

Abstract Submitted  
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**Thermophoresis of a thermally responsive polymer**<sup>1</sup> KLINTON KILGORE, JACOB FORD, JENNIFER KREFT PEARCE, The University of Texas at Tyler — Thermophoresis is the migration of a species in response to a temperature gradient. This mechanism can be used to manipulate molecules in microfluidic channels. We experimentally investigate thermophoresis of a synthetic polymer. The polymer is thermally responsive and changes conformation in aqueous solution at the cloud point temperature. Two forms of the polymer are present in the temperature gradient at an average temperature near the cloud point, with one conformation migrating to the hot side of the channel and the other to the cold. We also investigate the polymer's migratory dependence on dissolved ionic species, specifically NaCl, which changes the cloud point temperature. We examine the effect of the conformation change on thermophoresis using a lattice-Boltzmann- based simulation.

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