

Abstract Submitted  
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**Polyoxometalate (POM) Macroion Decorated Polymersomes**

BENXIN JING, ERIN CONNOR, Y. ELAINE ZHU, Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, Indiana 46556 — Polymersomes as one of the common self-assembled forms of amphiphilic block copolymers have been widely developed for applications from drug delivery to mirco/nanoreactors. The tunability of their materials properties, such as mechanical strength and permeability often relies on the chemistry of the selected polymer in a liquid medium. We have recently employed the emergent polyoxometalate (POM) nanoclusters as macroions to control their interaction and assembly with different polymersomes. For both neutral and cationic polymersomes decorated with highly charged anionic POM nanoclusters, the dispersion stability and mechanic strength can be significantly enhanced. AFM and TEM characterization further confirms the encapsulation of POM macroions into polymersomes to form inorganic-organic hybrid complexes, which lead to new potential applications in anticancer and antibacterial medicines and catalysts.

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