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**DNA translocation measurements through low-capacitance solid-state nanopore chips at high bandwidths** CHEN-CHI CHIEN, DAVID NIEDZWIECKI, BARTHOLOMEUS MACHIELSE, ADRIAN BALAN, University of Pennsylvania, JIANXUN LIN, PEIJIE ONG, KENNETH SHEPARD, Columbia University, MARIJA DRNDIC, University of Pennsylvania — We perform DNA translocation measurements with low-noise solid state nanopore chips. We obtain higher ion current signal-to-noise ratio and better resolution in ion current signals than previously reported in solid state nanopores at high bandwidths with chip capacitance lowering techniques of applying extra insulation on the chip surface. We show measurements of ion current during translocation of DNA molecules through thin silicon nitride (SiN) nanopores of small diameters at megahertz bandwidths with enhanced ionic signal-to-noise ratios. We further discuss how these results possibly pave the way towards identifying intramolecular DNA sequences with solid-state nanopores.

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