

Title of abstract: Fast Super-resolution structured illumination microscope for live cell imaging

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The live cell imaging has been one of the important applications in fluorescence microscopy. Researchers recently report the live cell imaging with super-resolution structured illumination microscopy (SIM). SIM uses a wide-field interference-based illumination technique to resolve fine structural details beyond conventional microscope resolution in cellular specimen. One of the challenges in live cell imaging with SIM is the rapid and accurate switching of interference patterns for fast acquisition.

Nikon will introduce the new structured illumination microscopy N-SIM-S to research community, using newly developed SIM illuminator to enable fast and stable switching of the interference pattern on specimen. This improves the SIM acquisition speed as fast as 10 frames per second, 10x faster than previous standard SIM model. In addition, new N-SIM-S inherits the flexible features such as various SIM acquisition modes from previous model, which makes new N-SIM-S more intuitive and easier to operate.

In this session we will present an overview of Nikon new structured illumination microscopy N-SIM-S with new technology for live cell imaging. We hope that Nikon N-SIM-S can assist researchers to archive the next higher level of Super-resolution live cell imaging.