

ONI | Abstract for Seeing is Believing 2023

Title: A benchtop super-resolution platform for single-molecule imaging and analysis

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Abstract

Super-resolution microscopy uses various techniques to break the diffraction limit and achieve resolutions one order of magnitude higher than traditional light microscopy. These approaches enable researchers to image living samples and resolve features with nanometer precision. Single molecule localization techniques, including dSTORM and PALM, have made it possible to study a range of biological phenomena with unprecedented details, bringing into focus the cellular and molecular details that had once been invisible.

The Nanoimager, is the world's first benchtop super-resolution microscope, capable of visualizing, tracking, and quantifying molecules in living cells with 20 nm resolution. It supports a range of techniques for single-molecule localization and tracking, for researchers to determine nanoscale morphology, biomarker quantification and spatial distribution, among others. Image quality can be enhanced by changing the illumination angle at the click: Epifluorescence, HiLo, or TIRF. Its unique format means that you can achieve beautiful super-resolution images anywhere you like, from your benchtop, desk or inside the tissue culture hood. There is no need for an optical table or dark room. It is compact, permanently aligned and vibration-free.

ONI offers the complete solution to help anyone throughout their super-resolution imaging journey – from sample preparation with reagent kits, to image acquisition and analysis to extract the relevant information to make the most of your data. During the talk, we will showcase what the Nanoimager microscope can do, together with our CODI software, a cloud-based platform to analyze, store and share your data easily.