

Laboratory of Precision Fiber Optic Devices (PFOD)

Research Areas

Sensors and spectroscopy

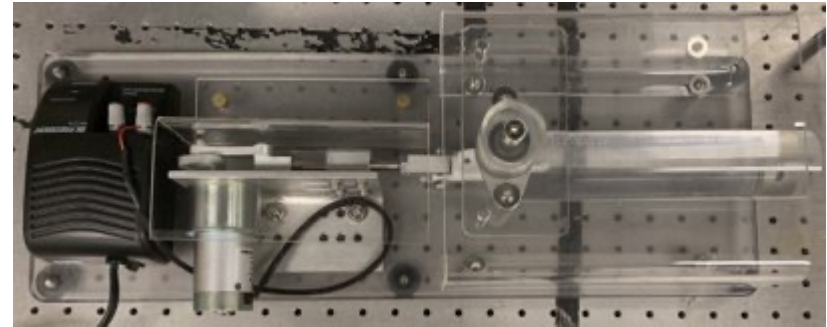
- Ultrafast single-shot spectroscopy in NIR and mid-IR
- Nanometer motion detection and pattern recognition
- Photoacoustic gas and chemical sensors
- Biosensors and biomedical imaging
- Ultrafast time-stretch LIDAR

Spatial Division Multiplexing

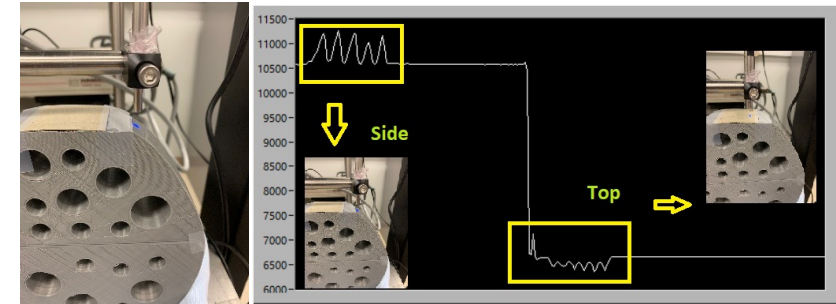
- Multimode fiber nonlinear phenomena
- Nonlinear fiber optics and entangled photon sources
- Multi-mode and multi-core fiber devices

Microwave Photonics

- Time-stretch fiber optic sensor of microwave signals



Motion phantom for biomedical imaging applications



Head phantom motion detection with fiber optic sensors

Contact Information

Mina Esmaelpour

Assistant Professor

Electrical and Computer Engineering

Email: me96d@mst.edu

Phone: 573-341-4407

<https://sites.mst.edu/minae/>



Collaborative Interests

Mid-IR fiber optic devices, quantum entangled photon sources in O, C, and L bands, biomedical fiber optics, FBG and distributed fiber sensors, Photoacoustic imaging, particle trapping and optical tweezing

Recent Funding

- NSF
- Kummer IGNITION grant
- NIOSH