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Alkanethiol Coated Nanosprings for the Detection of Nitrogen-Rich Explosives JESSICA HALL, ALEXANDER LARIN, DEWAYNE SOWELL, VLADIMIR DOBROKHOTOV, Applied Physics Insitute — In battle fields without clearly drawn lines such as Iraq and Afghanistan the detection of Improvised Explosive Device (IED) requires the use of advanced detection methods. A method of detection is to use alkanethiol coated nanosprings for the detection of nitrogen-rich explosives. The intent was to functionalize the nanospring mats for the detection of TNT, but through experimentation it was found that they are significantly more sensitive and selective to ammonium nitrate. Ammonium nitrate is the explosive component of fertilizer found in many IEDs. There is potential to incorporate these functionalized nanospring mats into an integrated system for the detection of IEDs.

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