**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 tetraoxide.

**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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