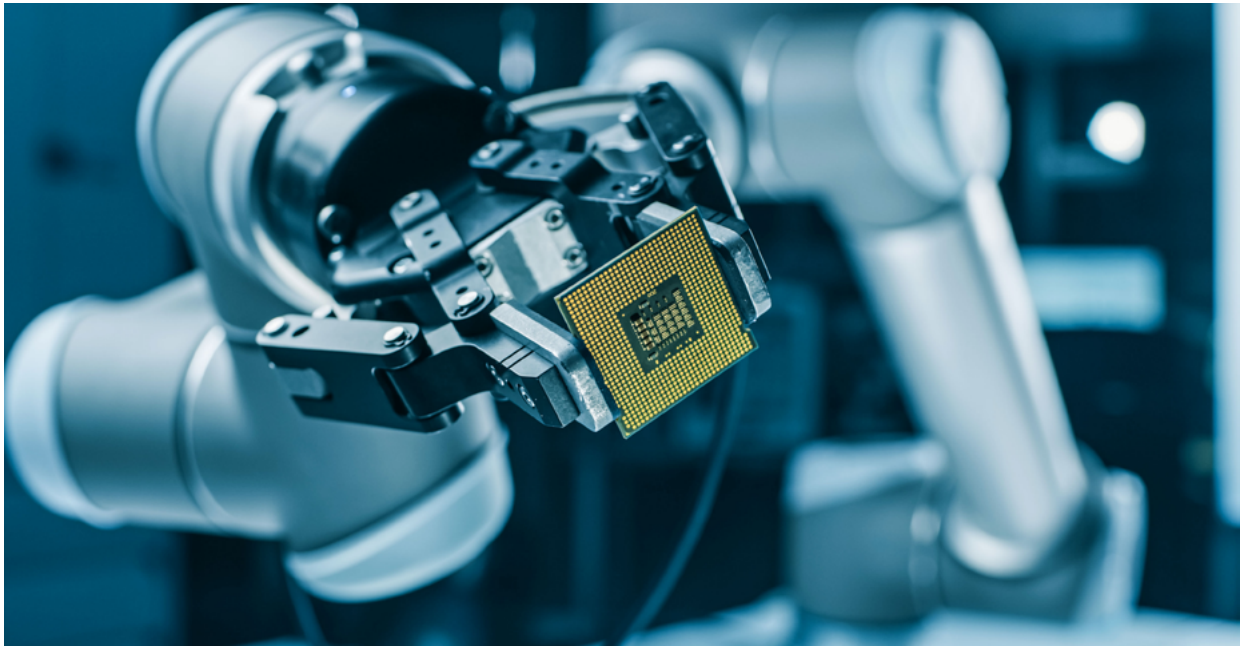


CASE STUDY: AUTOMOTIVE & INDUSTRIAL

REHAU – 3D-PRINTED TOUCH SENSOR

DragonFly LDM enables 3D printing of touch sensors



CLIENT PROFILE

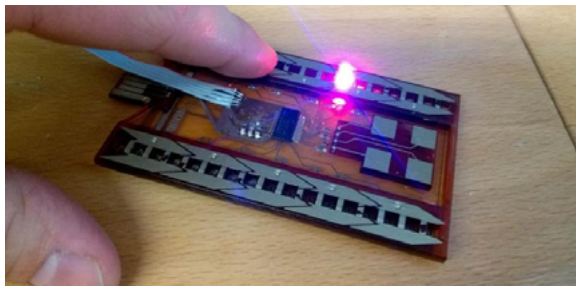
The REHAU Group is a polymer specialist with annual sales of around EUR 3.5 billion. The independent, privately held company has approximately 20,000 employees at more than 170 locations worldwide. The company employs 12,000 throughout Europe and 8,000 in Germany. For more than 70 years, REHAU has been working on making polymer products lighter, more comfortable, safer and more efficient. The company manufactures solutions for construction, automotive, and industry, and supplies its innovative products throughout the world.

www.rehau.com

CHALLENGE

With the rising demand of Smart Homes, Smart Mobility, and Internet of Things (IoT), the polymer-based company REHAU has been searching for new ways to integrate electronics to its products to increase their functionality and efficiency.

REHAU has been looking for a supplier whose technology would enable fast prototyping and proof of concept of specialized touch sensors, with non-standard shapes.



SOLUTION

REHAU chose to collaborate with Nano Dimension, whose DragonFly LDM System, an additive manufacturing machine for printed electronics, perfectly fits the bill.

REHAU succeeded to print with the help of Nano Dimension's application engineers, as an example, a board with two lines of touch sensors designed so that LEDs could fit inside. Together with a printed connector, all electronic components were printed as one piece. Importantly, the board was made of Nano Dimension's in-house materials: insulating polymer ink and conductive ink.

The Additively Manufactured Electronics (AME) method provides printed boards with a smooth and uniform surface, lacking bulges, which are obtained once the components are soldered on the traditional PCBs. This smoothness enables the board to be integrated easily to the product, so it would look and feel as one unit.

This proof of concept ability presents the potential for the agile production of prototypes for smart furniture. The DragonFly system provides REHAU the opportunity to produce prototypes of new devices in-house, within days, completely independent of external partners and long processes.

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“With the DragonFly LDM we will drive forward REHAU's “Electronics into Polymers” strategy to speed up in-house electronics development and find new installation spaces and functions for our products.”

**Dr. Philipp Luchscheider, REHAU
engineer behind the 3D touch sensor
design**

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“Smartification is no longer just a vision for us. REHAU is developing improved products for the smart home and IoT environment, and Nano Dimension is providing important technology to help accelerate the availability of promising new applications.”

**Dr. Ansgar Niehoff, Head of
Technology Platform “Electronics
into Polymers” at REHAU**

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