

Optical Coherence Tomography (OCT) is a relatively new optical imaging technology that allows for high resolution, non-invasive, in-vivo, cross sectional imaging of the biological tissue. Currently, the most important application of OCT is in the field of ophthalmology where the structure and function of the anterior and posterior segments of the eye could be visualized with outstanding resolution ($< 10 \mu\text{m}$). These unique capabilities have brought about revolutionary advancements in better understanding of the mechanisms and dynamic changes in healthy and diseased eyes.

In this talk, I will introduce OCT principles of operation and will present various applications of OCT in the field of medical imaging. I will then focus on the application of ultrahigh resolution OCT system in imaging the structure and function of human and animal retina.