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WATCH | Here are the science stories you may have missed in November

T f s an Inside Science story.

R t archers from MIT have come up with a new way to fabricate nanoscale structures using an innovative "shrinking" technique. The new method uses equipment many laboratories already have and is relatively straightforward, so it could make nanoscale fabrication n. accessible.

Conventional nanostructure manufacturing techniques -- ones that involve direct assembly or 3D printing -- are directly limited by the precision of the machines. The new technique gets around this limitation by first creating a bigger structure inside of a gel, then shrinking the gel, which brings the structure down to one-thousandth the volume of the original.

(MORE: A new way to measure vibrations may eventually help detect gravitational waves)

This technique probably sounds familiar if you have ever played with Shrinky Dinks, the plastic sheets you can color and then shrink in the oven. Similar to how one can more easily fit many details in Shrinky Dink drawings before they are miniaturized, the researchers were able to more easily create delicate nanostructures by making much larger versions first. They built the structures inside of polyacrylate -- a gel commonly found in diapers -- and then used an acid to chemically shrink the whole thing to one-tenth of its original length in each of the three dimensions.



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PHOTO: Illustration depicting a coffee cup shrinking.

It is a reversed version of a recently developed technique known as expansion microscopy, in which biological samples are embedded in a gel that is then expanded, allowing researchers to discern details that were previously too small to be seen.

(MORE: Scientists have discovered a hidden talent of geckos)

To test their methods, the researchers created silver wires, which retained their shape after shrinking. They also created another design that used the shrinking process itself to assemble a more complex structure. According to the researchers, the technique could be used to build nanostructures out of virtually anything, even "a piece of DNA." They published their findings online today in the journal Science.

Inside Science is an editorially-independent nonprofit print, electronic and video journalism news service owned and operated by the American Institute of Physics.

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4 strategies for stopping 'rogue' drones from flying in illegal airspace

By RAHUL JOGLEKAR Dec 22, 2018, 1:59 PM ET



STOCK PHOTO/Getty Images

WATCH | 2 suspects arrested in connection with drone usage that closed Gatwick Airport

Christmas approaching, London's Gatwick airport, one of the busiest in the U.K., was forced to shut down for a day this week after reports of two "rogue" drones flying above the airfield.



Drones have become an increasingly prominent nuisance in the skies as they have grown more accessible to the average consumer. As regulations, technologies and laws about flying drones evolve to governmental demands, new technologies have been developing to



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“We have devices that scan the airwaves for the signature of a drone. Once it is detected, [we] then deploy and activate our protection system such as SkyFence,” he told ABC News.

(MORE: Thousands of drones used for light show during Olympics opening ceremony)

The SkyFence technology, developed by Drone Defense, works like an invisible fence to block drones from entering protected airspaces, such as that above a prison compound in Guernsey, a British island located on the English Channel.



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Matt Rourke/AP, FILE

A drone operated camera captures videos and still images of an apartment building in Philadelphia, April 14, 2016.

Drones catching other drones

Another solution companies are offering is the “hunter” drone — a larger drone that can hunt for the rogue drone in the air. It’s also possible to deploy more than one hunter drone to catch rogue drones, and they shoot a net to capture the offending drone, after which they bring the rogue drone down to the ground safely.

[Delft Dynamics](#) is a Dutch company funded by a government grant that says it developed the hunter drones four years ago.

“It is a sort of cat-and-mouse play by which we follow another drone... and from a distance of 10 to 15 meters, we can shoot a net by air pressure, and with four rubber bullets we spread the net,” Arnout de Jong, CEO of Delft Dynamics, told ABC News. “The drone will be entangled in the net and [we] carry the drone away in that net.” And if the rogue drone is too fast, de Jong said they simply release more hunter drones.

A net-shooting gun

Similar to Delft Dynamics, [OpenWorks Engineering](#) is a company that has developed a gun that shoots nets from the ground.

“They throw a large fishing net into the air which wraps up the drone, tangles up the propellers — doesn’t matter what kind of drone it is — and disables the drone,” said James Cross, director of OpenWorks Engineering. “As the drone falls to the ground, it deploys a parachute as well to also minimize the damage to the surrounding areas.”

(MORE: FAA expands restrictions on drones near high-priority Navy bases)

This product is called the SkyWall, and it was once deployed to protect President Barack Obama during a visit to Berlin in 2016, the company said. The Skywall system, developed by the British company, looks a bit like a missile launcher and has been used by facilities



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