

Abstract Submitted  
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**Spatial Detection of Submicron Particles with Integrated Circuit Charge Sensors**<sup>1</sup> DAVID ISSADORE, TOM HUNT, ROBERT WESTERVELT, Harvard University — Using a standard MOSIS 0.35 micron Integrated Circuit process, we have built a position sensor for use in all-electrical feedback traps for submicron particles. The device has four transistors in a square, with floating gates that capacitively detect a charged particle in a microfluidic chamber above. The four transistors form the front ends of two independent differential amplifiers that report the x and y position of the particle. Future work towards integration of dielectrophoretic feedback forces for an all-electrical “Anti-Brownian motion” trap will be discussed.

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