

Abstract Submitted  
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**Electronic Signatures of all Four DNA Nucleosides in a Tunneling Gap**<sup>1</sup> SHUAI CHANG, Arizona State University — New approaches to DNA sequencing are required to reduce costs and increase the availability of personalized genomics. Using Scanning Tunneling Microscope as a tool, we report measurements of the current signals generated as free nucleosides diffuse into a tunnel junction in which both electrodes are functionalized with a reagent that presents a hydrogen bond donor and acceptor to the nucleosides. This functionalization serves to both limit the range of molecular orientations in the tunnel gap and reduce the contact resistance, increasing the selectivity of the tunneling signal, so that a direct readout may be possible with a few repeated reads.

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