Contribution ID: **326** Type: **Poster Presentation**

Initial results and performance evaluation of a high speed OCT system developed at the CSIR National Laser Centre

Thursday, 28 June 2018 15:00 (2 hours)

Since first being reported in 1991 by Huang, optical coherence tomography (OCT) has rapidly progressed into a powerful and widely used imaging technique, more especially in biomedical application. This is due to its non-invasive and non-contact advantages. Recent developments in laser technology and high speed electronics speeds have enable faster and more precise acquisition making it more competitive when compared to other techniques, like ultrasound. As part of larger DST funded project, the CSIR developed a high speed swept source OCT system, which to our knowledge is the first such system to be developed in South Africa.
The system is able to acquire 3D images 25 x 25 mm wide to a depth of 10 mm, at a resolution of 512 x 512x 2048 pixels, in approximately two seconds. Similar systems available commercially usually offer slower acquisition times or smaller scan areas. In this paper, we present some initial results taken to evaluate the performance and specifications of optical and scanning sub-systems. Data was acquired and the FFT computed for both single and multiple reflectors. We will give an overview of the system and elaborate on the analysis of the acquired data obtained to validate the performance of the laser and evaluate the depth resolution of the system compared against theoretical predications.

Please confirm that you
have carefully read the
abstract submission instructions
under the menu item
”Call for Abstracts”
(Yes / No)

Yes

Consideration for
student awards
Choose one option
from those below.
N/A
Hons
MSc
PhD

N/A

Supervisor details
If not a student, type N/A.
Student abstract submision
requires supervisor permission:
please give their name,
 institution and email address.

N/A

Primary author: Dr ROBERTS, Ted (NLS)

Co-authors: Mr SHARMA, Ameeth (CSIR); Ms SINGH, Ann (CSIR,National Laser Centre)

Presenter: Mr SHARMA, Ameeth (CSIR)

Session Classification: Poster Session 2

Track Classification: Track F - Applied Physics