



Thesis Projects (MIE498 H/Y) 2018–2019

Title: Small Animal Imaging using Truncated-Correlation Photothermal Coherence Tomography (TC-PCT)

Number of Students: 1 or 2

Nature of Work Proposed: Experimental, image processing

Project is appropriate for: Mechanical

Description:

Using laser illumination and spectral light absorption, followed by optical-to-thermal energy conversion, thermal infrared photon emission (radiation heat transfer), and mid-infrared camera imaging, Truncated-Correlation Photothermal Coherence Tomography (TC-PCT), a high axial resolution technology developed in the Center for Advanced Diffusion-Wave and Photoacoustic Technologies (CADIPT), will be applied to obtain subsurface images of blood distributions in the brain, and possibly to image cancer growth in the thighs, of small animals (rats, mice) injected with cancer cells in collaboration with researchers at the Ontario Cancer Institute, Princess Margaret Hospital. The thesis student(s) will work closely with a CADIPT senior PhD student and a Research Associate in charge of the project.

Notes: For 2-term theses.