DeepEn GmbH Secures Seven-Figure Seed Round and Prestigious EIC-Transition Grant for Novel Holographic Endoscopes

DeepEn GmbH, a pioneer in holographic endoscopy technology, has successfully closed a seven-figure seed financing round from the investors bm|t, MBG Thüringen, and Sparkasse Jena-Saale-Holzland. This investment will accelerate the development and commercialisation of the world's thinnest microscopy tools designed to advance neuroscience and biomedical research.

In addition, NEUROGATE, a collaboration between the startup and three European institutes, has secured €2.5 million of funding from the European Innovation Council (EIC) Transition Programme in January 2025. Together, the consortium aims to advance the minimally invasive technology to a variety of new applications.

Investing in Neurophotonics Innovation

DeepEn's endoscopes use advanced algorithms and holographic techniques to control laser light as it travels through a single optical glass fibre. When the fibre is inserted into an organ like the brain, it can bundle the light beam into a clean focus point, enabling laser scanning microscopy in previously inaccessible, deep tissue regions. This innovative technology has been endorsed by the 2024 Life Sciences Award of the European Microscopy Society.

Prototypes of the microscopy devices have already been used to image neurons and cancer cells in animal models. With the investment, the DeepEn team, led by CEO Dr Sergey Turtaev, plans to finalise and launch its first product, the NeuroDeep® in-vivo microscopy system, while accelerating the development of next-generation holographic endoscope technology for even more advanced applications.

With bm|t, MBG Thüringen, and Sparkasse Jena-Saale-Holzland, DeepEn has gained three seasoned investors with valuable experience in the optical ecosystem in central Germany. "We warmly welcome our new investment partners on board and want to thank them for their trust in DeepEn's team and technology," says Turtaev. "Together, we will pursue our

vision of enabling the development of innovative diagnostic and therapeutic approaches for neuronal diseases through our powerful imaging tools."

Successful Transfer of Cutting-Edge Research

Starting in 2011, Prof. Dr Tomas Čižmár, a later DeepEn co-founder, worked on the holographic endoscope technology at the University of St. Andrews and the University of Dundee in Scotland. In 2016, Sergey Turtaev joined the research group during his doctoral studies. In 2017, the scientists relocated to the Leibniz Institute of Photonic Technology (Leibniz IPHT) in Jena, Germany, where they continued their work, funded by the prestigious ERC consolidator grant LIFEGATE.

In 2020, DeepEn's commercialisation journey began thanks to the EXIST Transfer of Research program from the German Ministry for Economic Affairs and Climate Action, leading to a spin-out of DeepEn in early 2024. "This company is a prime example of how high-quality research, which has led to outstanding publications, is rapidly translated into a solid product," says Prof. Dr Jürgen Popp, Scientific Director of Leibniz IPHT. "The team's speed and dedication are impressive."

DeepEn was among the 25 Falling Walls Venture Cup winners in autumn 2024 and was awarded the Thuringian Innovation Prize for young companies.

European Cooperation for Technology Translation

The potential of holographic endoscopy has also been recognised in Brussels. In January 2025, the collaborative project NEUROGATE was awarded €2.5 million by the European Innovation Council (EIC) Transition under Horizon Europe. "With this project, we are transforming the most recent scientific discoveries into valuable solutions for users, allowing monitoring of neuronal activity under natural conditions with unprecedented precision," says Prof. Čižmár.

In addition to Leibniz IPHT and DeepEn, two international partners are involved in NEUROGATE: the Institute of Scientific Instruments of the Czech Academy of Sciences (ISI) in Brno and Neuro-Electronics Research Flanders (NERF) in Belgium. NERF, an interdisciplinary research centre for neurotechnology, is supported by imec, the life sciences institute VIB, and KU Leuven. "We're excited to apply our expertise in advancing neurotechnology applications to better understand the brain and develop new therapeutic strategies for neurological diseases," says Sebastian Haesler of NERF.

The Investors

About bm|t: Based in Erfurt, bm|t is the leading address for corporate investments in Thuringia. bm|t currently manages twelve funds with a total volume of around EUR 445 million, which invest in innovative companies in almost all sectors and in all phases of corporate development — both in the start-up and growth phases or in company succession situations. Further information is available at: www.bm-t.de

About Sparkasse Jena-Saale-Holzland: Since 1828, Sparkasse has been rooted in the region, providing financial services, advisory support, and funding for businesses and communities.

As the largest regional financial partner, it enhances quality of life through digitalisation, financing, and public programmes. Sparkasse actively supports the region's economy, education, sports, and culture. It fosters innovation by backing start-ups like DeepEn GmbH and, together with the Business Angels Club Jena e.V., has created a platform connecting start-ups with private investors to strengthen the regional start-up ecosystem. Further information is available at: www.s-jena.de

About MBG Thüringen: As a strong and reliable partner, Mittelständische Beteiligungsgesellschaft Thüringen mbH offers small and medium-sized enterprises mezzanine and equity investments to strengthen equity capital for start-ups, consolidation, or successions. Companies partnering with MBG thus have a sound basis for solid development and sustainable growth. Further information is available at: www.mbg-thueringen.de

More info about DeepEn at www.deepen-imaging.com

DeepEn Founders (left to right): Dr Sergey Turtaev, Prof. Dr Tomas Čižmár, Dr Hana Čižmárova, Patrick Westermann, Dr Jiri Hofbrucker