

THE FIRST PARTS PER TRILLION DETECTION IN REAL TIME USING SIFT-MS

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Selected Ion Flow Tube - Mass Spectrometry (SIFT-MS) is a technique for detection of volatile compounds in gas samples, historically at levels from parts per million down to a few parts per billion. This paper reports the first detection of a volatile compound at parts per trillion levels in real time. Phosphine, a toxic chemical often used for fumigation of shipping containers was detected at levels from 190 ppt up to ppm levels, linearity has also been demonstrated in this range. The methods for increasing the linear range of SIFT-MS detection will be discussed along with the challenges for ppt detection and sample generation.