NWS14-2014-000172

Abstract for an Invited Paper
for the NWS14 Meeting of
the American Physical Society

Single molecule nanopore sequencing of DNA

JENS GUNDLACH, Department of Physics, University of Washington

Nanopores are a new tool to study single bio molecules. We have developed the biologic pore Mycobacterium smegmatis porin A (MspA) for nanopore sequencing of DNA. A single molecule of DNA is drawn into the pore by a voltage applied across the pore, while an ionic current passing through the pore reveals the DNA's composition, its interactions with the pore and its dynamics. A polymerase is used to control the translocation velocity through the pore. We will demonstrate how this technique leads to a simple and fast electronic DNA reader.