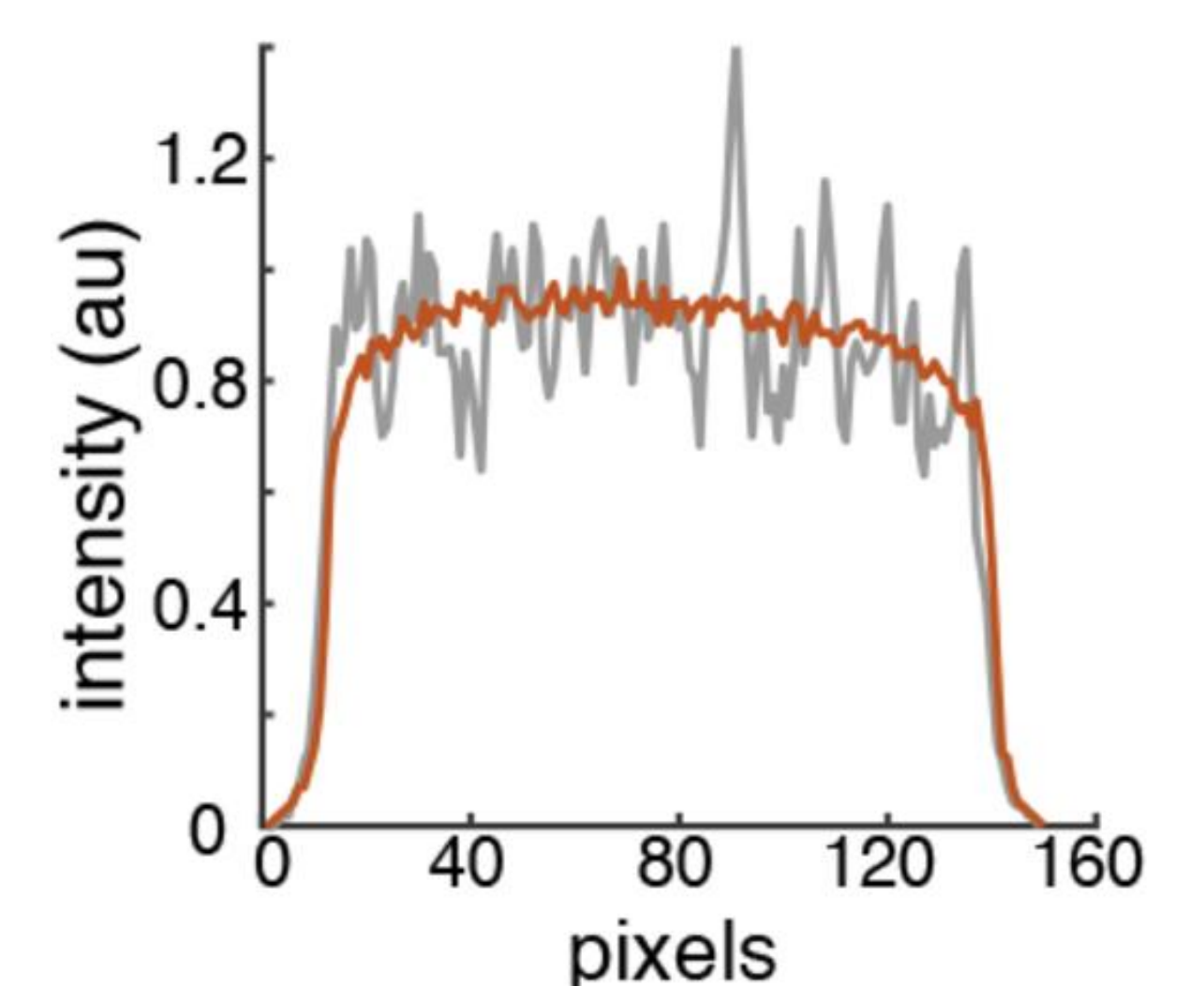
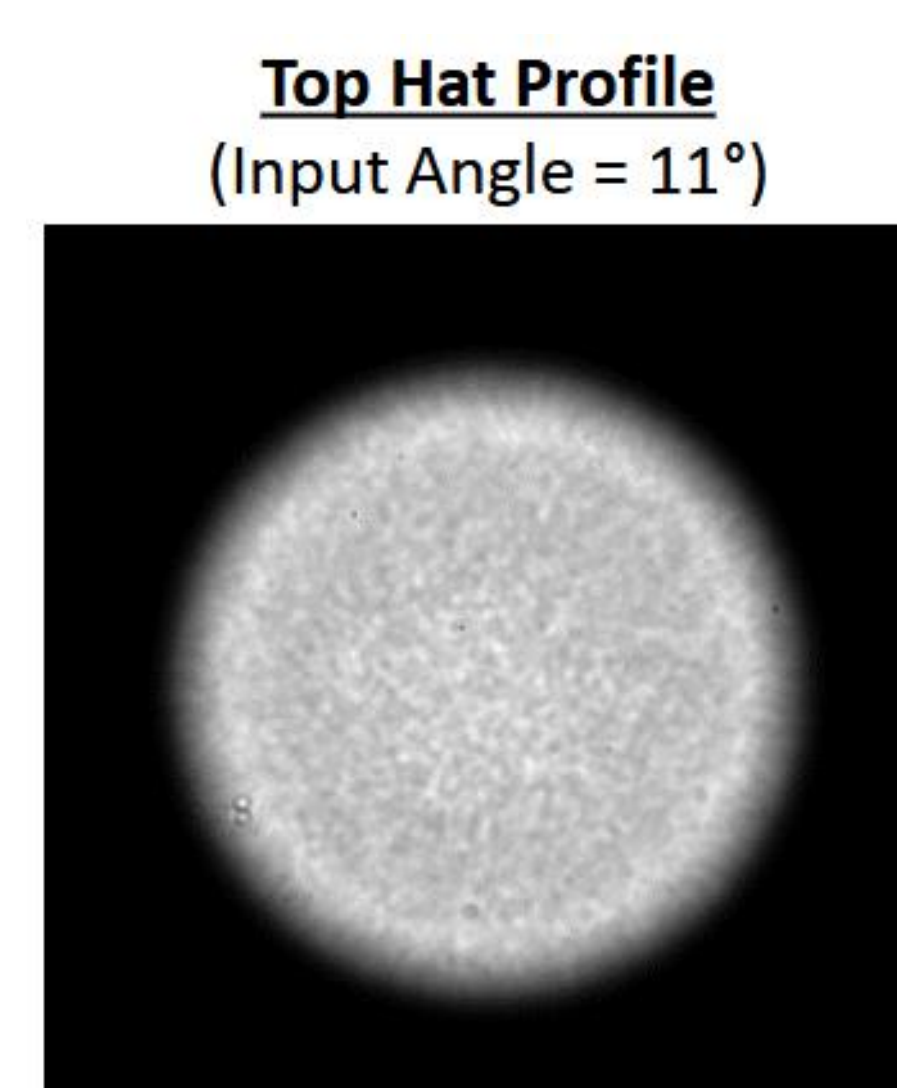
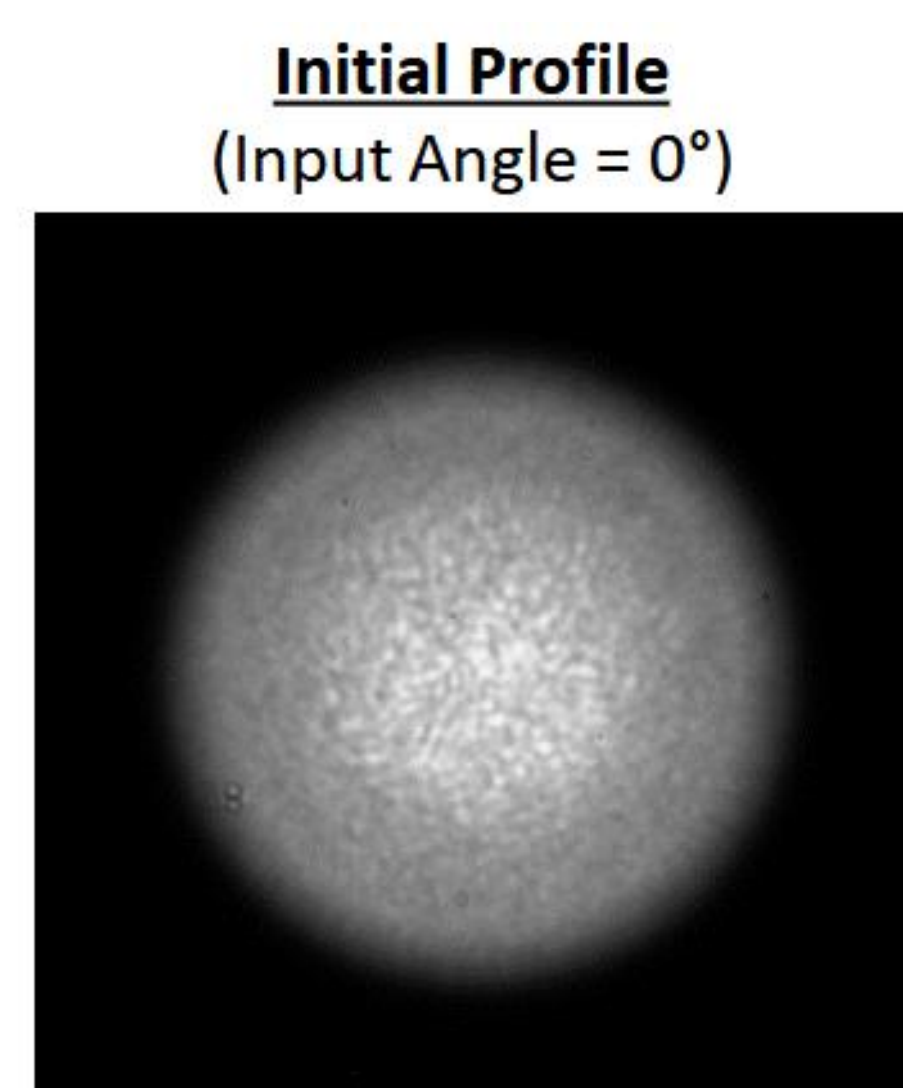
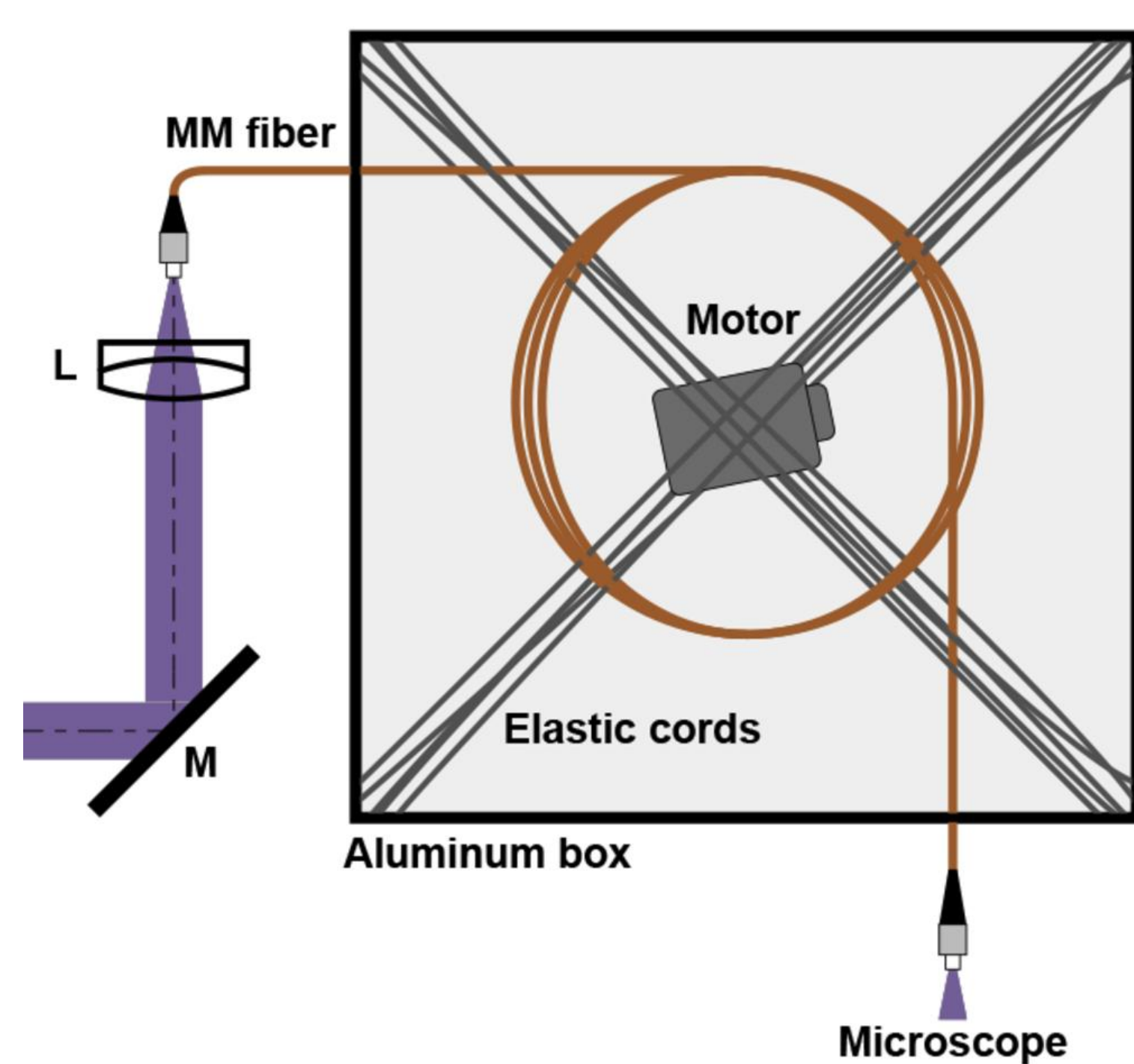


Construction of a laser engine for wide-field excitation in optical microscopes

The project

- The goal is to use pulsed-laser sources for wide-field excitation of semiconductor samples in an optical microscope
- Such laser sources create a Gaussian beam profile with a pronounced speckle pattern → this creates inhomogeneous excitation conditions



"Cost-efficient open source laser engine for microscopy," Biomed. Opt. Express 11, 609-623 (2020)
https://www.thorlabs.com/images/TabImages/Multimode_Fiber_Beam_Lab_Fact.pdf

- You build a laser engine that creates a top-hat intensity profile and smooths the speckle pattern to create an even and flat intensity profile
- You will characterise its output, and use it to study relevant materials

Your profile

- Interest in optics, lasers, imaging, and spectroscopy
- Curiosity for how photoluminescence can be used to study semiconductors
- Motivation, diligence, and excitement to work with diverse team

The group

- We use optical spectro-microscopy to study solution-processed semiconductors (halide perovskites, colloidal nanocrystals, organics)
- Our work is motivated by applications in optoelectronics, chiefly solar cells and light-emitting diodes
- International team with expertise in physics, materials science, and chemistry