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## Recent interesting scans (clickable links)

### NanoCT of toothpick

<http://blogs.sun.ac.za/ctscanner/2014/09/26/nanoct-of-a-toothpick/>

### Swimming pool analysis

<http://blogs.sun.ac.za/ctscanner/2014/09/25/swimming-pool-analysis/>

### Nondestructive testing of powerline High Voltage insulators:

<http://blogs.sun.ac.za/ctscanner/2014/09/25/damaged-high-voltage-insulator/>

### Fibre material and coating thickness analysis:

<http://blogs.sun.ac.za/ctscanner/2014/09/25/carbon-fibre-with-paint-coating/>

## Application: Swimming pool fibreglass analysis

Fibreglass swimming pools are manufactured in two ways: chopper gun application and hand lamination, ie. semi automated and manual. There has been lots of debate about which is better, and we offer no opinion, only materials analysis of two isolated samples. These samples were provided by an installer of both types of pools.

In the images to the right and in the additional information on our website you will see that the hand lamination method is physically thicker but contains a high average porosity of 4.75% vs 0.65% for the chopper gun application. More information on our website:

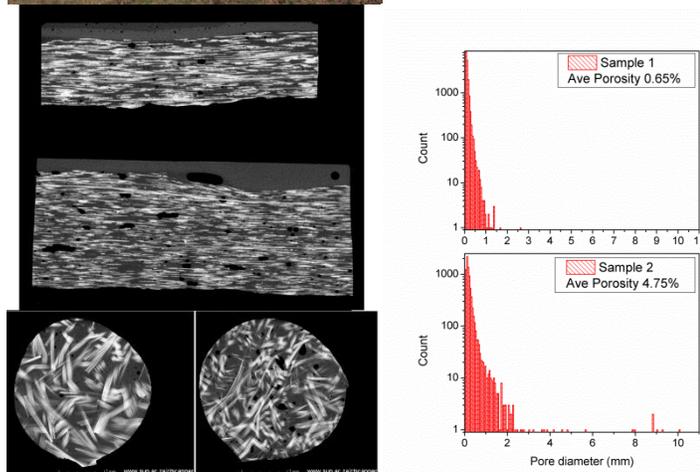
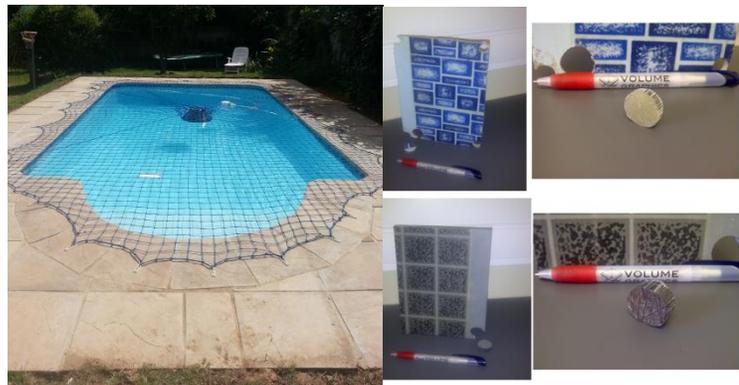
<http://blogs.sun.ac.za/ctscanner/2014/09/25/swimming-pool-analysis/>

## Welcome

This month we cover multiple size scales – from a swimming pool to the tip of a toothpick. We show how swimming pool fibreglass can be analyzed and two types compared and how a nanoCT scan at 500 nm can provide details of the inside of the tip of a toothpick. This puts a nanoCT in perspective.

The aim of this newsletter is to gain new clients and new users of the facility, so please do the following

1. Send the newsletter to your colleagues
2. Book your own scans today



**Figure 1: Swimming pool fibreglass comparison between two fibreglass manufacturing methods: sample 1 = chopper gun application; sample 2 = hand lamination, two individual samples compared only. The newly installed swimming pool in picture is of type 1.**

## Featured capability: nanoCT scan at 500 nm

The new nanoCT scanner can scan small samples at resolutions below 1 micron, and in the range below 20 microns delivers better results in shorter times. Here we show the tip of a toothpick scanned at 500 nm. The inside of the toothpick is imaged showing the cell walls of the wood cells, and an automated wall thickness analysis shows the variations in cell wall thickness in colour. Indicative scan times for this scanner are:

500 nm = 4 hrs

1 micron = 3 hrs

2 microns = 1 hr

Faster scans with decent quality are possible but the above is for best quality and includes volume reconstruction.

### **More information, images, videos:**

<http://blogs.sun.ac.za/ctscanner/2014/09/26/nanoct-of-a-toothpick/>

### **Special offers**

**3D data visualization and video making – R1000 per data set, this includes at least 5 images and 1 or 2 videos.**

**High performance analysis facility – R2500 per month access OR special offer for last 3 months of this year: R3500 total.**

### **Contact Us**

<http://www.sun.ac.za/ctscanner>

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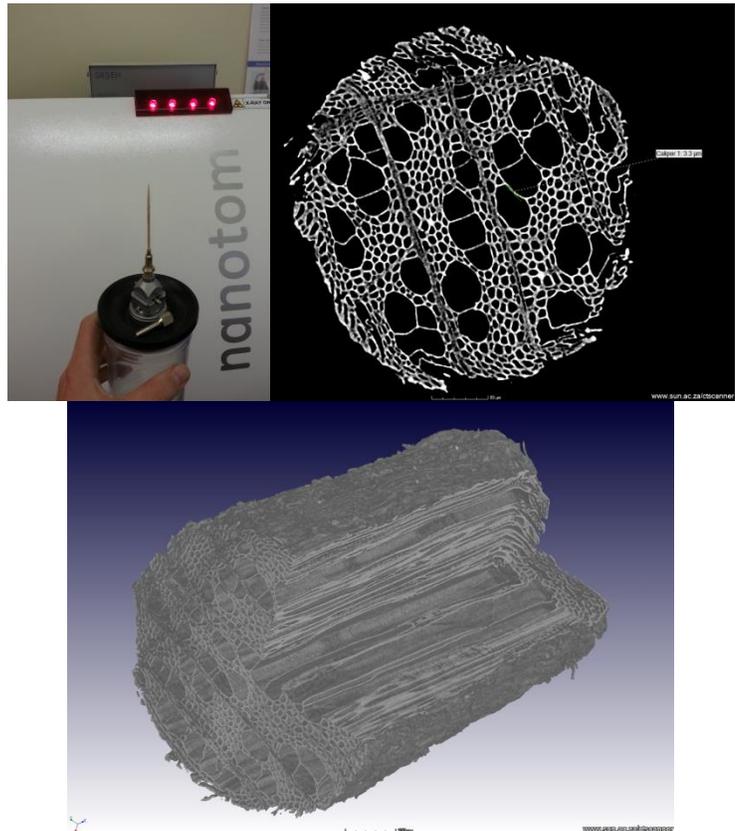
### **Physical address for sample deliveries:**

CT Scanner Facility, Room 1046

PO Sauer building - Dept Forestry and Wood Science

Bosman Street, Stellenbosch

7602



**Figure 2: NanoCT scan of a toothpick tip at 500 nm**

## NanoCT Launch Function

The nanoCT launch event was held on 15<sup>th</sup> September and was attended by a diverse audience of facility users and supporters. A YouTube video was recorded prior to the event, watch it here:

<https://www.youtube.com/watch?v=nONeW7oqfLI&feature=youtu.be>



**Prof Marena Manley (Grantholder, left) and Mrs Stephanie Harris (National Research Foundation) cutting the ribbon on the new instrument.**

## Services & Events

Young Spectroscopist Symposium: 27<sup>th</sup> Oct, hosted by CAF CT Facility. See the invitation and call for abstracts here:

<http://blogs.sun.ac.za/ctscanner/files/2013/07/SASS-YSS-invitation2014i.pdf>

If you don't know how to get started with your research project or materials analysis problem, we'll gladly meet with you either at the facility or via skype or telephone, free of charge.

**Please support our advertiser, General Electric:**

## Acknowledgements

The CT scanner equipment acquisitions were made possible with grants from the National Research Foundation and Stellenbosch University. The Department of Science and Technology Internship program is also acknowledged for its support of this facility. We encourage and welcome any form of sponsorship or support in order to keep delivering the best quality.

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## Introducing CRxVision™ from GE: A High-Resolution CR Scanner for Weld and General Purpose Inspections

Packed with innovative features to increase throughput, extend plate life and provide excellent image quality, the CRxVision is designed specifically for the inspection of welds. The scanner is developed to cover the stringent ISO 17636-2 Class A and B requirements, as well as ASTM, ASME and EN weld standards. Because of its versatility, it can also be used for many other applications across the NDT industry.

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[www.ge-mcs.com/x-ray](http://www.ge-mcs.com/x-ray)

