
Characterization of the Nonlinear Viscoelastic Behavior of PAAm-Alginate Double-Network Hydrogels

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Abstract

Polyacrylamide (PAAm)-alginate double-network (DN) hydrogels exhibit exceptional mechanical properties due to its hybrid covalent and ionic networks, offering opportunities for innovative applications and tailored design in soft materials science. Our study focuses on the characterization of the nonlinear viscoelastic behaviour of PAAm-alginate DN hydrogels under diverse loading conditions. Using rheological techniques, including Large-Amplitude Oscillatory Shear (LAOS) tests, we investigate the strain- and rate-dependent mechanical response of this material.

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