

Abstract Submitted
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DNA Electrophoresis using entropic trapping HAOBIN LUO, DILIP GERSAPPE, Dept of Materials Science and Engineering, Stony Brook University, Stony Brook, NY 11794 — We examine the effects of surface patterning on DNA electrophoresis. Using chemically patterned stripes of different widths we can control the separation of DNA. Due to entropic trapping of the chains on the stripes, depending on the width of the stripe and the length of the DNA, we show (using MD simulations) that it is possible to separate chains in increasing order of length and in decreasing order. We show an experimental realization of this effect and illustrate how DNA motion on the surface can be influenced by both the width of the stripe and the periodicity of the pattern.

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