



High-intensity focused ultrasound surgery with robotics: Research team from Italy wins KUKA Innovation Award 2020

Augsburg, 18 November 2020 – The winners of the KUKA Innovation Award 2020 have been announced: An Italian research team convinced the jury with its innovative concept for a non-invasive surgical procedure using state-of-the-art technology. The innovation award comes with a 20,000 euro prize.

The winning team HIFUSK from the Scuola Superiore St'Anna in Italy developed a non-invasive surgical procedure based on high-intensity focused ultrasound and the KUKA lightweight robot LBR Med. In this way, previously unmet medical needs in the treatment of pathological tissues, such as cancer tissue, can be met.

This combination of a robot and non-invasive ultrasound enables precise surgical treatment without incisions, anesthesia or ionization energy. Robotic control and machine learning ensure a safe procedure, even if target movements change during therapy.

Broadcast instead of handover: Award ceremony at virtual.MEDICA

Due to the coronavirus pandemic, the award ceremony was held for the first time in the form of a live web session at virtual.MEDICA. Peter Mohnen, CEO of KUKA AG, announced the winners of the 20,000 euro prize via video stream. "Innovation is at the very heart of KUKA. And innovative solutions need innovative ideas, both from within the company itself and from outside. That is why we value close collaboration with universities and researchers," said Peter Mohnen.

"Robotics is playing an increasingly important role in medicine and offers a wide range of possibilities," said Dr. Kristina Wagner, Vice President KUKA Corporate Research. "Digitalization and automation can support and relieve the burden in

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the healthcare sector. We at KUKA are addressing this development – also with the Innovation Award and this year's Medical Robotics Challenge".

Robotics ideas for diagnostics, surgery, therapy and rehabilitation

Research teams and young talents from all over the world had entered the contest with their innovative robotics ideas on the topics of diagnostics, surgery, therapy and rehabilitation. An international jury selected the five best ideas. The finalist teams had until November to put their ideas into practice. Due to the coronavirus pandemic, the teams worked under difficult conditions this year. Access to the laboratories was partially restricted and the finalists could not work on the applications at full capacity.

For the implementation of their project, they were provided with a sensitive KUKA LBR Med lightweight robot – the first robotic component to be certified for integration into a medical device. Additionally, the teams received training for the hardware and were supported by experienced KUKA experts throughout the contest. The finalists presented their concepts digitally to an international specialist audience at virtual.MEDICA.

“Artificial Intelligence Challenge” – The KUKA Innovation Award 2021

KUKA launched the Innovation Award in 2014 with the aim of promoting innovations. The annual contest is intended to accelerate the pace of innovation in the field of robot-based automation and to facilitate the transfer of technology from research to industry. It is aimed at developers, graduates and research teams from companies or universities. The theme of next year's Innovation Award is “Artificial Intelligence Challenge”. The focus will be on concepts covering any aspect of artificial intelligence.

KUKA

KUKA is a global automation corporation with sales of around 3.2 billion euro and roughly 14,000 employees. The company is headquartered in Augsburg. As one of the world's leading suppliers of intelligent automation solutions, KUKA offers customers everything they need from a single source: from robots and cells to fully automated systems and their networking in markets such as automotive, electronics, general industry, consumer goods, e-commerce/retail and healthcare. (As at 31 December 2019)