

Abstract Submitted
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Field deployable microcantilever based chemical sensing: discrimination between H₂O, DMMP and Toluene E.J. THORESON, ITT AES, NSTA, Dayton, OH 45431, T.H. STIEVATER, W.S. RABINOVICH, M.S. FERRARO, N.A. PAPANICOLAOU, R. BASS, J.B. BOOS, J.L. STEPNOWSKI, R.A. MCGILL, Naval Research Laboratory, Washington, DC 20375 — Low cost passive detection of Chemical Warfare Agents (CWA) and being able to distinguish them from interferences is of great interest in the protection of human capital. If CWA sensors could be made cheaply enough, they could be deployed profusely throughout the environment intended for protection. NRL (Naval Research Labs) has demonstrated a small sensor with potentially very low unit cost and compatible with high volume production which has the ability to distinguish between H₂O, DMMP, and Toluene. Additionally, they have measured concentrations as low as 17 ppb passively in a package the size of a quarter. Using the latest MEMS technology coupled with advanced chemical identification algorithms we propose a development path for a low cost, highly integrated chemical sensor capable of detecting CWA's, Explosives, VOC's (Volatile Organic Chemicals), and TIC's (Toxic Industrial Chemicals). ITT AES (Advanced Engineering & Sciences) has partnered with NRL (Naval Research Labs) to develop this "microharp" technology into a field deployable sensor that will be capable of remote communication with a central server.

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