

MANDELIS, A.

Mechanical Building, Room 334
mandelis@mie.utoronto.ca

Please note that all topics below are for 2-term theses.

Project 3

Title: Dynamic Imaging of Solar Cell Optoelectronic Quality using a Near-Infrared Camera

Number of Students: (1, 2 or more?) 1 or 2

Nature of Work Proposed: Experimental

Project is appropriate for: Mechanical

Description:

We have developed an optoelectronic non-destructive semiconductor device imaging technique (lock-in carrierography, LIC) which monitors the optical-to-electrical energy conversion quality of industrial silicon-based photovoltaic solar cells and aims to correlate the images with the electrical output and overall performance efficiency of the solar cell. One or two 4th year student(s) will be required to work with the research team in generating and analyzing carrierographic images in order to build the statistics of these optical-electrical correlations and relate images to quantitative measurements of the parameters responsible for the solar cell efficiency.