Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Capturing and Expulsion Processes of DNA Translocations in Solid-State Nanopores JAMES UPLINGER, DANIEL FOLOGEA, BRIAN THOMAS, RYAN ROLLINGS, JOHN WANG, JIALI LI, University of Arkansas, Physics Department — We study the DNA translocation dynamics through voltage biased solid-state nanopores. Our study examines the capturing and expulsion process of translocation events at various conditions, and compares them to artificial events. For events with translocation time on the order of 100 μs a significant portion of the translocation event corresponds to the transitory process of the DNA entering and exiting the nanopore, which is normally included in the overall translocation time. Our study reveals that DNA enter the nanopore with a higher speed than on exit. The limitations of the electronic response of the measurement system will also be discussed.

James Uplinger
University of Arkansas, Physics Department

Date submitted: 20 Nov 2006 Electronic form version 1.4