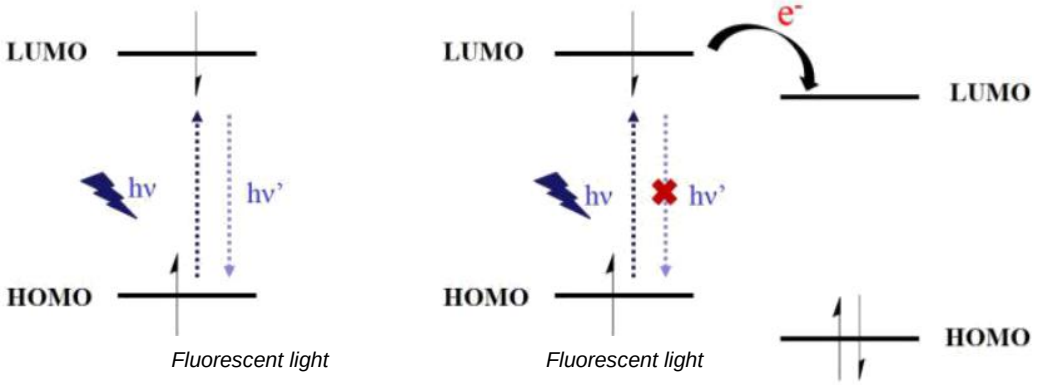
Introduction to Fluorescence Trace Detection Technology

The core sensor of our proprietary handheld explosive detector is a sensitive element consisting of proprietary fluorescent materials.

1 What are fluorescent trace detection materials?

Fluorescence effect refers to the process by which a material enters a state of excitation through absorbing external incident light waves, while quickly returning to its base state through releasing a longer wavelength fluorescent signal. Chemicals with specific energy levels and structures can quench the fluorescence effect of other substances by means of charge transfer.

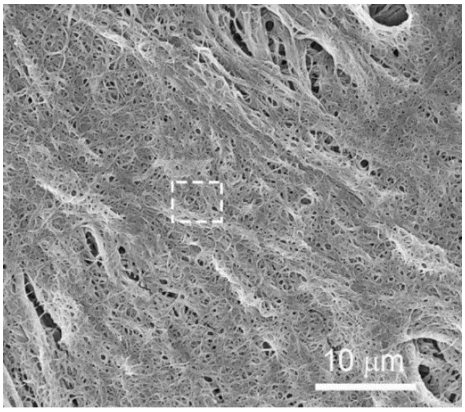
Through precise structural chemical design, this technology utilizes molecular groups that can be selectively quenched by explosive substances. In the case that no material is detected, a fluorescent photon is released, however in the case that an explosive substance is detected, this fluorescent effect will be quenched (weakened) and it is through observing these changes in the strength of the fluorescent signals, we can detect if explosive substances are present or not.

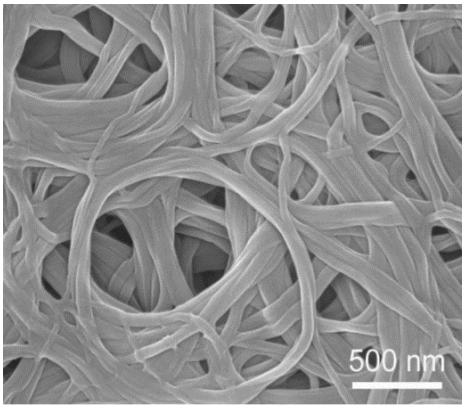


No material detected **Material detected**

2 Material Information

The sensitive films for explosive substances detection are made through forming fibers via complicated reactions, which produces three-dimensional films.





Ultra-sensitive level detection of explosives is achieved through the amplification effect of multiple levels of physical and chemical processes. Due to our proprietary film structure, our sensitive materials can absorb explosive substances in different directions, thereby ensuring high sensitivity and high durability of our sensors.

3 Advantages

- While maintaining ultra-high sensitivity, our material has stronger fluorescence stability than conventional fluorescent polymers, thus they are more durable, and have stronger self-recovery ability during substance overload
- Through unique algorithms and tightly controlled production processes, the ability of our product to counter interreference is vastly improved
- Compared with traditional fluorescent polymers, our sensor is more sensitive and is more resistant to interference when detecting blackpowder
- The technology behind our sensing elements is fully proprietary to us at HT-Nova

For more information, please email us at: info@htnova.com

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