

Abstract Submitted
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Effect of Length on the Diffusion of Rodlike Polymers at Concentrations Spanning the Isotropic-Liquid Crystal Transition.¹ PAUL RUSSO, GARRETT DOUCET, Louisiana State University — The effect of rod length on self-diffusion across the isotropic-liquid crystal phase transition has been examined by comparing D_{self} vs weight fraction for three molecular weights of polybenzylglutamate (PBLG-24.6, PBLG-134.5, and PBLG-232). The behavior differs, depending on the contour length relative to the persistence length. For PBLGs having a contour length comparable to persistence length, the diffusion coefficient decreases to a value approximately 10 percent of the infinite dilution value. For PBLG with a contour length smaller than the persistence length, the diffusion coefficient decreases even more, to about 1 percent of the dilute solution value.

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