



## PRESS RELEASE

Orsay, December 8<sup>th</sup>, 2025

### Imagine Optic announces the acquisition of the Orsay-based SME Karthala System, which specialises in multiphoton microscopy

*This strategic alliance consolidates Imagine Optic's position in the field of bioimaging and will accelerate the industrial deployment of Karthala System.*

**Synergy** The Paris-based SME Imagine Optic, leading player in wavefront analysis and adaptive optics technologies, particularly for advanced imaging applications, has announced the acquisition of Karthala System, a company specializing in ultra-fast two-photon microscopy solutions. This strategic move brings together two complementary companies from the Paris/Orsay region with the aim of strengthening their leadership in the field of photonics and offering a comprehensive range of high-performance microscopy solutions for biomedical research and life sciences.

With already more than 15 installations, Karthala is recognized for the performance of its systems and its original contribution to multiphoton techniques. Neurobiologists have worked hand in hand with Karthala to design instruments that fit their exact needs. Imagine Optic will benefit from this expertise while contributing its technological building blocks, industrial experience, and its own network.

The proximity of the two companies will enable them to take full advantage of the resources available on both sites, one on the Saclay plateau and the other in the Orsay valley. "This alliance will lead to the best technological offer on the 2-photon microscopy market," says Samuel Bucourt, president of Imagine Optic. He adds that, "these technologies are complicated and take a long time to develop, but they are real game changers in the field and will enable us to observe biological samples more finely, more quickly, and in greater depth, to better understand cellular processes and interactions, and to accelerate the development of therapies, particularly in the field of neuroscience."

**Impact** This marks the birth of a new deep tech company in the field of biological imaging, opening up new possibilities in neural exploration, optogenetics, and deep imaging. "With this merger, Karthala System has access to a new expertise and to the industrial experience of Imagine Optic. This will enable quicker development of new features in its systems and will improve the customer experience at all levels," comments Benjamin Mathieu, co-founder of Karthala System.

**Horizon** With this alliance, Imagine Optic further strengthens its ties with the scientific community. For Karthala, this partnership opens a new chapter in its collaboration with IBENS, the Parisian laboratory where the core technology originated. "The academic excellence that surrounds us is an asset in becoming a key player in the field of multiphoton microscopy," says Fabrice Harms, head of microscopy activities at Imagine Optic (mu-Imagine division). The mastered technologies (AOD, adaptive optics, complex microscopy techniques) are key drivers of future innovation and will enable new solutions for their customers. "The two companies share a common interest

in using and manipulating the phase of light to improve the performance of the most advanced microscopy systems, and there are many potential technological synergies,” continues Fabrice Harms.

The teams at Karthala System and mu-Imagine/Imagine Optic are excited about this new adventure, which brings together our academic and industrial partners, as well as all our customers!

**About Imagine Optic :** co-founded by Xavier Levecq and Samuel Bucourt in late 1996, Imagine Optic has developed unique expertise in wavefront sensing and adaptive optics. The company offers optical metrology solutions for optical and photonic process control, for component manufacturing and for laser characterization (HASO – MESO – caM2 product family). It has also developed adaptive optics solutions for ultra-intense lasers (ELI, LMJ, Apollon), ophthalmology (Imagine Eyes spin-off in 2003), astrophysics and ground-satellite communications (CIAO system), and microscopy, the latter activity being developed within the mu-Imagine division.

[www.imagine-optic.com](http://www.imagine-optic.com)

**About mu-Imagine :** as a division of Imagine Optic, mu-Imagine develops adaptive optics components and modules specifically designed for microscopy, including the recently launched mu-DM deformable mirror and the MicAO-3DSR module for super-resolution microscopy. mu-Imagine aims to remove the barriers to widespread adoption of adaptive optics technologies in microscopy by making their integration and use transparent to the user. To this end, the company has launched several projects to develop comprehensive solutions in multiphoton microscopy (AOscopy\* project) and light sheet microscopy.

[www.mu-imagine.com](http://www.mu-imagine.com)

**About Karthala System :** founded in 2017 by Benjamin Mathieu and Stéphane Dieudonné, Karthala System has developed the AODscope, a unique 2-photon microscopy solution based on the use of acousto-optic components. This technology, developed by the IBENS laboratory (Institute of Biology of the École Normale Supérieure, PSL University, CNRS UMR 8197, and INSERM U1024), received the INSERM 2016 Innovation Award. It offers the possibility, with exceptional temporal resolution, to stimulate and analyze neuronal activity in the brain in real time. The AODscope is now commonly used, particularly in neuroscience, for intravital visualization of brain activity in different specimens. The development of AOD microscopes at IBENS was carried out in collaboration between the teams of Laurent Bourdieu and Stéphane Dieudonné, and with the IBENS Imaging Platform (Imachem, member of the France BioImaging national infrastructure) led at the time by Benjamin Mathieu.

[www.karthalasystem.com](http://www.karthalasystem.com)

\* This project has received funding from the European Union's HORIZON-EIC-2024 program under grant agreement No 101214841