

“Supramolecular Nanocomposites:
A Possible Path Toward
Metamaterials”

UC Berkeley

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Host: Greg Liu



Abstract: The periodic table provides the most basic and richest building blocks one can use to meet material needs. However, it remains a daunting task to generate new materials by combining elements at will. It is particularly difficult to generate new class of functional material with combined properties from both the soft matter and hard materials. We hypothesize that once we gain control over the spatial arrangement of each building block and the inter-component coupling in organic/inorganic nanocomposites, it is possible to manipulate energy flow and transformation in different forms and access properties never seen before. To this end, we need to carefully design and synthesize each component, achieve structural control over multiple length scales, and engineer various interfaces for tunable inter-component coupling. I am going to discuss our efforts in understanding basic principles governing the phase behavior supramolecular nanocomposites and how to manipulate the supramolecular assemblies toward functional metamaterials.

Bio: Prof. Ting Xu received her Ph.D from the Department of Polymer Science and Engineering from the University of Massachusetts, Amherst in 2004. She did her postdoctoral training jointly

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Bio (cont.): between the University of Pennsylvania and the Cold Neutron for Biology and Technology (CNBT) team at National Institute of Science and Technology from 2004-2006. She joined University of California, Berkeley in 2007 and was promoted to Associated professor in 2012 and full professor in 2017. Currently, she is a professor in the Department of Material Sciences and Engineering, Department of Chemistry and UCSF-Berkeley Joint Bioengineering Group. She is also a faculty scientist in the Material Science Division, Lawrence Berkeley National Laboratory.

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