Budowa Silesia Photonics

Raster Fiber Optic Translation

Overview

High-resolution Imaging Through a Multimode Fiber: From Raster-scanning to Compressive Sensing. Optical multimode fibers (MMFs), known for their compactness, flexibility, and high mode density within a small footprint, are ideal tools for imaging across various applications from neuroscience to semiconductor metrology. The most popular approach of MMF-based microscopy is raster-scan imaging, where the sample is illuminated by foci optimized on the fiber output facet by wavefront shaping (WFS). However, the commonly used silica fibers have a relatively low numerical aperture (NA) limiting the spatial resolution of a probe. On top of that, light propagation within the solid core. A nonresonant, fiber-optic raster scanning endomicroscope was developed using a quarter-tubular piezoelectric (PZT) actuator. Finite element method simulation of.

Article Content

Fiber-optic raster scanning two-photon endomicroscope using a ...

In this paper, a fiber-optic raster scanning endomicroscope was developed using a tubular PZT actuator. By using a nonresonant fiber scanning type, its scanning speed and scanning ...

Wavefront shaping and imaging through a multimode hollow-core fiber

Here we propose to use a hollow-core fiber to solve these problems. We experimentally demonstrate spatial wavefront shaping at the multimode hollow-core fiber output with tunable high ...

(PDF) Imaging through a square multimode fiber by scanning focused ...

Here we demonstrate that this memory effect is also observed in real space and can be put to use for imaging purposes. First, a focus is created at the output of a square-core multimode ...

Repeated imaging through a multimode optical fiber using adaptive ...

Here we present a two-step method for repeated imaging using MMF. First, we designed a custom three-dimensional (3D) printed headplate, allowing precise reinsertion of the MMF implant into the ...

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In this paper, a fiber-optic raster scanning endomicroscope was developed using a tubular PZTactuator. By using a nonreso-nant fiber scanning type, its scanning speed and scanning area can be easily ...

Single-mode Fiber Coupling Based on Defocus and Raster Scanning

To solve this issue, we propose a defocus method to increase the tolerance of deviation between the fiber core and coupling spot center. Then, a spot search method based on raster scanning is ...

Robust real-time imaging through flexible multimode fibers

In this paper, we propose a real-time imaging system using flexible MMFs, but which is robust to bending. Our approach does not require access or feedback signal from the distal end of ...

Focus quality in raster-scan imaging via a multimode fiber

The most popular approach of MMF-based microscopy is raster-scan imaging, where the sample is illuminated by foci optimized on the fiber output facet by wavefront shaping (WFS).

(PDF) Imaging through a square multimode fiber by ...

Here we demonstrate that this memory effect is also observed in real space and can be put to use for imaging purposes. First, a focus is created at the ...

Lissajous Scanning Two-photon Endomicroscope for

Here we report two-photon laser scanning endomicroscope for in vivo cellular and tissue imaging using a Lissajous fiber scanner.

High-resolution Imaging Through a Multimode Fiber: From Raster ...

In this thesis, we investigated two computational imaging methods, wavefront shaping (WFS) based raster-scan (RS) imaging and compressive imaging (CI).

Contact Us

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