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Thermophoresis of a polyelectrolyte[1] JENNIFER KREFT PEARCE, AUDREY HAMMACK, ANDREW LASTER, JAMES LEE, SETH NORMAN, University of Texas at Tyler — Thermophoresis, the migration of a species due to a temperature gradient, has been shown to be a possible mechanism for manipulating molecules in microfluidic devices. The mechanism governing thermophoresis is complex making a molecule's Soret coefficient (S_T) and its dependence on different physical factors hard to predict. We experimentally investigate thermophoresis of a polyelectrolyte. For sufficiently high average temperatures, two forms of the molecule are present. We measure the Soret coefficient of both and find that one has positive S_T and the other negative. We also investigate the dependence of S_T on co-dissolved ionic species, specifically NaOH and NaCl.

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