

Abstract Submitted
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Block copolymer toughened epoxy: Theory and experiment¹

CARMELO DECLET-PEREZ, LORRAINE FRANCIS, FRANK BATES², Department of Chemical Engineering and Materials Science, University of Minnesota — We have recently combined small angle x-ray scattering and tensile experiments to follow real-time deformation of block copolymer nanostructures in order to understand toughness enhancement in block copolymer modified epoxies. Our experiments provided direct evidence of internal cavitation in rubbery nanodomains. In this presentation we show that our observations are consistent with the predictions from an energy balance-based cavitation criteria recently modified by Bucknall and Paul [Polymer **50**, 5539 (2009) & Polymer **54**, 320 (2013)].

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