「Superresolution easy3D STED microscopes designed by the inventors of STED microscopy」 This webinar will be hold in C015 at 4.p.m on June 18th.

One of the founders of Abberior Instruments

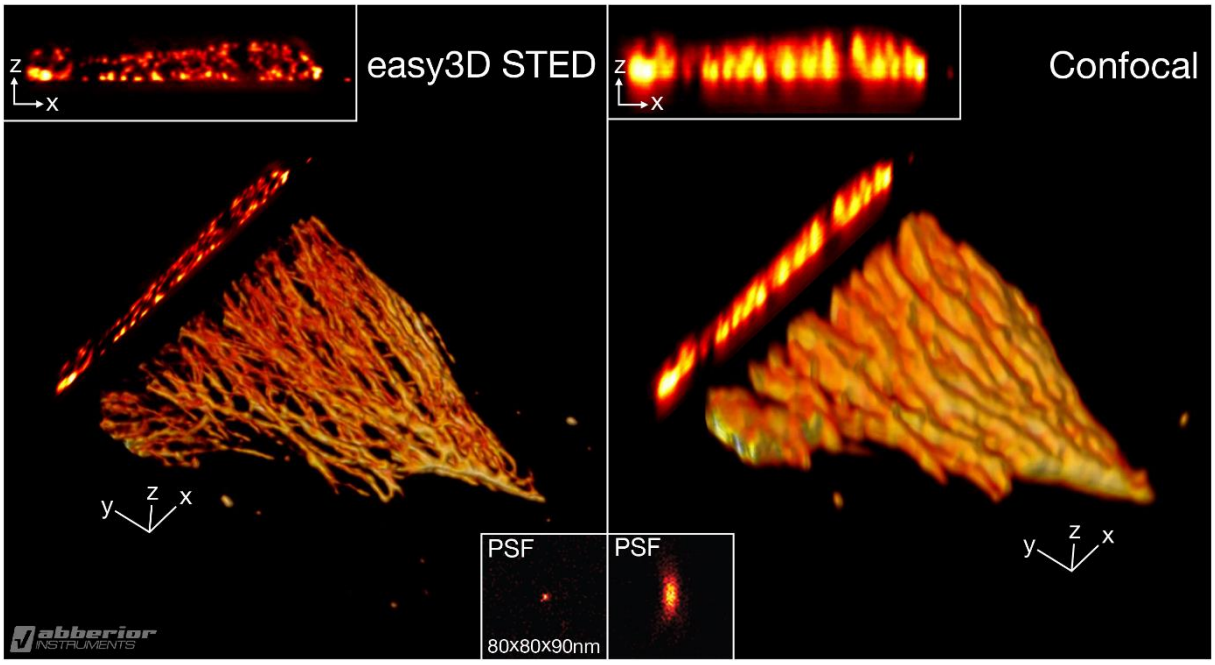
Nobel Prize in Chemistry in 2014 for Stefan W. Hell

Presenter:Dr. Gerald Donnert, CEO Abberior Instruments GmbH, Göttingen, Germany

Abstract. STED microscopy was the first method to fundamentally break the diffraction barrier. Twenty years later, the latest generation of commercial STED microscopes from Abberior Instruments further boosts the resolution by using programmable SLMs to shape and optimize the STED light pattern. This enables the highest resolutions currently possible with figures below 25 nm in 2D and below 80x80x90 nm in 3D.

By and large, STED was mostly performed in a quasi-2D mode, with resolution increase mainly in the focal plane; the reason being that a favorable suppression light field (a “donut”) can be more easily shaped in the lateral direction. Needless to say, a three-dimensional specimen requires a three-dimensional resolution increase in contrast. Instead of forming the suppression intensity distributions in a parallel manner, we do so serially, i.e. without dividing the beam. This results in unmatched stability of the optical system. Furthermore, the ability to freely adjust the phasemask on the SLM enables to use any objective (oil, water, glycerol) for easy3D STED imaging. In addition, the user can compensate for aberrations to guarantee the best resolution in different samples and even tens of microns into the specimen.

Curriculum Vitae. Dr. Gerald Donnert, co-founder and CEO of Abberior Instruments GmbH (www.abberior-instruments.com). PhD graduation at Prof. Stefan W. Hells lab (Max-Planck Institute for Biophysical Chemistry in Göttingen, Germany) working on advancements in STED microscopy. Awarded with the Cozzarelli Prize by the NAS in 2006. 4 years professional experience as a management consultant at McKinsey&Company. Also co-founder and CEO of Abberior GmbH.



Date: Thursday, June 18th Place: C015