

Abstract Submitted  
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**Controlled Reverse Translocation of DNA Through a Solid-State Nanopore**<sup>1</sup> PAUL WEINGER, VENKAT BALAGURUSAMY, SUNGCHEOL KIM, XINSHENG SEAN LING, Brown University — Reverse DNA translocation [1] is a process in which a DNA is pulled out of a nanopore against the forward electric force. In this process, the effective diffusion constant of the DNA is significantly reduced, thereby suppressing thermal smearing effect due to diffusion in the positional measurements of DNA sequences, e.g. in the hybridization-assisted nanopore sequencing platform. We describe a new experimental setup which will provide dramatic improvement upon the previous experiment [1].

[1] Hongbo Peng and X.S. Ling, “Reverse DNA translocation through a solid-state nanopore by magnetic tweezers,” *Nanotechnology*, 20, 185101(2009).

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