

### **Advancing Live Biological Research with Holotomography: First Demonstration of Tomocube's New Compact System**

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Holotomography is an imaging technology that enables quantitative, label-free 3D visualization of live biological samples by reconstructing their refractive index (RI) distribution. Unlike conventional fluorescence imaging, it avoids phototoxicity and labeling requirements, making it well suited for non-invasive and long-term studies.

In this workshop, Tomocube will give the first public demonstration of its new compact holotomography-based imaging system. The new system reduces the instrument footprint to roughly one-third of the original HT-X1 series while maintaining the same high-resolution, high-quality 3D RI imaging performance. With options such as multi-channel fluorescence imaging, stage-top incubation, laser autofocus, and multiple wavelength support, it offers the full capabilities of advanced holotomography in a more accessible format suitable for diverse research settings—from space-limited labs to specialized application environments.

Participants will see live demonstrations focusing on high-resolution, label-free 3D imaging of diverse biological samples, with examples combining fluorescence for complementary visualization. The session will emphasize how a smaller, more accessible platform can deliver uncompromised imaging quality for detailed structural and dynamic studies of live samples.