

Carnegie Mellon spinoff nanoGriptech is first mass manufacturer of a gecko-inspired adhesive

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The adhesive's glue-free fibers mimic the adhesive qualities of gecko foot hair. Intermolecular forces found at the tips of the hairs enable geckos to walk across ceilings. Credit: Carnegie Mellon University Mechanical Engineering

Carnegie Mellon University spinoff nanoGriptech has announced the launch of Setex, the first commercially available gecko-inspired adhesive. Because it is dry and can repeatedly grip to surfaces without leaving a residue, Setex addresses the needs of many industries, including automotive, manufacturing, medical, defense, aerospace and apparel.

nanoGriptech was founded by Metin Sitti, a professor of [mechanical engineering](#) at Carnegie Mellon who worked for nearly a decade to

understand and synthesize biologically inspired micro/nanostructured adhesives. Headquartered in Pittsburgh, nanoGriptech exemplifies how universities and industry work together to support innovation and economic growth.

Video Explanation of how Setex attaches and grips to surfaces like a gecko:

"Much like Velcro or Kevlar, we believe Setex will disrupt markets because of its many commercial applications. Setex is residue-free, strong and reusable," says Roi Ben Itzhak, nanoGriptech CFO and vice president of business development. "There are other gecko-inspired materials in labs around the world, but, unlike Setex, they all have weak peel strengths and are prohibitively expensive to manufacture."

Setex's glue-free fibers mimic the adhesive qualities of gecko foot hair. Intermolecular forces found at the tips of the hairs enable geckos to walk across ceilings. Like a gecko's foot, Setex can be applied to a variety of surfaces and lifted repeatedly. The synthetic fibers are strong—several square inches of Setex will support hundreds of pounds. nanoGriptech researchers can customize their manufacturing techniques at the microscale level to produce materials that are modified for different applications, such as enhancing a robot's ability to pick up a part or improving the fit of prosthetic limbs on skin.

Since nanoGriptech was founded in 2009, Carnegie Mellon has received four patents, and eight more are pending. The company's customers include NASA, the Department of Defense and Fortune 500 companies.

Video Example of how Setex picks up and repositions a fragile object, a task that is important in manufacturing:

Provided by Carnegie Mellon University Mechanical Engineering

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