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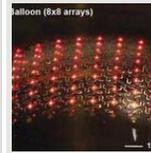
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AIRPORT SECURITY • SCANNERS • SHOES

## New scanning device can spot a shoe bomb in seconds



If you don't like taking off your shoes in the **airport security line**, you can blame triacetone triperoxide (or TATP), the hard-to-detect explosive used in the likes of shoe bombs. Well, you'll still have to take off your footwear to get scanned, but TATP just got a lot easier to spot thanks to researchers at the University of Illinois.

The new scanning device had to take a different route when scanning for TATP as the substance doesn't absorb ultraviolet light or fluoresce or readily ionize — things chemical scanners typically watch out for. What's more the current scanners used to root out TATP tend to be big and expensive, two qualities that keep them from getting rolled out at airport security checkpoints en masse.

The boys and gals at Illinois, however, have found that looking for color in the molecular structure of things can be quite effective, according to **EurekAlert!**:

*Kenneth Suslick, the Schmidt Professor of Chemistry at the U. of I., and postdoctoral researcher Hengwei Lin have developed a colorimetric sensor array that can quantitatively detect even very low levels of TATP vapor - down to a mere 2 parts per billion. They wrote about their findings in an article published in the Journal of the American Chemical Society.*

*To create the sensor array, the researchers print a series of 16 tiny colored dots - each a different pigment - on an inert plastic film. A solid acid catalyst breaks down TATP into detectable components that cause the pigments to change color, like litmus paper.*

*Each pigment changes colors depending on the concentration of TATP in the air. The array is digitally imaged with an ordinary flatbed scanner or an inexpensive electronic camera before and after exposure to the air.*

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By Kevin Hall  
4:59PM on Oct 19, 2010



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The best part? The new scanners are inexpensive, easy to use, can detect traces of TATP in seconds and are about the size of a postage stamp. The scanner doesn't get confused by hygienic products or the like, either.

You'll still have to take your shoes off to be scanned, mind, but with the new scanners it wouldn't be up to the security officials alone to try and spot an improvised explosive device.

Via **EurekAlert!**  
(Image)

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