Novel Reagents for Oxidizer-based Explosives for Use with Ambient Ionization Technology
Technology #16163

Applications

This technology is used in the detection of concealed explosives and toxic chemicals.

Problem Addressed

Detecting inorganic and organic oxidizer-based explosives is difficult using current methods because of their low vapor pressure and low ionization yield. Therefore, there is a need to develop a better way for detecting oxidizer compositions and oxidizer-based explosives.

Technology

This invention introduces a novel way to detect oxidizers, inorganic salts and other analytes of interest by using a new class of ionization reagents such as crown ethers, glymes, sugars, cryptands, or cavitands. These reagents interact with the target analytes to selectively enhance their ionization yield and then form an associate adduct that facilitates their detection. These reagents are particularly useful in detecting oxidizer analytes, such as salts of nitrates, nitrites, chlorates, perchlorates, permanganates, dichromates or osmium tetroxide.

Advantages

- Detects inorganic and organic oxidizer-based explosives that are difficult for conventional methods to detect
- Can also be used in conjunction with other ionization reagents, such as conventional compositions currently used in spectrometric detection

Categories For This Invention:

Chemicals
Lincoln Laboratory
Photonics
Other (Photonics)
Sensors (Photonics)
Detectors

Intellectual Property:

Reagents for oxidizer-based chemical detection
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Reagents for oxidizer-based chemical detection
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Inventors:
Kerin Gregory
Michael Sworin
Roderick Kunz

External Links:
Lincoln Laboratory
https://www.ll.mit.edu/