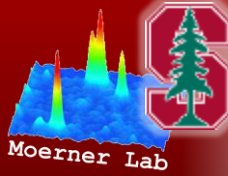
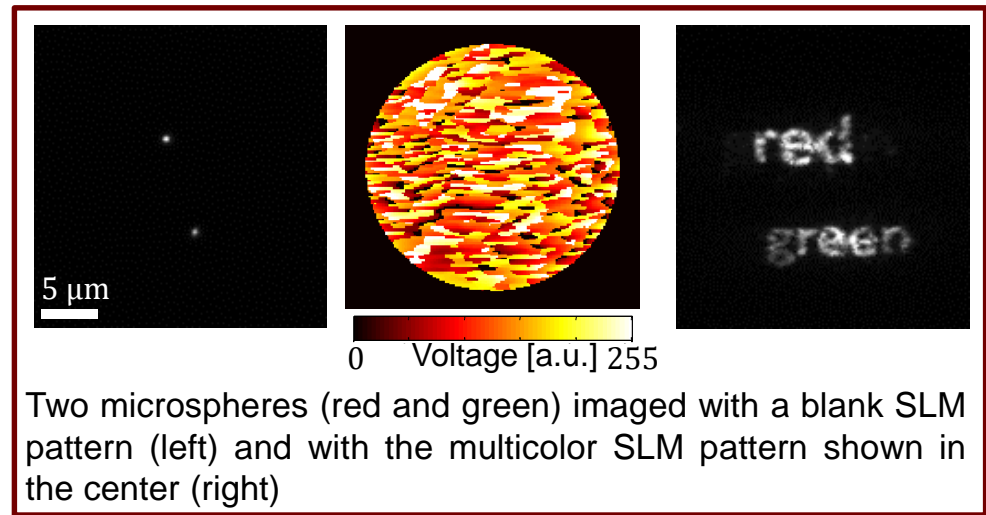


Multicolor localization microscopy by point-spread-function engineering



Localizing fluorescent emitters at different colors is a task of utmost importance for obtaining biological context. Different biomolecules are labeled using differently colored emitters and tracked or used for super-resolution imaging.

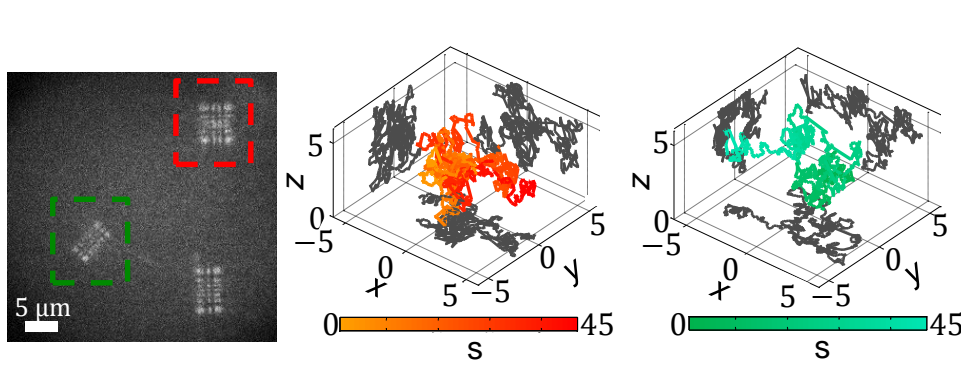
We use Fourier plane processing and exploit the spectral dependence of a spatial light modulator (e.g. liquid-crystal) to engineer patterns producing **different point-spread functions (PSFs) for different colors**



Two microspheres (red and green) imaged with a blank SLM pattern (left) and with the multicolor SLM pattern shown in the center (right)

Example applications

Multicolor, single-channel 3D tracking with a Tetrapod PSF



Multicolor super-resolution imaging

