

Abstract Submitted
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Capacitance response of porous and cavitized nanocoax arrays to various gases¹ PATRICK JAMIESON², BINOD RIZAL, SVET SIMIDJIYSKI, HUAIZHOU ZHAO, DONG CAI, MARK HASENAUER, MICHELLE ARCHIBALD, STEPHEN SHEPARD, GREGORY MCMAHON, MICHAEL J. BURNS, THOMAS C. CHILES, MICHAEL J. NAUGHTON, Boston College — Arrays of nanoscale coaxial electrodes with hollow or porous annuli offer the potential of highly sensitive detection and identification of gases and molecules. We report on the response of a porous and a partially hollow (cavitized) array to the introduction of various vaporized laboratory solvents. The response is measured as the capacitance and loss changes due to the introduction of molecules into the annuli, associated with the dielectric constant of the solvents, as well as the quantity and pressure. A monotonic dependence on concentration in dry nitrogen was observed.

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