

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Stretching DNA Molecules on a Polymer Surface¹

JONATHAN ROSENBERG, Torah Academy of Bergen County, KE ZHU, JULIA BUDASSI, JONATHAN SOKOLOV, Stony Brook University — DNA's stretched form is one of great importance to the study of its structural characteristics and sequence. In our experiment, we studied the effects of stretching on lambda DNA, deposited onto Polydimethyl siloxane (PDMS, silicone) using the evaporating drop method. The DNA was dyed with SyBr Gold dye, or YOYO dye, which does not drastically affect the stretching properties of the DNA molecules while being deposited. Different DNA concentrations were used to optimize the density of the DNA on the surface. Once deposited, the DNA was imaged using a confocal microscope, for further measurements and to image stretching, in situ. To stretch the DNA molecules after deposition onto PDMS, the PDMS sample was placed onto a modified linear stage, pinched at the ends. The DNA length was measured throughout stretching. The result shows we successfully stretched DNA strands by 68% without breakage of the strands and without the strands coming off of the PDMS surface. This study is supported by NSF-DMR-MRSEC program.

¹NSF-DMR MRSEC

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Date submitted: 11 Nov 2011

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