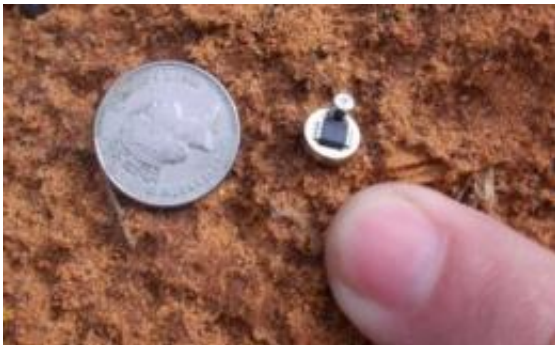# Intruder alert: 'Smart Dew' will find you!

March 26 2009

A Tel Aviv University researcher's fingertip (bottom right) points to a "Smart Dew" droplet. Credit: AFTAU

A remarkable new invention from Tel Aviv University — a network of tiny sensors as small as dewdrops called "Smart Dew" — will foil even the most determined intruder. Scattered outdoors on rocks, fence posts and doorways, or indoors on the floor of a bank, the dewdrops are a completely new and cost-effective system for safeguarding and securing wide swathes of property.

Prof. Yoram Shapira and his Tel Aviv University Faculty of Engineering team drew upon the space-age science of motes to develop the new security tool. Dozens, hundreds and even thousands of these Smart Dew sensors - each equipped with a controller and RF transmitter/receiver - can also be wirelessly networked to detect the difference between man, animal, car and truck.

"We've created a [generic system](link) that has no scale limitations," says Prof. Shapira. This makes it especially useful for large farms or even the borders of nations where it's difficult, and sometimes impractical, to install fences or constantly patrol them.

"Most people could never afford the manpower to guard such large properties," explains Prof. Shapira. "Instead, we've created this Smart Dew to do the work. It's invisible to an intruder, and can provide an alarm that someone has entered the premises."

"The Cheapest and Smartest Solution on the Market"

Each individual "dew droplet" can detect an intrusion within a parameter of 50 meters (about 165 feet). And at a cost of 25 cents per "droplet," Prof. Shapira says that his solution is the cheapest and the smartest on the market.

A part of the appeal of Smart Dew is its near-invisibility, Prof. Shapira says. "Smart Dew is a covert monitoring system. Because the sensors in the Smart Dew wireless network are so small, you would need bionic vision to notice them. There would be so many tiny droplets over the monitored area that it would be impossible to find each and every one."

Electronic Ears, Noses, Skin and Eyes

Unlike conventional alarm systems, each droplet of Smart Dew can be programmed to monitor a different condition. Sounds could be picked up by a miniature microphone. The metal used in the construction of cars and tractors could be detected by a magnetic sensor. Smart Dew droplets could also be programmed to detect temperature changes, carbon monoxide emissions, vibrations or light.

Each droplet sends a radio signal to a "base station" that collects and analyzes the data. Like the signals sent out by cordless phones, RF is a safe, low-power solution, making Prof. Shapira's technology extremely cost-effective compared to other concepts.

"It doesn't require much imagination to envision the possibilities for this technology to be used," says Prof. Shapira. "They are really endless."

Source: Tel Aviv University ([news](#) : [web](#))