

Abstract Submitted  
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**Stick or Slip ? : Measuring slip lengths with nm resolution** SUNG CHUL BAE, Departments of Materials Science and Engineering, of Chemistry, and of Physics, University of Illinois, STEPHEN ANTHONY, STEVE GRANICK — Fluid dynamics within small channels draws great interest due to the development of microfluidic devices, yet details about flow immediately at a solid surface remain too vague. Previous attempts to measure surface flow rate were limited to a resolution of the optical wavelength. Here, by using a fluorescence resonance energy transfer (FRET) approach, we improve the resolution by 1-2 orders of magnitude. Two different flow systems, hydrodynamic flow and electrokinetic flow, were investigated with this technique.

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