PRESS RELEASE 07/05/2026

Precise nerve preservation using photonic and quantum-based technologies

Launch of the BMFTR-funded Quintesens collaborative project

The Quintesens (Quantum and photonic based Intraoperative Nerve TEsting and SENSing) research project, funded by the Federal Ministry of Research, Technology and Space (BMFTR), was launched at the beginning of April. In this three-year collaborative project, Erbe Elektromedizin GmbH, Advanced Quantum GmbH, the University of Stuttgart, the Rhineland-Palatinate University of Technology Kaiserslautern-Landau, Klinikum Darmstadt and inomed Medizintechnik GmbH are working together to develop a novel intraoperative sensor technology for nerve identification.

Colorectal cancer is the second most common form of cancer and the second leading cause of cancer-related deaths in Germany. During surgical removal of the tumour, the complex and difficult-to-distinguish structures of the autonomic nervous system in the pelvis pose a particular challenge. However, the precise preservation of these nerves is crucial for patients' postoperative quality of life.

This is where the Quintesens project comes in. The aim is to develop an innovative intraoperative sensor technology through the targeted combination of three complementary approaches: Photonics will be used for tissue characterisation and nerve localisation, quantum sensor technology enables direct functional testing, and, in addition, pelvic neuromonitoring will be used to assess nerve function through electrical stimulation and evaluation at the target organ. The intelligent combination of these technologies is intended to enable reliable nerve preservation during surgical procedures.

As part of the project, an electrosurgical instrument is being developed that integrates the various sensor technologies and allows for high-precision identification of nerves in real time without disrupting the surgical workflow. The planned demonstrator acts as an early warning system during tumour resection and places high demands on sensitivity and spatial resolution. Furthermore, the technology has potential for further medical applications.

At the kick-off meeting on 17 April 2026, the project partners engaged in intensive discussions regarding key focus areas, work packages and defined milestones. Over the next three years, they will pool their expertise in medicine, medical technology and applied research to develop a practical solution for clinical use.

By funding Quintesens, the BMFTR is making an important contribution to the development of innovative technologies in rectal surgery and to the sustainable improvement of patient safety.

inomed Medizintechnik GmbH
Im Hausgruen 29
79312 Emmendingen

Phone: +49 7641 9414-0
Fax: +49 7641 9414-94
info@inomed.com

www.inomed.com

With funding from the:

Federal Ministry
of Research, Technology
and Space

Kick-off for Quintesens: The project consortium at the kick-off meeting of the BMFTR-funded collaborative project © Erbe Elektromedizin GmbH

inomed Medizintechnik GmbH

inomed develops, manufactures and distributes medical technology products in the fields of Intraoperative Neuromonitoring, Functional Neurosurgery and Pain Treatment. For almost 35 years, inomed devices have been helping to improve treatments and increase patient safety. The inomed group has over 450 employees, eleven subsidiaries and a large network of trained distributors in more than 100 countries.

Press contact:
inomed Medizintechnik GmbH
Laura Karl
press@inomed.com
Phone: +49 7641/9414-786