Contribution ID: **55** Type: **Oral Presentation**

Optical Coherence Tomography as a diagnostic tool (Biophysics)

Thursday, 14 July 2011 08:30 (15 minutes)

<p>Optical Coherence tomography (OCT) is a non-invasive imaging technique that is known to be used to monitor changes and differences in different types of materials. In the field of Biophysics/Biophotonics OCT can be used to non-invasively detect changes occurring in tissue. This study will look at using OCT to detect skin cancer. Similar work has been done by other groups, however the influence of skin tone for such detection has not been evaluated to a great extent. The effect of skin tone on detection of skin cancer will form a core part of the investigations as well as determining the efficacy of the system for early cancer detection. Preliminary work will be done using phantoms that simulate the different skin tones. Melanin is the component found in the skin, largely responsible for the different skin tones and will incorporated into our phantoms as carbon black, black ink or synthetic melanin. The optical properties of such phantoms can be determined on the Integrating Sphere (IS) and OCT systems. A correlation will then be drawn between the optical properties and the OCT signals obtained. Once the preliminary tests are done to optimise the method for image analysis, further studies will be done on patients and compared against conventional histology results. This talk will thus look at some OCT applications, some of the preliminary work done using our OCT system and the steps to determining the effect of skin tone on cancer detection.

Level (Hons, MSc,
   PhD, other)?

PhD

Consider for a student
   award (Yes / No)?

No

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

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