PLATYPUS TECHNOLOGIES MAKES TOXIN DETECTORS

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Using plumes of evaporated gold and binder clips from Office Depot, local startup company Platypus Technologies is developing breakthrough devices to detect tiny amounts of pesticides and toxins.

UW-Madison chemical engineer Nick Abbott co-founded the company with two other professors to commercialize his discoveries. The Aussie academic decided to name the company after another Australian native, the platypus, whose bill has special receptors for detecting prey.

"She lays eggs, but she lays golden eggs," chief executive officer Barbara Israel said of the company's namesake.

Platypus hopes to do the same with the detectors it's developing, which depend on incredibly thin, precisely patterned surfaces.

Workers deposit see-through films of gold on pieces of glass by rotating them over rising columns of evaporated gold, Israel said. Liquid crystals similar to those in a calculator display are then sandwiched between those pieces of glass and gold.

When a pesticide molecule binds to the detector at key points, it changes the inner order of the crystals and their outward color, giving readings useful for studying the effects of trace amounts of pesticides on children or farmers.

The company brought in about $3.4 million in federal grants last year and moved its 20 employees into new offices at the Fitchburg Technology Campus, Israel said. Products in development include devices for testing for viruses such as West Nile, she said.

And the binder clips? Platypus used to remove their metal arms and use the black grippers to clamp together the sandwiches of glass, gold and liquid crystals. Now the firm is starting to use plastic holders, but Israel jokes that anyone with a use for boxes of old clips and metal arms should give her a call.