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**Kinetics of phase separation of thermoreversible gels** FRANCISCO J. SOLIS, ASU West, CHRISTINE LEON, BRENT VERNON, Arizona State University — We study the kinetics of phase separation and thermoreversible gel formation of LCST-type polymers. A large number of NIPAM-based polymers exhibit transitions near room temperature from a liquid phase to a two-phase state. In the two phase-region of the phase diagram, a polymer dilute phase coexists with a gel. The corresponding shrinking transition for chemically-linked gels has been extensively studied in both its thermodynamic and kinetic aspects. We show that, in the thermoreversible case, the formation of the gel phase proceeds in a similar way. Upon entrance to the two-phase region, the gel volume follows a double exponential decay. The gel undergoes a fast shrinking associated with water ejection, followed by a slower reorganization regime.

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