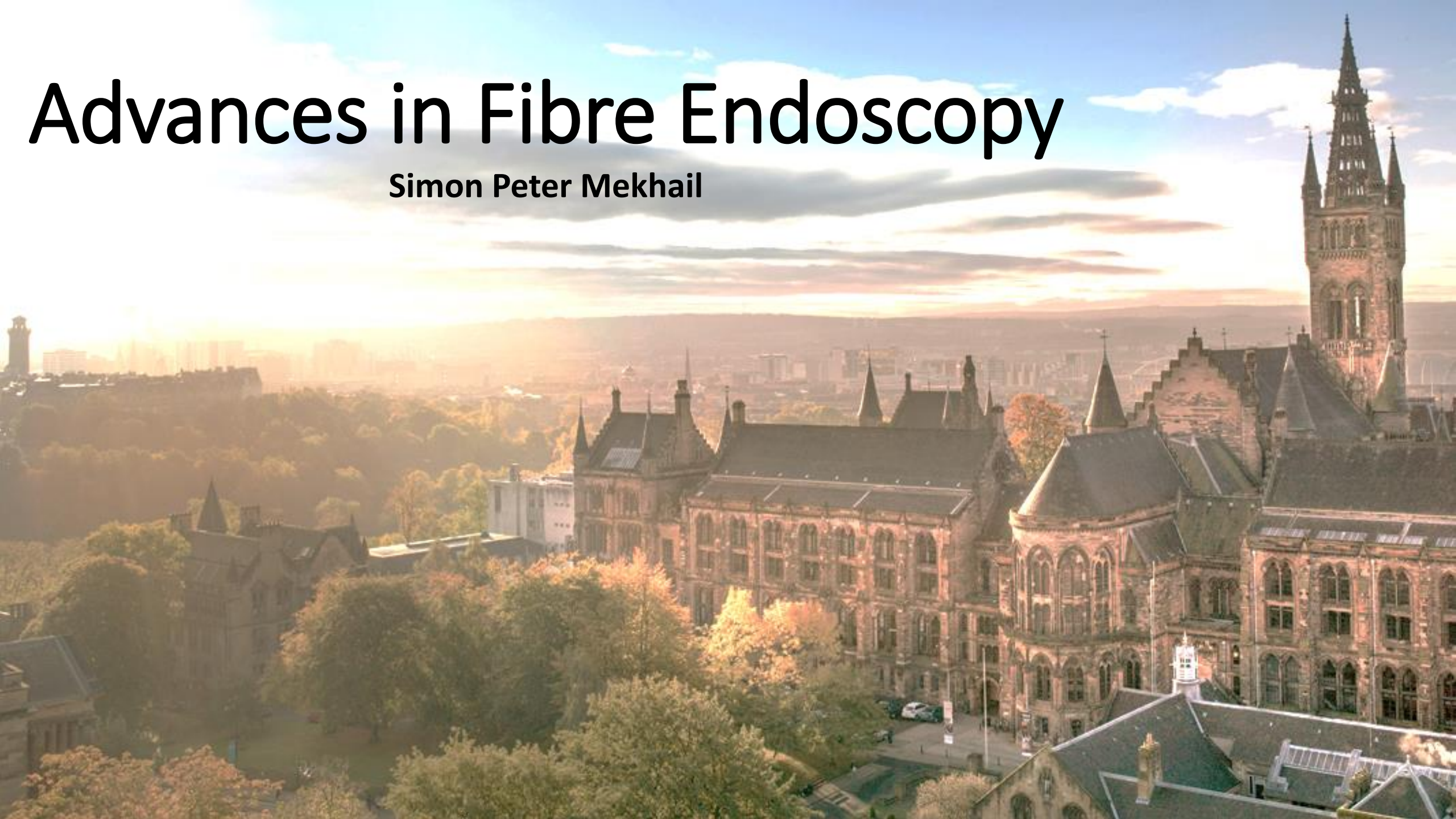


Advances in Fibre Endoscopy

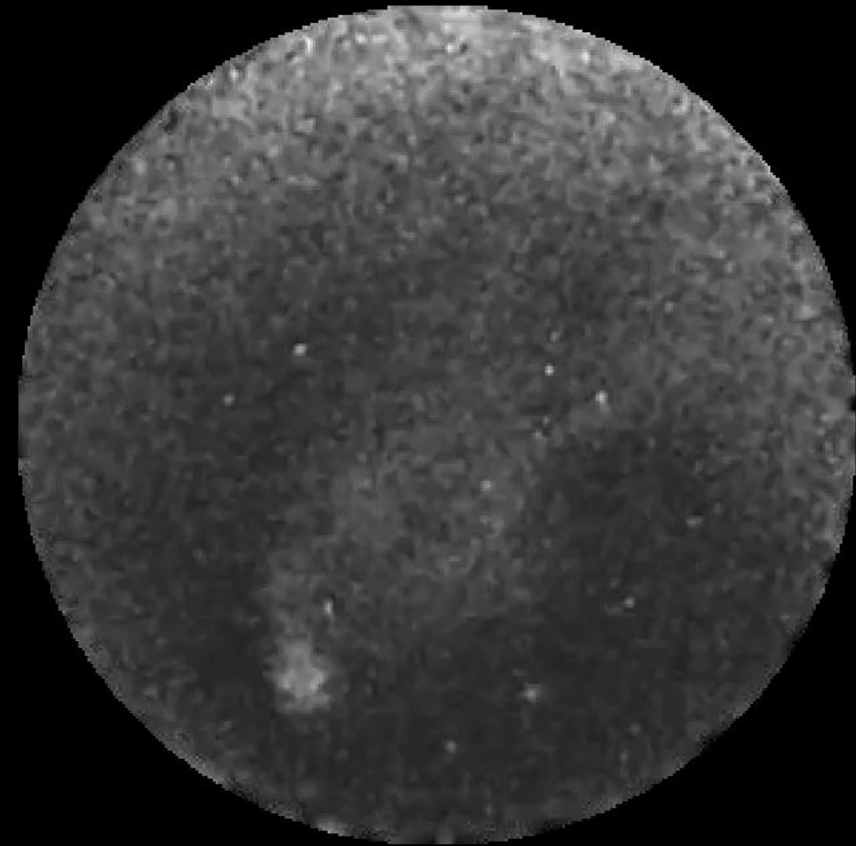
Simon Peter Mekhail



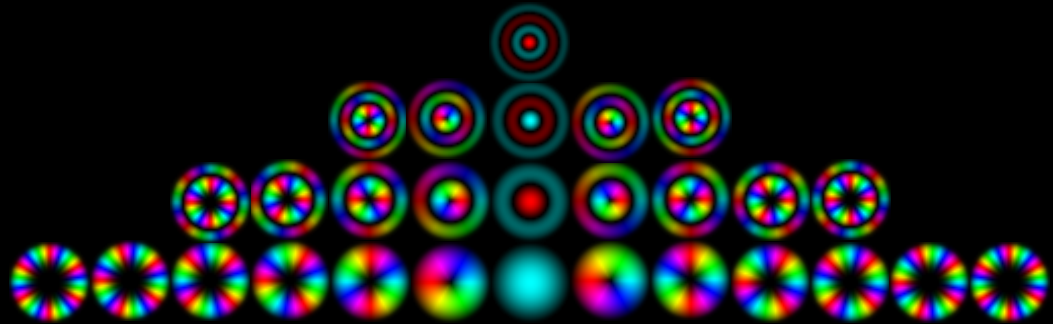
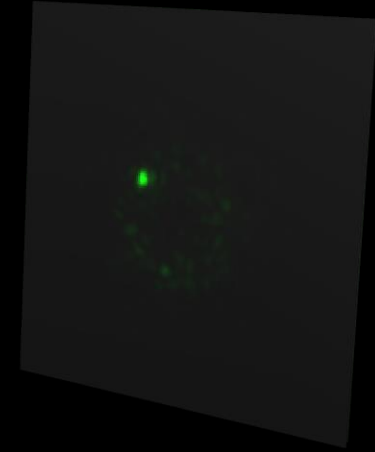
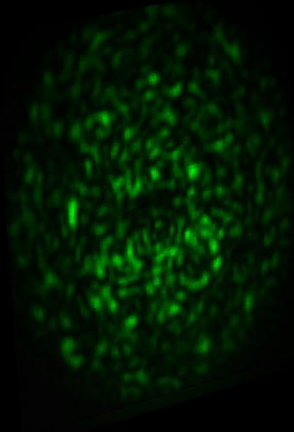
Motivation



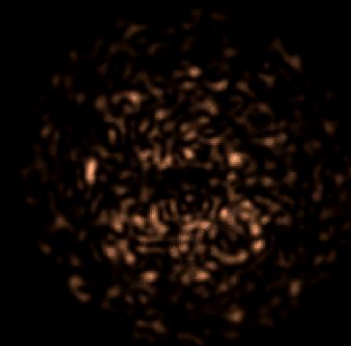
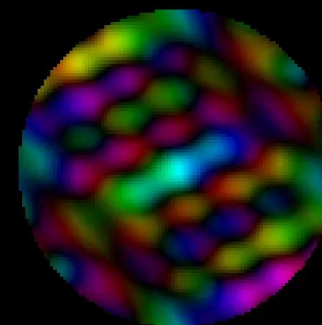
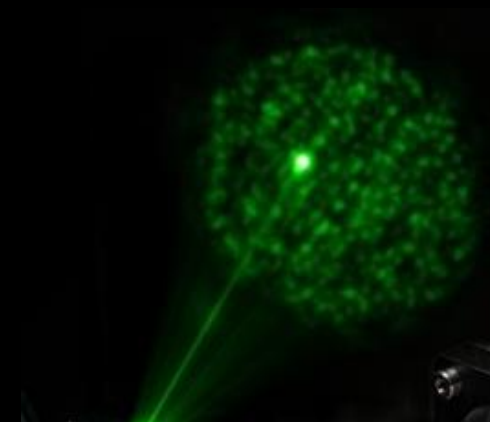
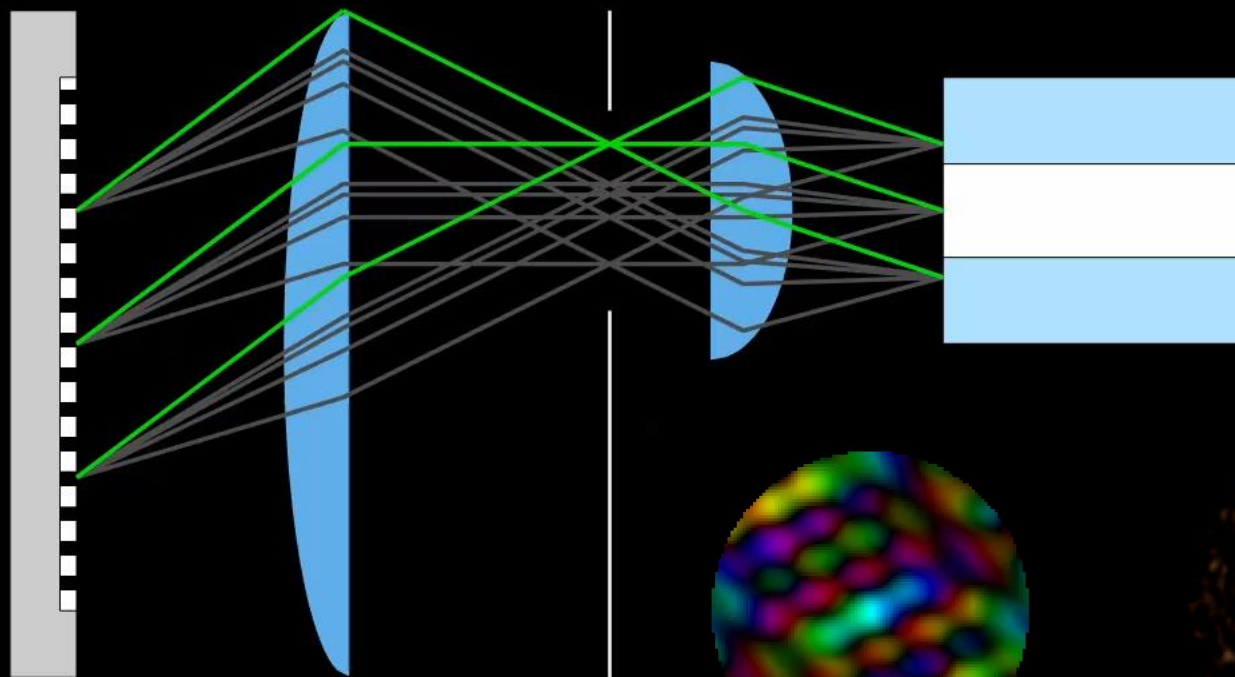
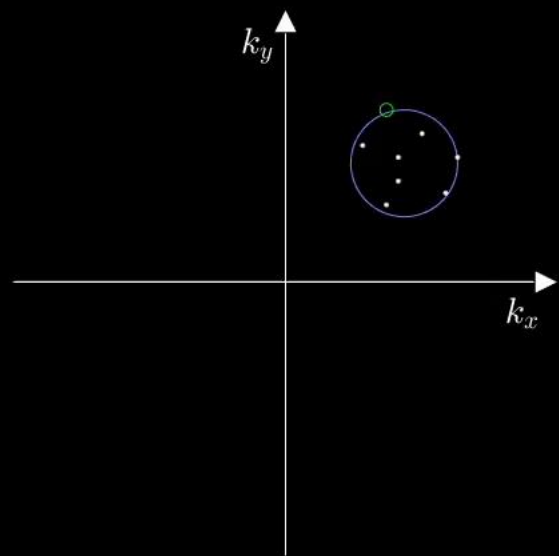
Motivation



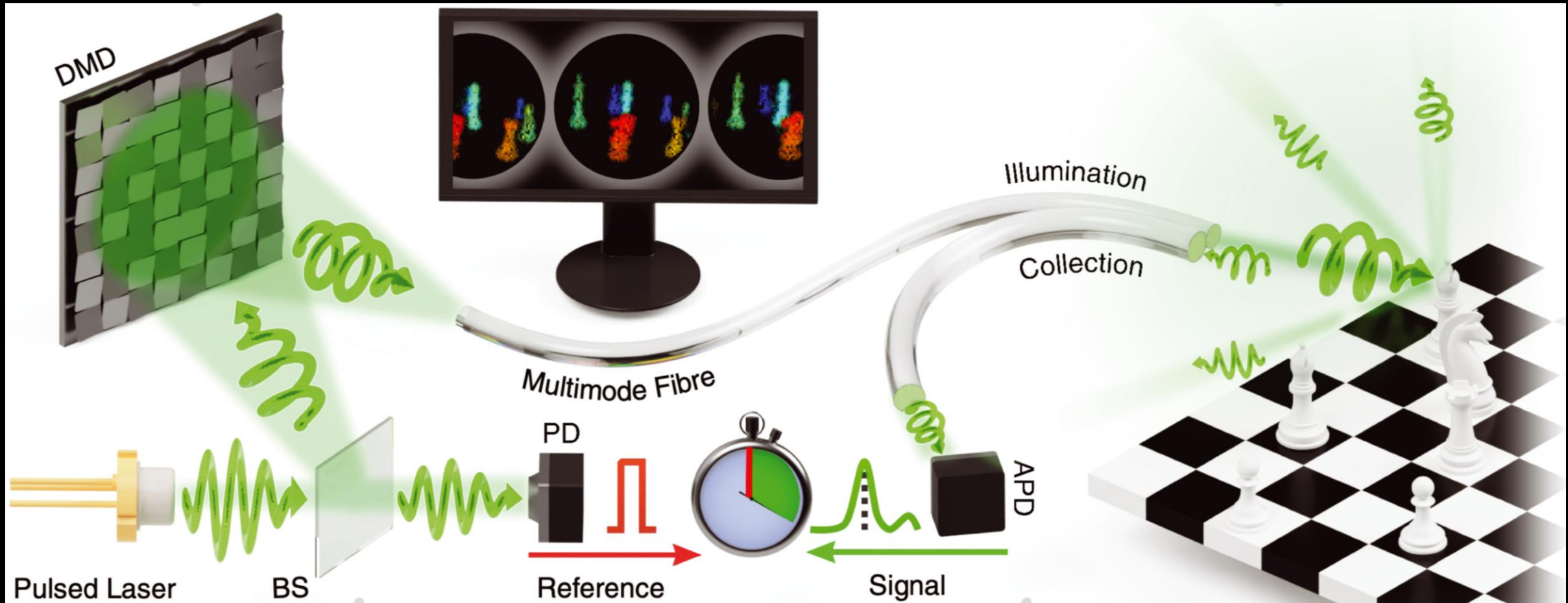
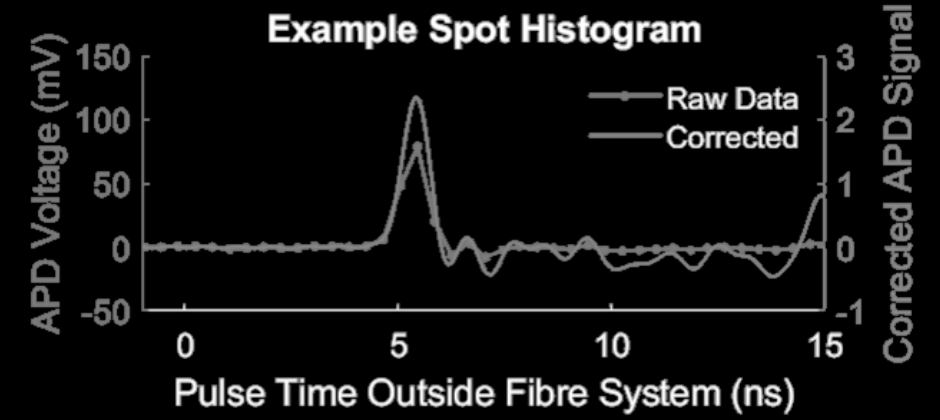
Multimode Fibre



Measuring the TM



The 3D Part

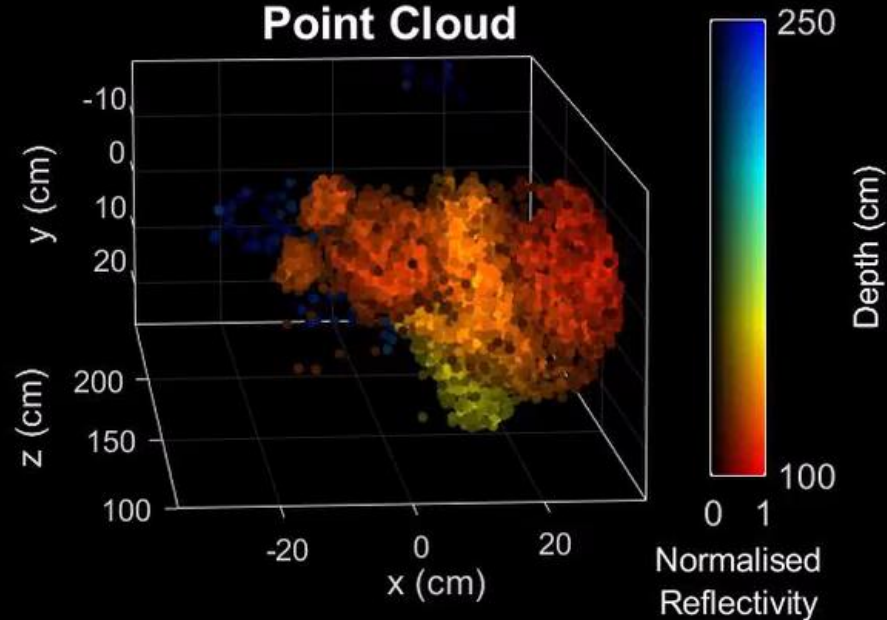


3D Video

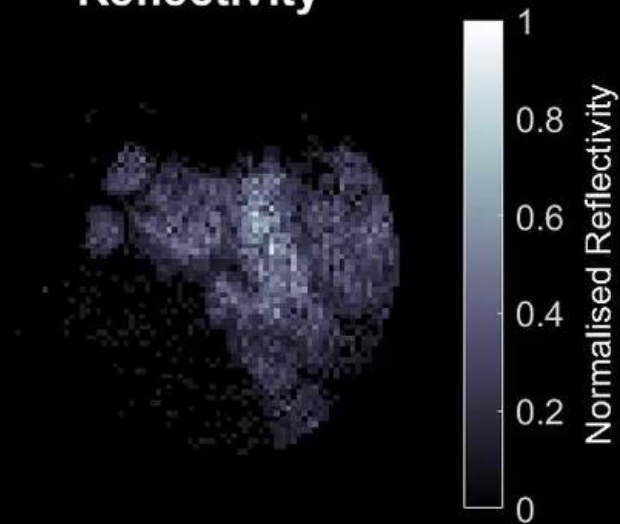
Ground Truth



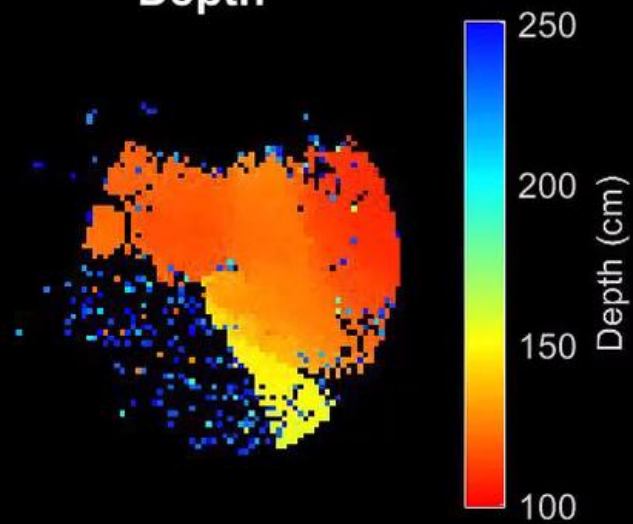
Point Cloud



Reflectivity

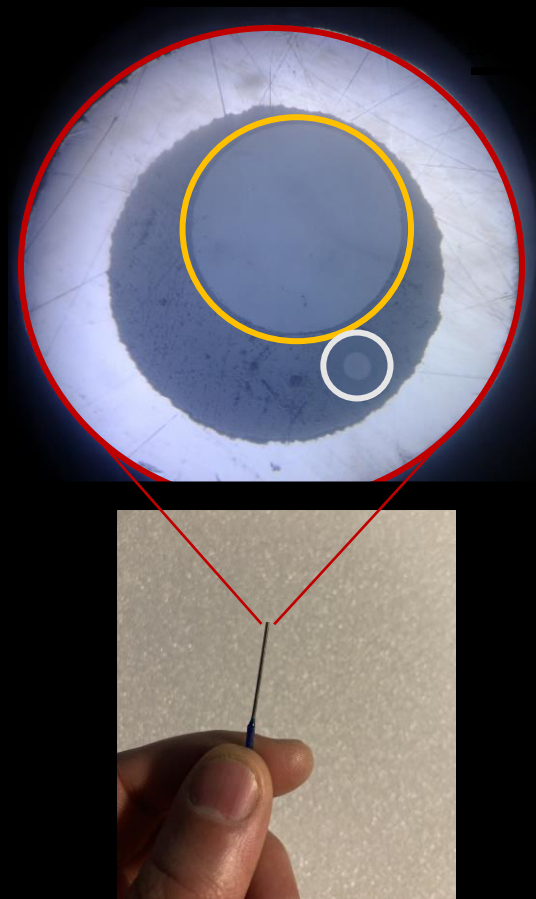
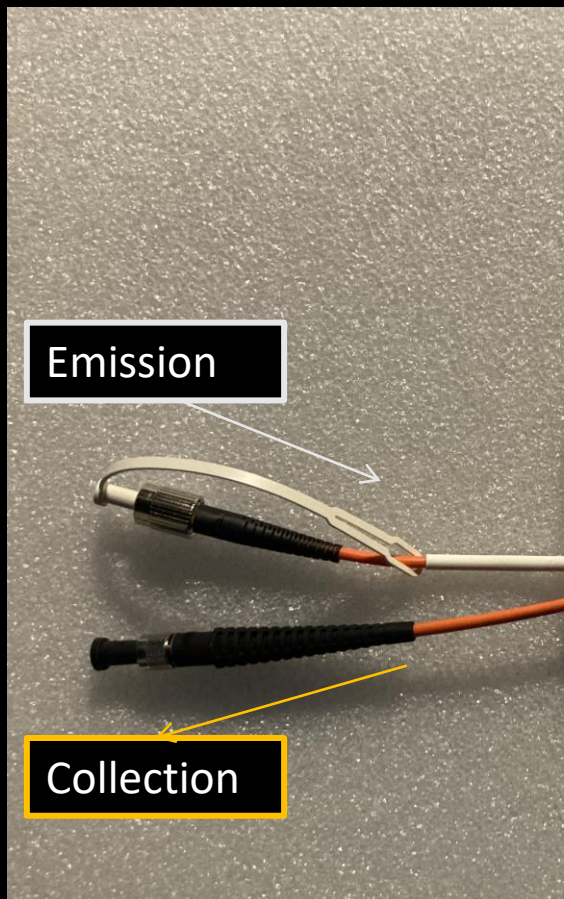


Depth

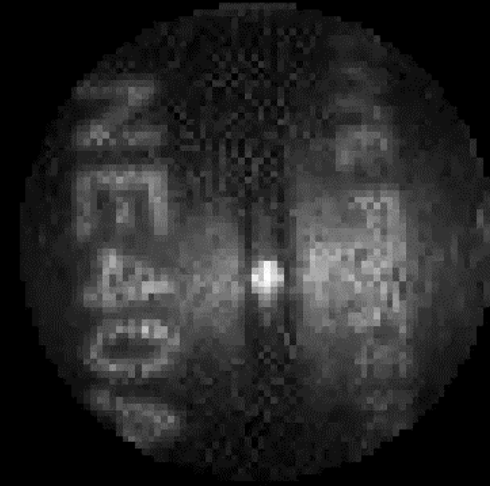
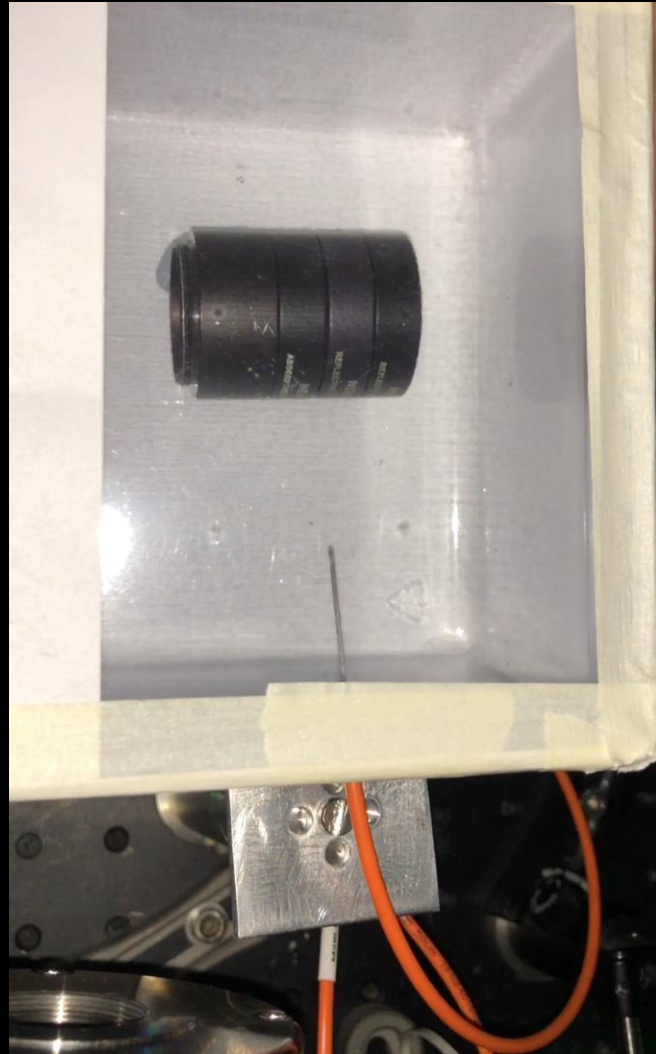


0.2 s

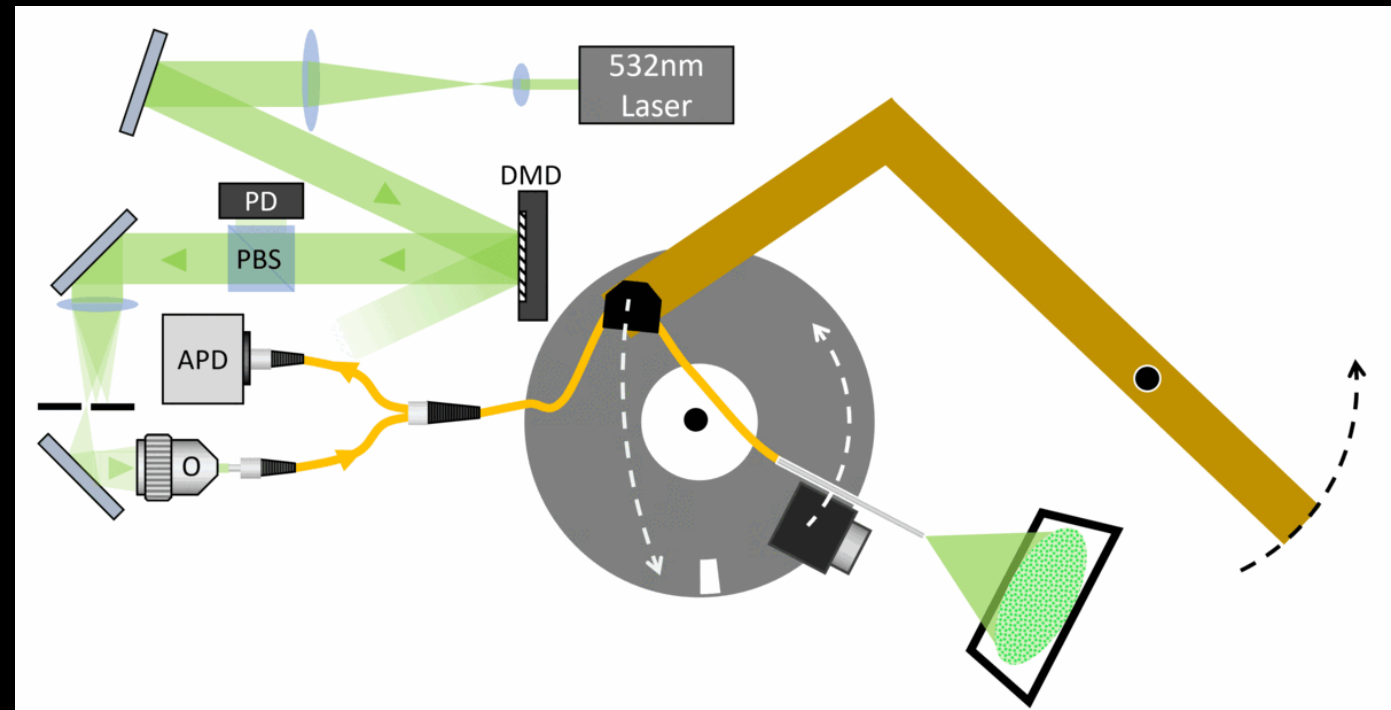
Needle Endoscopy



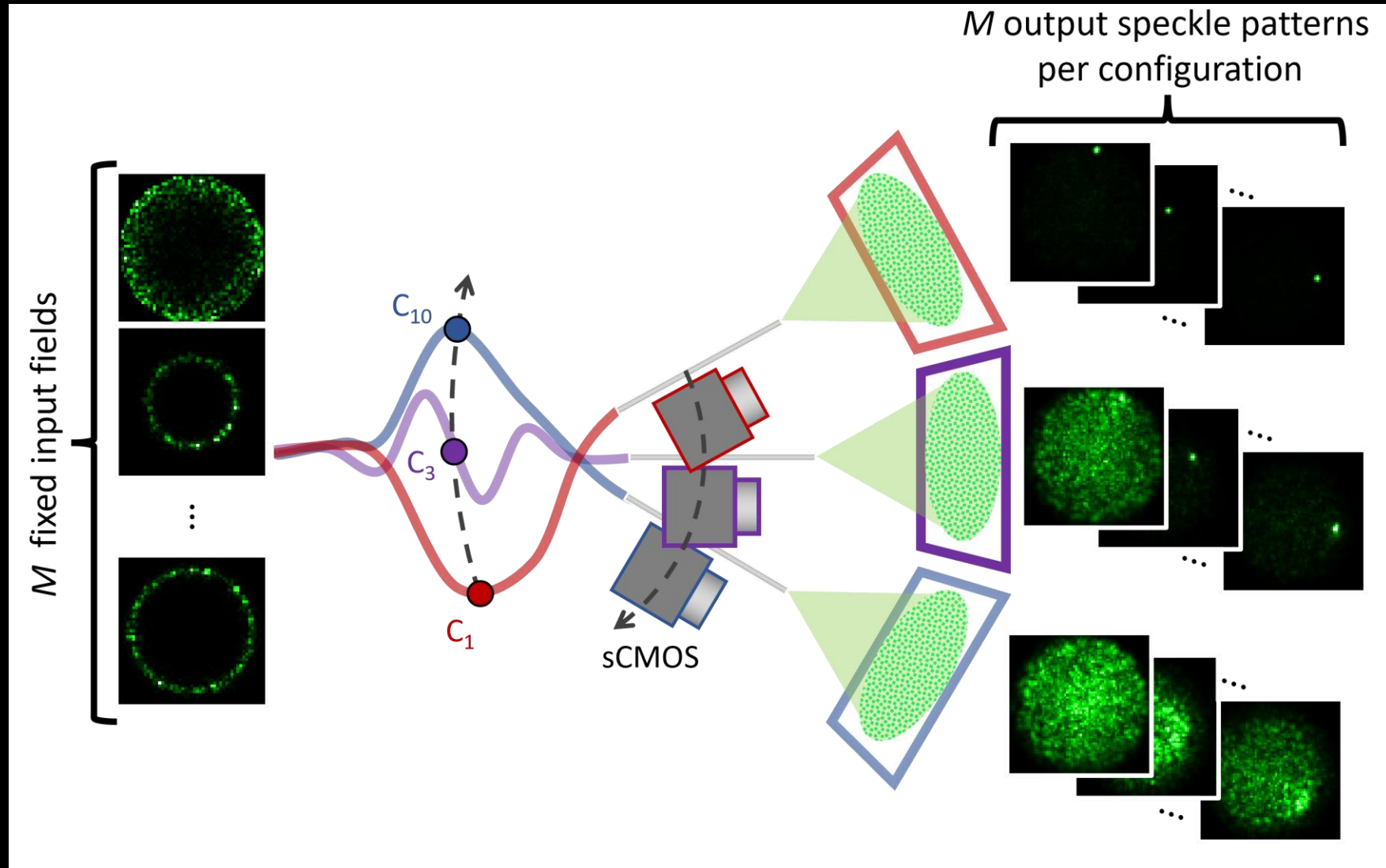
Needle Endoscopy



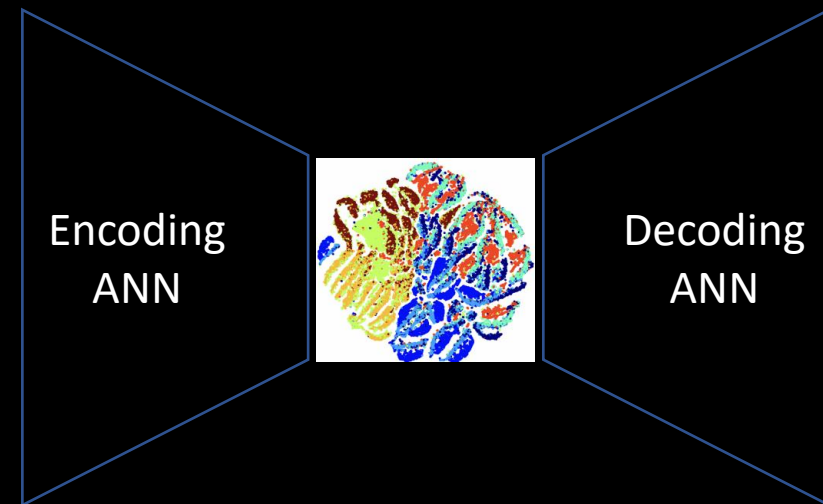
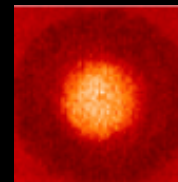
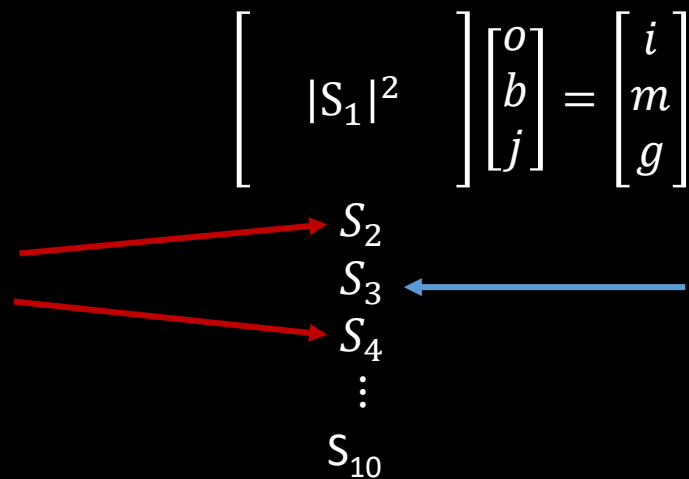
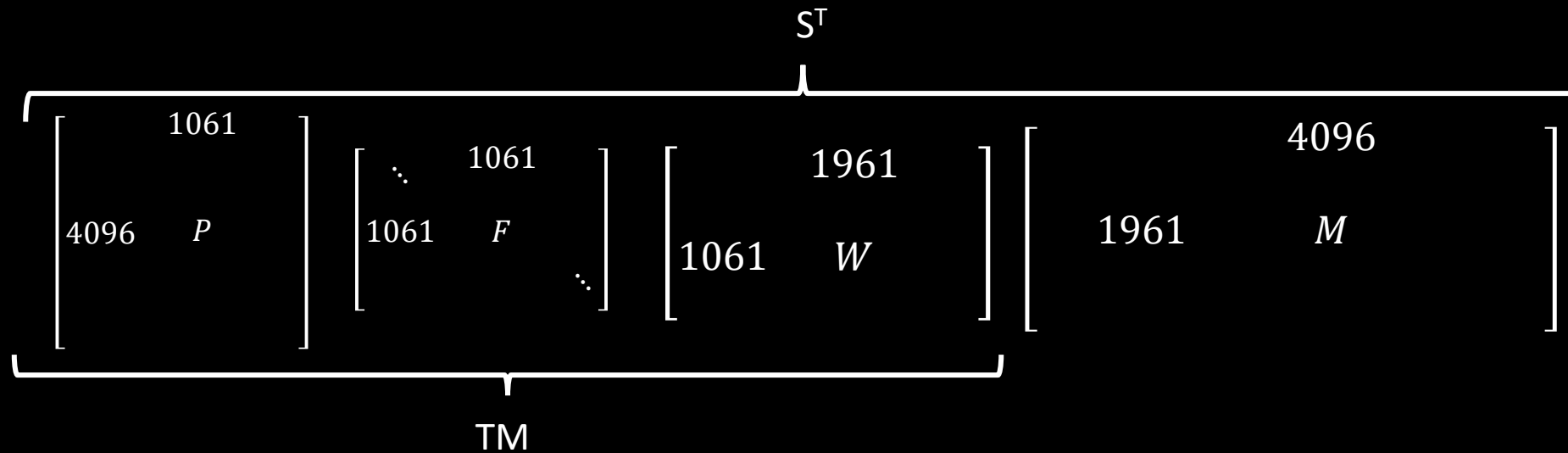
Fibre Bending Problem



Fibre Bending Problem



Decoding Bending with an Autoencoder

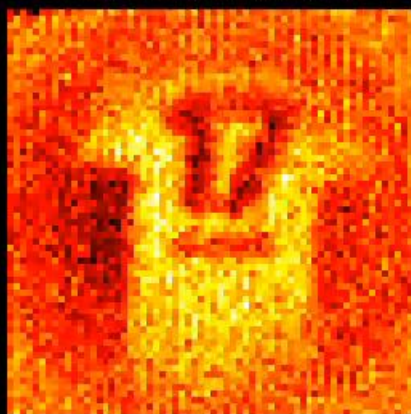


Fibre Bending Problem

Reconstructed Video

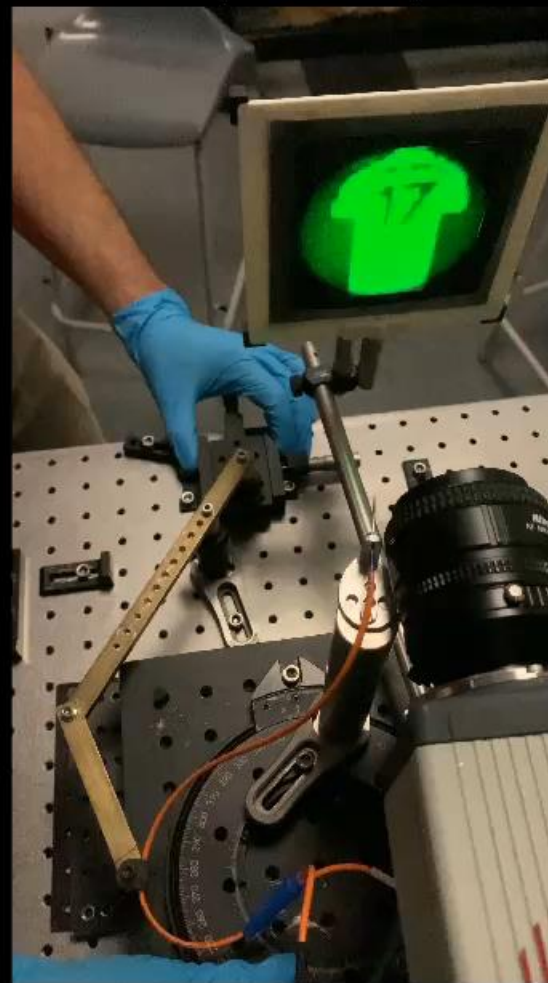


Recorded Video

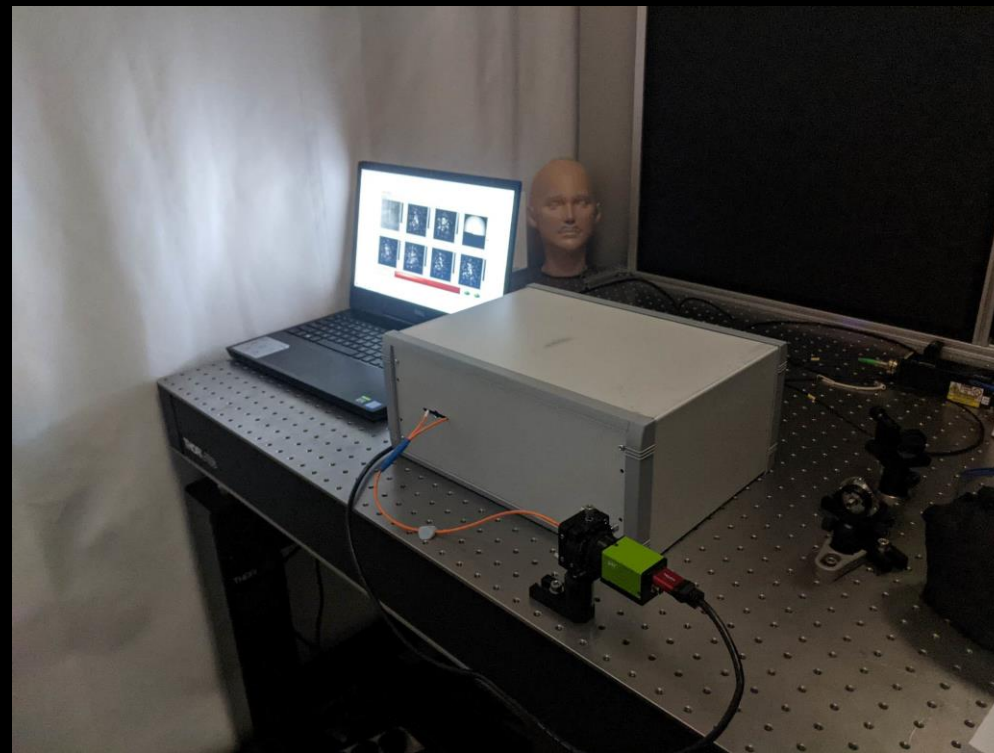
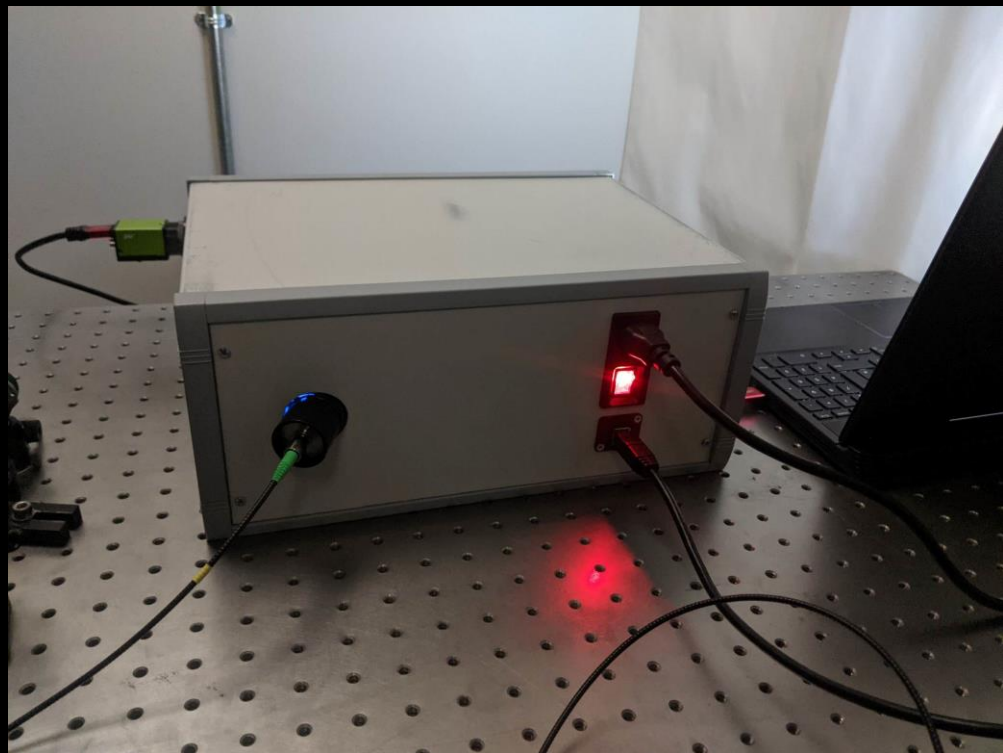


0.00 s

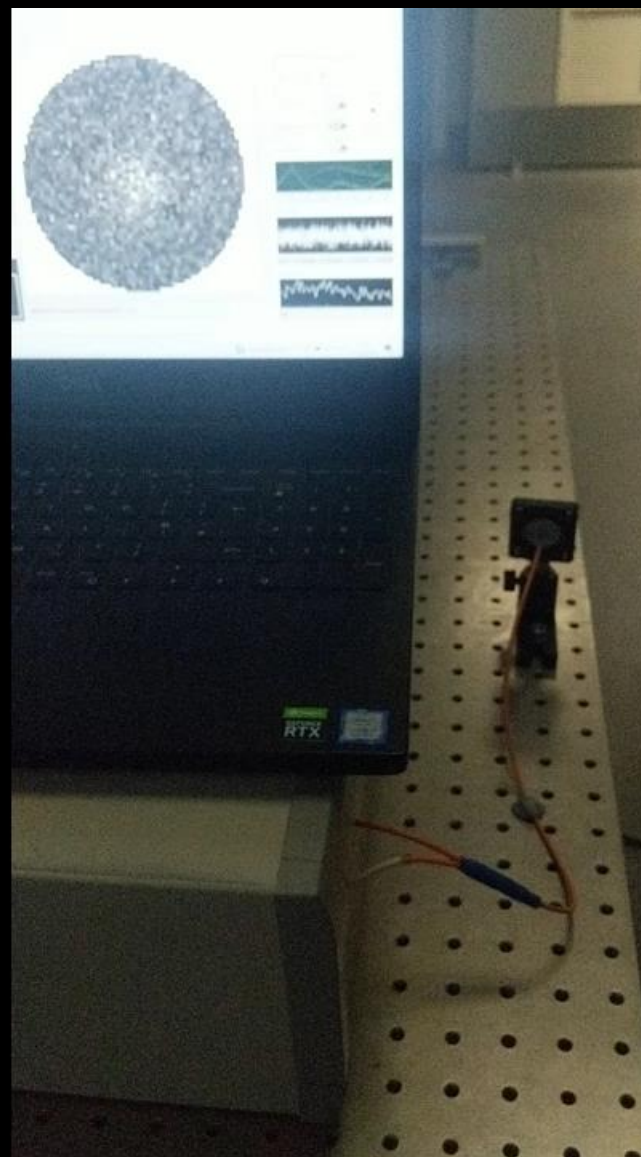
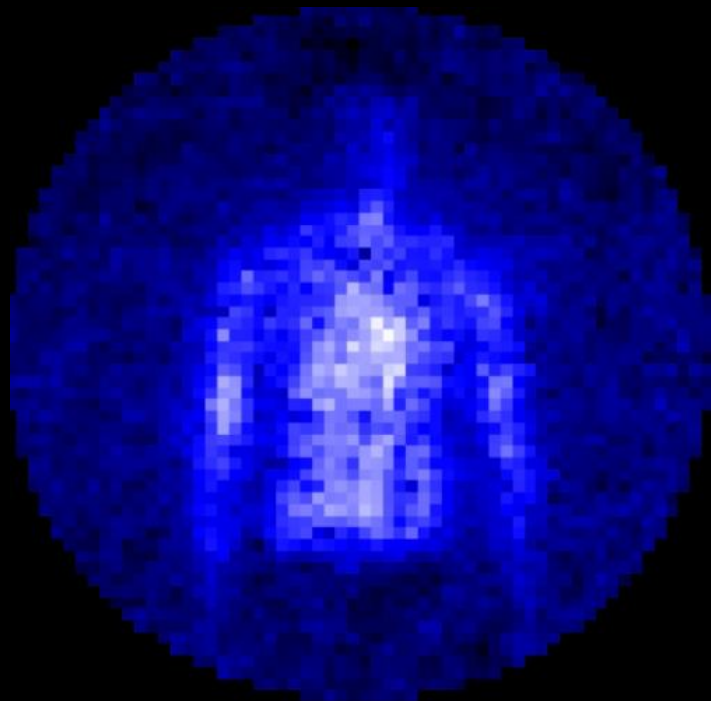
Video Acquisition Sequence



Portable Demonstrator



Portable Demonstrator



Thanks

