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Gelation kinetics of gelatin using particle tracking microrheology JOSEPH HARDCASTLE, Boston Univeristy, RAMA BANSIL, Boston University — Previous studies with gelatin have observed four distinct stages during the physical gelation process [Normand et al. *Macromolecules*, 2000, 33, 1063]. In this presentation we report measurements of microrheology in an effort to examine the time evolution of the gel on short length scales and time scales. By tracking latex particles in gelatin solution at different temperatures we can follow the microrheological changes and kinetics of the gelation process. Using the generalized Stokes-Einstein relation viscoelastic properties of these quasi-static gel states the evolution of the storage and loss moduli, G' and G'' , are examined as functions of both time and temperature. The data show that both G' and G'' exhibit power law scaling versus frequency with the same exponent. The temperature and concentration dependence of the frequency at which the system crosses over from viscous to elastic behavior will be presented.

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