

Abstract Submitted  
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**Periodic Polymers for PhoXonics** EDWIN THOMAS, Department of Materials Science and Engineering, Massachusetts Institute of Technology — Exploiting the size and shape dependence of material properties and accessing multifunctionality holds great promise for the development of materials that will contribute to novel future technologies. Polymers can act as hosts for metallic and dielectric nanoparticles as well as organic molecules, resulting in nanocomposites with combinations of properties not available by other means. *Periodic* structural assemblies are of particular interest, due to their interesting interactions with waves: especially light and mechanical waves. Progress in this exciting area requires excellent control of structure formation. A top-down, bottom-up approach, involving interference lithography and self assembly is demonstrating good success in fabricating the requisite structures and desired properties for photonics and phononics.

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