

## CT NEWS

The Stellenbosch CT scanner facility newsletter "more than just a scan"

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## Follow us online!

Keep in touch online at these places, and make suggestions for new content!

- Google maps & reviews: https://goo.gl/maps/F8X5EzjGek32
- Science as art
  <u>http://blogs.sun.ac.za/duplessis/science-as-art/</u>
- Facebook group: https://www.facebook.com/ctscanfacility/
- Youtube channel for videos: https://www.youtube.com/channel/UCXFx \_JBZVAewNE3JqM1grYA
- Twitter @antonctscanner1 https://twitter.com/antonctscanner1
- Linkedin: https://www.linkedin.com/in/drantondupl essis/

Of course also our regular website: www.sun.ac.za/ctscanner And our group's own research page: http://blogs.sun.ac.za/duplessis/

### Welcome

It's time for another newsletter, this one was a bit late, sorry about that! In this issue we tell you how we can come to you, share a tech note on dimensional analysis of parts, and share a recent biomimicry research publication.

Please book your scans and if you are unsure, come in for a coffee to discuss you work (for free).

If you wonder what it takes to make a CT scan? Have a look here at this simple video: <u>https://youtu.be/Yqui4OPVZu0</u>

For more detailed information about the type of data to expect and how to plan your work, please see this guide: <u>http://blogs.sun.ac.za/ctscanner/files/2013/07/MicroCT-data-analysis-and-reporting.pdf</u>

## We come to you

We are happy to come to you, we can do all of this on your site:

- Make a short presentation
  - Discuss the details of your project and plan it out
- If you are too far away, we can do the above via internet
- We can come to scan your parts using handheld scanners

So here is a sneak preview of the portable scanning we provide



Thumbs-up 3D model acquired with our portable scanner

## Online bookings & quotes

Drop off service is easier and billed per hour. Send us the part and we do it. Otherwise you can book your session online for microCT, nanoCT or analysis PCs. We book in 4 hr slots. If you are a new user, first create a user number on our system here: http://www0.sun.ac.za/safmachform/machf orm/view.php?id=73618

The booking system: <u>http://www.supersaas.com/schedule/CAF\_B</u> <u>ooking\_systems/CT\_Facility</u>

## **Contact Us**

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We are members of IntACT, the International Association for Computed Tomography

http://www.intact-tomo.org/

## Tech note 4 – coordinate measurement

All tech notes can be found online at <u>http://blogs.sun.ac.za/ctscanner/introduction/</u>. This month is coordinate measurement. Coordinate measurement machines (CMMs) are often used to measure dimensions of parts using tactile or optical probes, but this same task can be performed by X-ray CT, with more advanced analyses possible and hidden features, hard to reach locations and any material type easily measured (including shiny surfaces, glass, plastic, rubber etc). Read more here:

http://blogs.sun.ac.za/ctscanner/files/2013/07/CT-tech-note-4.pdf



Accurate dimensional measurements by CT

# Publication highlight – Analyzing nature's protective design

This latest paper analyzed the protective design of a unique natural system – the body armor of a glyptodont animal. Detailed microCT analysis, 3D mechanical simulations, 3D printing and mechanical tests were used. Read more in the full paper which is available for the next month or so for free using this link: https://authors.elsevier.com/a/1Wpwm6EHNeWwFO



Analyzing the protective design of animal body armor plates

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Please cite our facility when reporting data generated here:

#### http://www.sciencedirect.com/science/article/pi i/S0168583X16303433

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Our advertiser is Volume Graphics – their software VGStudioMax is used extensively at our facility. For a link to their free 3D viewer (also now for Mac), click here:

https://www.volumegraphics.com/en/downlo ad-viewer.html

## **Guess-the-X-ray**

To highlight the capabilities of our systems to really look into and through parts, we regularly show some X-ray images. The idea is you can try to guess what it is and why we are analyzing it.



Last month's quiz – this was a bag full of Mopane worms, a unique South African snack food. The single worm CT scan is shown here to the right. Some more is shown here https://www.linkedin.com/pulse/worlds-first-mopane-worm-ctscan-anton-du-plessis/ and more work is planned, watch this space!

This month's X-ray quiz:



If you know what this is, pop us an email and you could win a free 3D rendering of your data or a cup of coffee (or maybe both at the same time). First correct answer wins.

## ALL-SEEING

The Thorough Algorithms of Our Non-Destructive Defect Analysis

#### New: Get excellent results faster with the intuitive parameterization of VGEasyPore

With the add-on module Porosity/Inclusion Analysis for VGSTUDIO MAX 3.1, you will discover pores, cavities, and inclusions that you otherwise couldn't see – and non-destructively at that.

Better understand the quality of your part: Detect pores with just a few clicks, find porosity hot spots, and calculate the locally averaged porosity.

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