

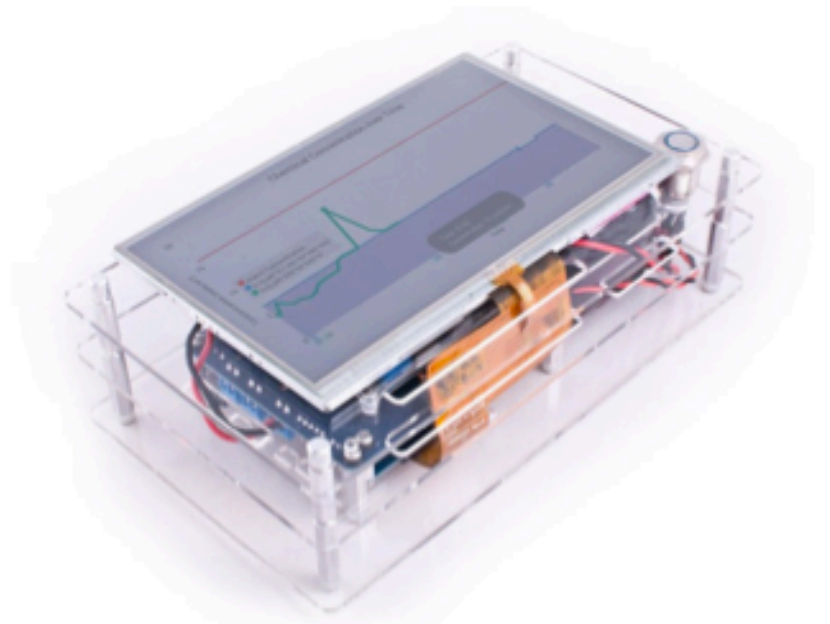
ChemSense - University of Texas, Austin

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Weighing in at only two pounds, ChemSense brings sophisticated laser spectrometry out of the lab and into the field, where soldiers might use it to detect

weaponized airborne chemicals and oil rig workers to track rising levels of harmful gases in their wells. This handheld spectrometer looks like a bulked-up Kindle, and it was developed to seek out airborne chemicals and pollutants in the mid-infrared spectrum, the wavelength region where those gases are best detected. The laser's light is guided through a nano-thin semiconductor membrane, which concentrates the laser's photons and makes it incredibly small and energy efficient, yet still able to detect gas concentrations as low as 10 parts per billion. The lasers, sensors and detectors are packed into an area of less than one square inch, and onboard Bluetooth can send data directly to mobile phones or laptops.



(UT Department of Electrical and Computer Engineering)