

Abstract Submitted  
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**Design of a millifluidic device for thermophoretic analysis of biomolecules** RYAN PHELPS, TYLER SHARBY, Department of Biology and Marine Biology, Roger Williams University, JENNIFER KREFT PEARCE, Department of Physics, Roger Williams University — Thermophoresis is the migration of particles due to a temperature gradient, which is enhanced in small channels due to the high temperature gradients that can be achieved. Thermophoresis can be used to analyze biomolecules such as proteins and DNA. It can also be used to study the absorption of small molecules to lipid membranes. For this experiment a millifluidic device is used. The channel in which the sample is injected is 500 microns wide. The temperature gradient is produced by hot and cold water baths. This device is a low cost alternative to the commercially available systems for thermophoresis-based analysis of biological molecules.

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