusters at Solid-liquid Interface** NA QI, BENXIN JING, YINGXI ZHU, Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN 46556 — Polyoxometalate (POM) inorganic nanoclusters have recently emerged as building blocks for the design and synthesis of novel functional materials for broad applications ranging from catalysis to nanomedicines. Rather than taking the slow self-assembly of POMs in aqueous solutions, we have investigated the assembly of hybrid Anderson-type Mo-based POMs with organic ligands at a solid surface by Langmuir-Blodgett (LB) deposition and characterized the films by AFM, TEM, and X-ray diffraction. We have observed the formation of well-ordered monolayer or bilayer consisting of periodic arrangement of hybrid POM nanoclusters, showing a strong dependence on substrate chemistry and LB compression pressure. The controlled assembly of hybrid POM nanocluster films by LB deposition could be used as a template with stoichiometric crystalline nanostructure to the programmed assembly of novel multi-functional supramolecular complexes.

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