

Mid-IR Imaging: Giving Real-Time Biochemical Feedback to the Pathologist

Speaker:

Michael Walsh, Ph.D.

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Abstract:

Mid-infrared (IR) imaging has shown exciting promise in being a potentially powerful adjunct for disease diagnosis due to its ability for stain-free derivation of rich biochemical images. The field of Pathology is based on acquiring tissue biopsies and making diagnoses based on structural and morphological information to make informed disease diagnoses and predict outcome. Unfortunately, the field of Pathology is limited due to its subjective nature and is limited to information that can be derived from stains. IR imaging has shown promise in adding novel biochemical information in disease diagnosis but has had limited clinical impact due to being very slow, non-clinically compatible and having very large data sizes. New advancements in Quantum Cascade Laser (QCL) based IR imaging has the promise to revolutionize the applications of IR imaging in Pathology due to its ability for real-time imaging and discrete frequency collection. This talk will present some of the recent applications of QCL imaging in pathology, including, and improving the tracking of patients post organ transplant to monitor for complications.