

Abstract Submitted  
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**Slip Lengths on Hydrophobic and Hydrophilic Surfaces Measured by Quantum Dots**<sup>1</sup> MANOOCHHR KOOCHEFAHANI, SHAHRAM POUYA, CHEE LUM, Michigan State University, PRESTON SNEE, MOUNGI BAWENDI, DANIEL NOCERA, Massachusetts Institute of Technology — We report measurements of slip length obtained from tracking of individual quantum dots (QDs) within a few hundred nanometers of a surface using evanescent wave illumination. The measurements are obtained at different shear rates on a hydrophilic (quartz) and a hydrophobic (OTS-coated quartz) surface forming the wall of a rectangular microchannel nominally 300 micron in height. The shear rate is obtained independently by molecular tagging velocimetry (MTV) measurement of the in-situ velocity profile across the 300 micron height of the microchannel. Results indicate a larger slip length for the hydrophobic surface.

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