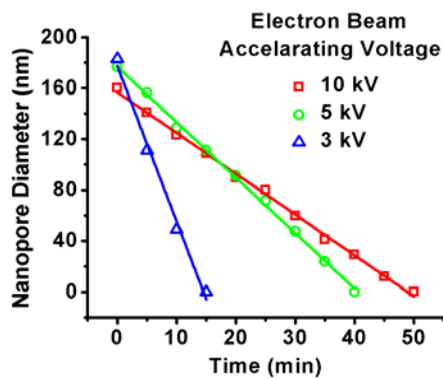


# Effect of Fabrication-Dependent Shape and Composition of Solid-State Nanopores on Single Nanoparticle Detection

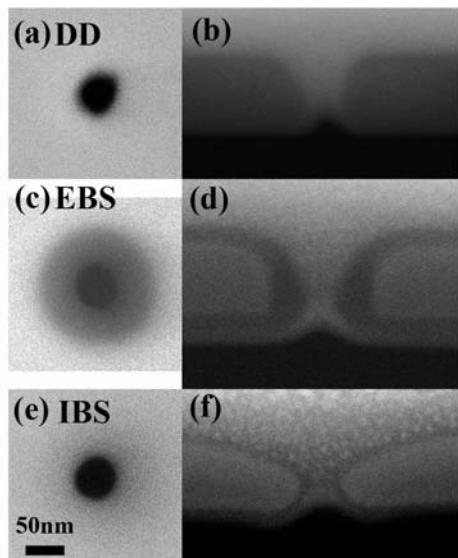
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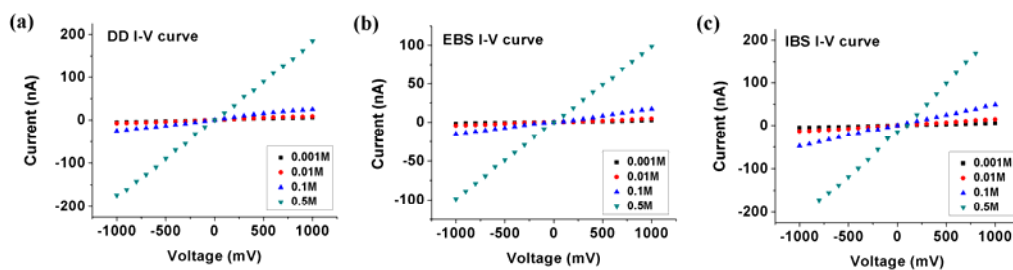
\*E-mail: [hschmidt@soe.ucsc.edu](mailto:hschmidt@soe.ucsc.edu)



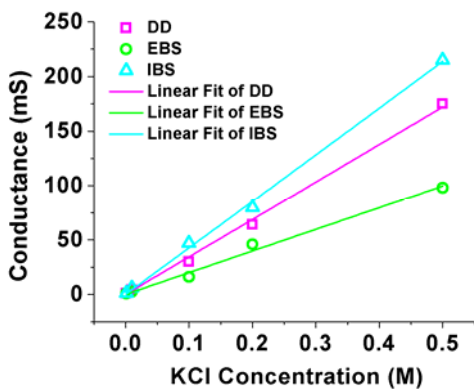
**Figure 1.** Change of nanopore diameter *versus* electron beam scanning time when 3 kV, 5 kV and 10 kV accelerating voltages are used.



**Figure 2.** Scanning electron micrographs of 50nm nanopores made on 100nm membranes. The left column shows top-down images of (a) directly drilled, (c) electron beam shrunk, and (e) ion beam shrunk nanopores. Images (a) and (g) were taken with 20kV electron beam, and image (d) was taken using 5kV electron beam. The right column shows side views of the same nanopores after deposition of a protective top layer of platinum and cross-sectioning.



**Figure 3.** I-V curves of (a) directly drilled, (b) electron beam shrunk and (c) ion beam shrunk nanopores in salt solutions of different concentrations.



**Figure 4.** Nanopore conductance *versus* KCl concentration. Our operating concentration is 0.2M.