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Physical Aging in a Colloidal Glass Subjected to Concentration Jump Conditions¹ XIAO GUANG PENG, GREGORY B. MCKENNA, Department of Chemical Engineering, Texas Tech University, Lubbock, 79409, Texas, USA — We have prepared a thermo-sensitive core-shell PS-PNIPAM/AA latex system and have investigated the aging dynamics of its colloidal dispersions subsequent to the temperature (or concentration)-jump perturbations using sequential creep experiments to probe the response of the system. The aging experiments were performed in the vicinity of the glass transition concentration or temperature as evidenced by the strongly varying relaxation time with decreasing temperature (or increasing concentration). The aging results from the current colloidal glass study are compared with those expected in the Kovacs' catalogue of experiments in structural recovery of glassy polymers, viz., intrinsic isotherms, asymmetry of approach and memory events [1]. We found that colloidal glass displays aging behavior and time-aging time superposition is valid here. There are similarities in aging dynamics between colloidal glasses and molecular glasses, and differences also persist.

[1] A.J. Kovacs, *Fortschritte der Hochpolymeren-Forschung*, 3, 394-507 (1963).

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Xiaoguang Peng
Department of Chemical Engineering, Texas Tech University,
Lubbock, 79409, Texas, USA

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