

Three-dimensional fluorescent microscopy via simultaneous illumination and detection at multiple planes

Qian Ma¹, Bahar Khademhosseini¹, Eric Huang², Haoliang Qian¹, Malina A. Bakowski³, Emily R. Troemel³,
and Zhaowei Liu^{1,†}

¹Department of Electrical and Computer Engineering, University of California, San Diego,

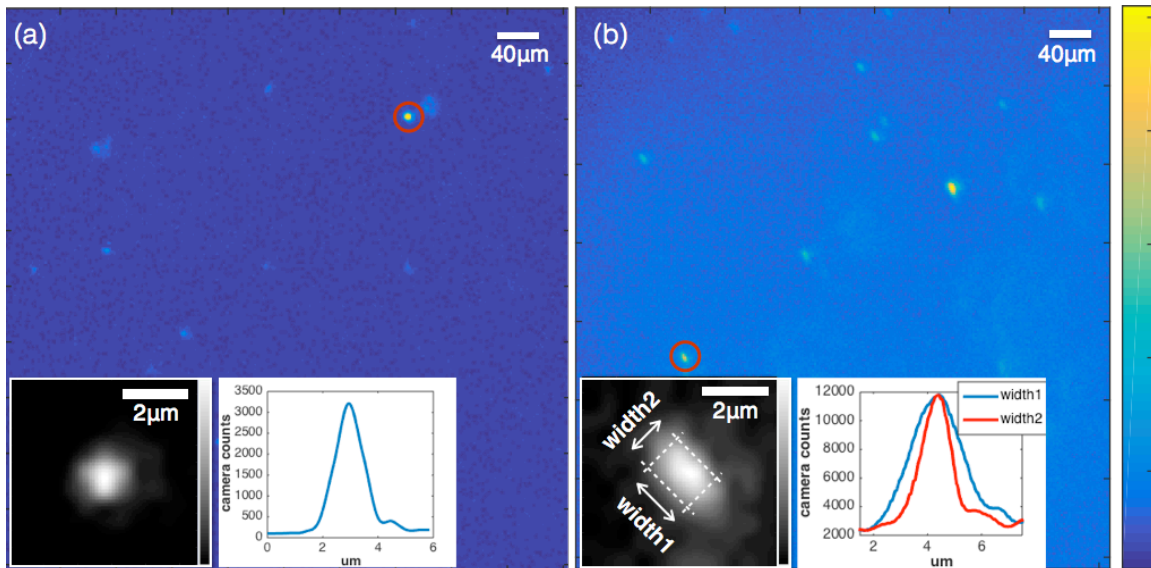
²Department of Physics, University of California, San Diego

³Division of Biological Sciences, University of California, San Diego,

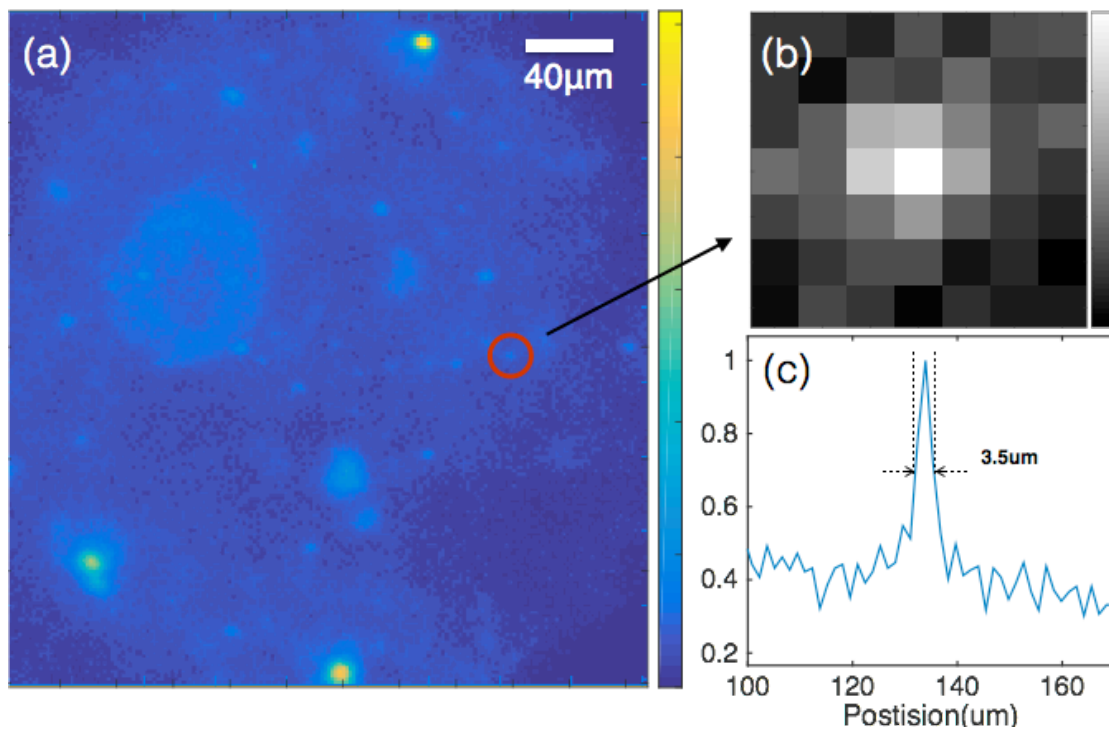
9500 Gilman Drive, La Jolla, California 92093, USA

[†]Corresponding author email address: zhaowei@ucsd.edu

Supplementary Figures



Supplementary Figure 1. Image with NA limited resolution. Imaged sample: 200nm fluorescent beads sparsely distributed in Agar. Pixel size at sample plane: 0.528 μm . Objective lens: Zeiss, 10X/0.3. (a) Camera Image, zoom in image and its cross section without MFG. Both zoom in image and its cross-section are interpolated. Measured FWHM: 1.27 μm . (b) Camera Image, zoom in image and its cross section with MFG. Both zoom in image and its cross-section are interpolated. Measured FWHM: Width 1 is 2.22 μm . Width 2 is 1.32 μm .



Supplementary Figure 2. Image with Camera pixel size limited resolution. (a) Raw image from the same data set as figure 3 and figure 4 in the manuscripts. Pixel size at sample plane: 1.44 μm ; Imaged sample: Mixed 10 μm and 500 nm fluorescent beads in PDMS. (b) Magnified image of a single bead. (c) Cross section of a single bead image.