

Abstract Submitted
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DNA Electrophoresis using entropic trapping HAOBIN LUO,
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versity, 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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