

New fluorescent sensing material created

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U.S. and Chinese scientists have created a type of fluorescent sensing material that could lead to rapid detection of explosives in security screening.

In the study, Southern Illinois University's Ling Zang and colleagues at the University of Illinois and the Chinese Academy of Sciences note fluorescent-based sensors signal the presence of explosives by losing their glow. Such devices, however, have serious limitations, which created the need for a new generation of sensor materials.

The researchers said their newly developed fluorescent film, made from nanofibrils, overcomes those disadvantages. In laboratory tests, it sensed the presence of vapors from TNT and a related explosives compound with greater effectiveness than existing materials.

After sensing the compounds and losing its fluorescence, the material recovered its ability to fluoresce repeatedly during the tests.

The scientists said their experiments also suggest sensors made from the material would resist deterioration from exposure to sunlight, another drawback with existing sensor materials.

The research is to be published in the June 20 issue of the Journal of the American Chemical Society.

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