

Abstract Submitted  
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**Formation of Anisotropic Block Copolymer Gels<sup>1</sup>** CHYA YAN  
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ern University — Anisotropic, fibrillar gels are important in a variety of processes.  
Biom mineralization is one example, where the mineralization process often occurs  
within a matrix of collagen or chitin fibers that trap the mineral precursors and  
direct the mineralization process. We wish to replicate this type of behavior within  
block copolymer gels. Particularly, we are interested in employing gels composed of  
cylindrical micelles, which are anisotropic and closely mimic biological fibers. Mi-  
celle geometry is controlled in our system by manipulating the ratio of molecular  
weights of the two blocks and by controlling the detailed thermal processing his-  
tory of the copolymer solutions. Small-Angle X-ray Scattering and Dynamic Light  
Scattering are used to determine the temperature dependence of the gel formation  
process. Initial experiments are based on a thermally-reversible alcohol-soluble sys-  
tem, that can be subsequently converted to a water soluble system by hydrolysis of  
a poly(t-butyl methacrylate) block to a poly (methacrylic acid) block.

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