

New robotic gripping surface for sensitive devices adds a new dimension to handling

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During production, these parts have to be handled repeatedly by pick-and-place processes. The proprietary Geomer principle reduces the risk of surface contamination with residues, and of mechanical damage due to gripping. In their latest version, researchers at the Leibniz Institute for New Materials (INM) have improved the adhesive force in their Geomer structures up to 20 kg per 25 cm². Within these new findings, it will be possible to use the same gripper for heavy, robust and lightweight, sensitive devices. These innovations will open up new avenues for Industry 4.0.

The researchers from the INM will be presenting their results at the International Nanotechnology Exhibition and Conference nano tech 2016, Tokyo, Japan.

"Artificially produced microscopic pillars, so-called gecko structures, adhere to various items. By manipulating these pillars, the adhesion can be switched on and off. Thus, items can be lifted and released quickly and precisely," Karsten Moh from INM explains. "Our [new materials](#) add a new dimension to the handling of heavy devices which are sensitive, even in vacuum," says Moh, "With the currently developed adhesion system, adhesive forces of more than 7.5 Newton per square centimeter can be achieved. In our tests, the system has proved successful even after 15,000 cycles," the technology expert Moh says. Even slightly rough surfaces can be handled reliably.

The development group now focuses on the gripping of objects with non-

planar surfaces. Additionally, new triggers for switching the adhesion are being explored.

Provided by Leibniz Institute for New Materials

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