

HYPER-SPECTRAL IMAGING AND ANALYSIS OF A SAMPLE OF MATTER, FOR IDENTIFYING AND CHARACTERIZING AN OBJECT OF INTEREST THEREIN

ABSTRACT OF THE DISCLOSURE

Method for hyper-spectral imaging and analysis of a sample of matter, for identifying and characterizing an object of interest therein. Preparing test solution or suspension of the sample, including adding thereto a spectral marker specific to object of interest, such that if object of interest is in test solution or suspension, object of interest becomes a hyper-spectrally active target which is hyper-spectrally detectable and identifiable; adding to test solution or suspension a background reducing chemical, for reducing background interfering effects caused by presence of objects of non-interest in test solution or suspension, thereby increasing hyper-spectral detectability of hyper-spectrally active target in test solution or suspension; generating and collecting hyper-spectral image data and information of test solution or suspension; and, processing and analyzing thereof. Exemplary objects of interest are biological agents - bacteria (*Bacillus anthracis*), viruses, fungi, toxins, or, chemical agents - nerve agents (sarin, tabun, soman), and chemical poisons.

Figure: 1