Abstract Submitted
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Toughening Mechanisms in Polymer Gels HUGH BROWN, University of Wollongong — I will describe a simple model that accounts for the very high toughness of double network gels. The model is based on the assumption that the first, stiff network will break up forming multiple cracks when the stress is above a defined value. These cracks are held together by the second network. A multiply cracked damage zone will form round any macroscopic crack in the material causing energy dissipation and shielding the second network. The toughness enhancement by this process is estimated to be about x40. Other techniques of gel toughening will then be discussed.

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