Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Exact results for random deposition-driven ratcheting MARIARITA D'ORSOGNA, TOM CHOU, UCLA — We consider the discrete translocation of a polymer through a pore, across a wall, driven by the irreversible, random sequential adsorption of particles on one side of the pore. Although the kinetics of the wall motion and the deposition are coupled, we find the exact steady state distribution for the gap between the wall and the nearest deposited particle. From this exact result, the mean translocation velocity and variance are constructed. We explicitly show that translocation is faster and less variable when the adsorbing particles are smaller. The relative efficiencies of ratcheting using different sized deposition particles are also defined and compared.

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Date submitted: 20 Nov 2006 Electronic form version 1.4