

Abstract Submitted
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Dielectro-kinetic concentration of Quantum dots FREDERIC BOTTAUSCI, YANTING ZHANG, IGOR MEZIC, University of California Santa Barbara — We report experimental results on dielectrokinetic concentration of 10-15 nanometers in diameter particles performed in a planar electrodes chip using bulk titanium micro-fabrication. The device consists of an array of 24 electrodes sitting on the bottom of a 200 microns wide, 30 microns deep and 6 millimeters long titanium channel. The electrodes are 20 microns wide with a pitch of 40 microns. With appropriate voltage amplitude and frequency, we show the concentration of nanometer particles onto the middle of the electrodes despite strong Brownian motion whereas bigger particles tend to accumulate at the edges of the electrodes due to stronger dielectrophoretic force. The concentration process takes place in few hundreds of milliseconds. This experiment is the first step for control of nanometers particles. We discuss the advantage of nano-concentration and present quantitative results.

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