

Abstract Submitted
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Nanopore DNA translocation studies of tri-oligomer DNA with two hybridization segments¹ VENKAT BALAGURUSAMY, PAUL WEINGER, XINSHENG LING, Brown University — We have earlier detected 12-base hybridizations in trimer DNA complexes formed by three single-stranded DNA oligomers hybridized at their ends sequentially, using nanopores of ~ 10 nm diameter [1]. These complexes are connected to a polystyrene bead at one end to slow down their translocation. Here, we report translocation experiments at different voltages with nanopores ~ 5 nm diameter. The measured time lapses between the passage of consecutive double-strand DNA segments in a trimer complex allow us to study the translocation dynamics. The measured mean-first-passage time between two consecutive hybridization segments is found to be consistent with theoretical estimates based on the Fokker-Planck equation.

[1] V.S.K.Balagurusamy, P.Weinger and X.S.Ling, *Nanotechnology* 21, 335102 (2010).

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