Ultrahigh-resolution tethered OCT endoscopic capsule at 800 nm
(Conference Presentation)
(Withdrawal Notice)

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ABSTRACT

We present an ultrahigh-resolution, distal-scanning OCT capsule operating at 800 nm targeted towards gastrointestinal tract imaging. Among many others, one significant challenge in the 800-nm OCT capsule technology is the severe chromatic aberration in the imaging optics of the capsule. By combining commercial miniature lenses and customized diffractive lens, the achromatic focal shift was essentially eliminated (i.e. down to ~1 µm) over a 3dB spectral bandwidth of ~150 nm centered around 825 nm. We have achieved an axial resolution ~2.7 µm. Initial proof-of-concept experiments with ex vivo pig esophagus demonstrated the excellent imaging performance of this 800-nm OCT capsule.

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