

Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

Single Quantum Dot (QD) Velocimetry S. POUYA, M. KOOCHEHFAHANI, Dept. of Mechanical Engineering, Michigan State University, P. SNEE, M. BAWENDI, D. NOCERA, Dept. of Chemistry, Massachusetts Institute of Technology — We introduce the use of quantum dot (QD) nanoparticles for near-surface velocimetry and provide preliminary data to demonstrate its feasibility. Evanescent wave illumination is used to image the motion of water-soluble (CdSe)ZnS QDs with a core size of 6 nm within a region of order 100 nm of a surface. These particles are an order of magnitude smaller than those typically used to date in nano-PIV studies. Results will be presented for the two in-plane components of the velocity near the surface of a microchannel. This work was supported by the CRC Program of the National Science Foundation, Grant Number CHE-0209898.

Manoochehr Koochesfahani
Michigan State University

Date submitted: 02 Aug 2005

Electronic form version 1.4