

SYFL 1: Plenary Talk Stefan Hell

Time: Tuesday 13:00–13:45

Location: H 0105

Plenary Talk

SYFL 1.1 Tue 13:00 H 0105

Nanoscopy with focused light — ●STEFAN HELL — Max-Planck-Institut für biophysikalische Chemie, Göttingen, Deutschland

For more than a century, it has been widely accepted that diffraction of light precludes any lens-based optical microscope from discerning details smaller than about half of the wavelength of light (~ 200 nm). However, in the 1990*s it was discovered that basic state transitions in

a fluorophore can be exploited to eliminate the resolution-limiting role of diffraction. Since then, fluorescence microscopes have been developed that are now able to resolve on the nanometer scale. We discuss the basic principles of these nanoscopy (superresolution) concepts with particular emphasis on the first viable far-field *nanoscopy* method, STED microscopy. We show their scope of applications in the life sciences and beyond.