

Electronic Supplementary Information

Investigation of adsorption behavior of BSA with tethered lipid layer modified solid-state nanopores in a wide pH range

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1. XPS measurements

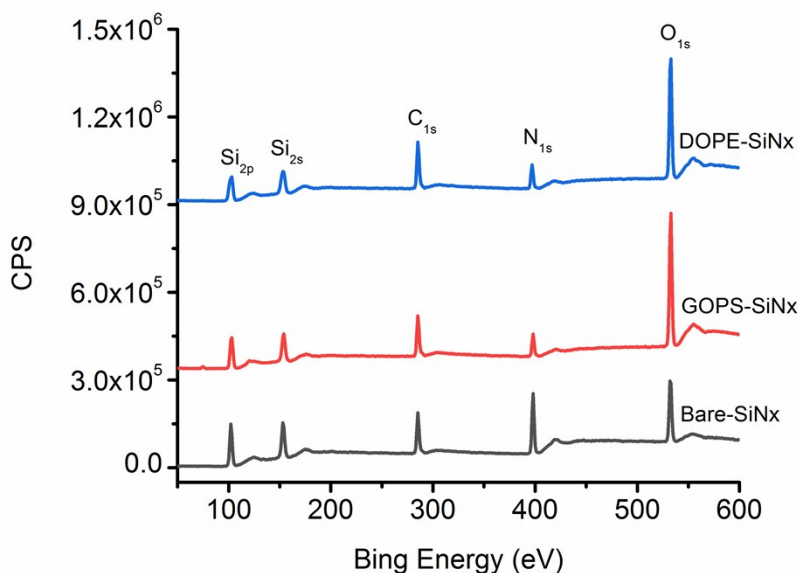


Figure S1. XPS spectra of bare-SiN_x (A1), GOPS coated SiN_x (A2), DOPE modified SiN_x (A3)

Table S1. characterization of atom percentage for different modification steps.

Modification steps	Si2p (%)	C1s (%)	N1s (%)	O1s (%)	P2p (%)
Bare-SiN _x	30.37	27.05	23.96	18.19	0.49
GOPS-SiN _x	25.79	27.65	8.29	37.4	0.23
DOPE-SiN _x	25.01	32	10.16	32.82	---

2. BSA translocation through nanopore at different pH conditions

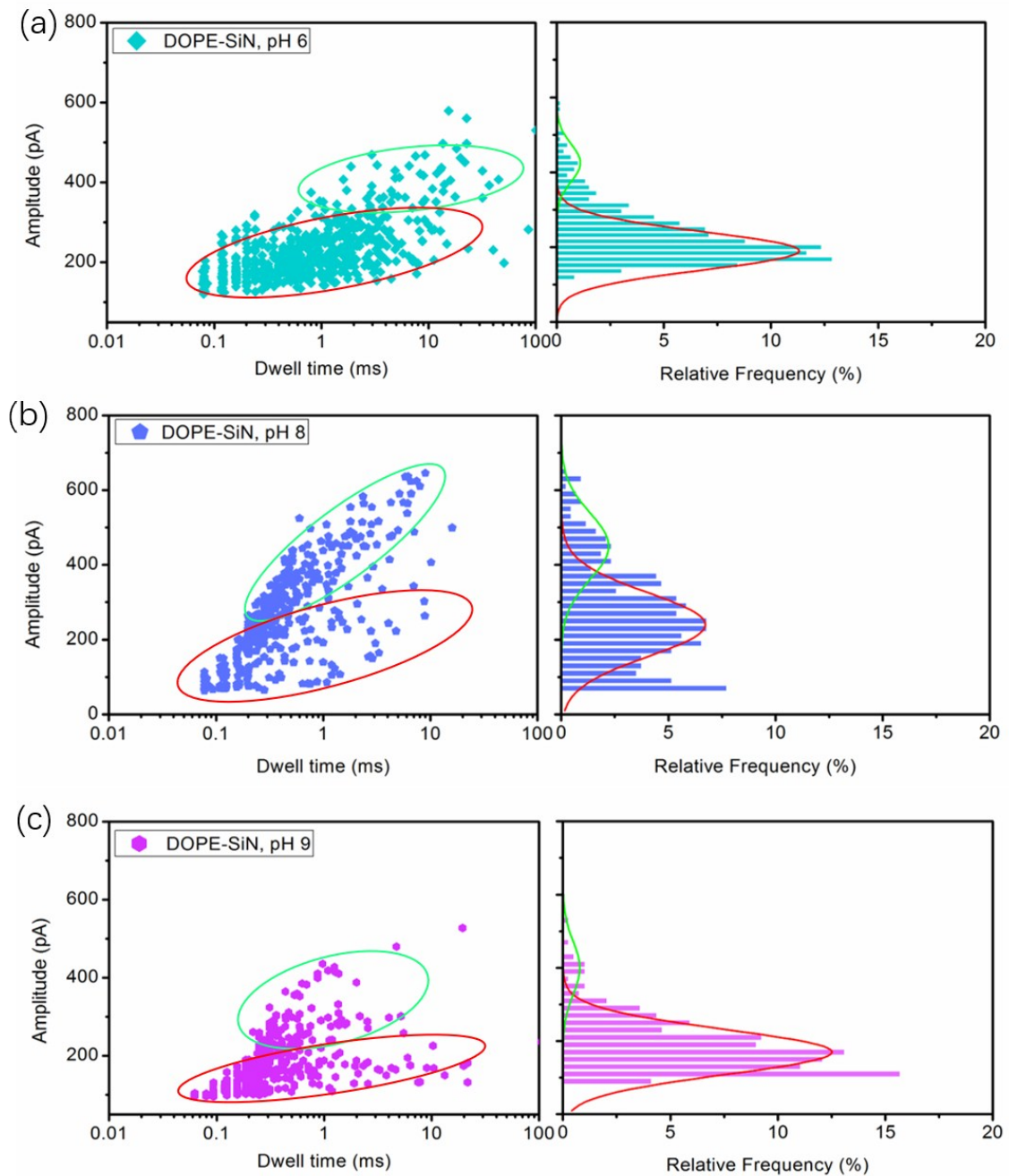


Figure S2. Event scatter plots for translocation of 0.5 μM BSA through a 13 nm TLL-modified nanopore under 100 mV at pH 6 (a), pH 8 (b) and pH 9 (c), respectively. Amplitude histograms are fitted with Gaussian distributions