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Recent interesting scans (clickable links)

Wits reef gold:

<http://blogs.sun.ac.za/ctscanner/2013/03/18/wits-reef-gold/>

Electronic components inspection using CT imaging:

<http://blogs.sun.ac.za/ctscanner/2013/03/27/micro-ct-scanning-of-electronics/>

3D print from CT scan data: order a bird mummy replica

<http://blogs.sun.ac.za/ctscanner/2013/03/11/limited-edition-3d-replica-of-the-inside-of-a-bird-mummy-place-your-order-now/>

STL surface data from a wax sculpture

<http://blogs.sun.ac.za/ctscanner/2013/02/22/stl-file-from-a-sculpture/>

Scan of a wasp – Entomologists take note

<http://blogs.sun.ac.za/ctscanner/2013/02/18/an-example-for-the-entomologists/>

Contact Us

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

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Welcome

Welcome to the 2nd Stellenbosch CT scanner email newsletter! This newsletter is issued every second month and is aimed at all users of microCT technology for research and commercial applications, and most particularly clients of the Stellenbosch CT Scanner facility. The aim is to keep in touch with our clients and interested parties and share recent highlights and interesting projects. Please send this on to anyone you think might be interested. This newsletter is in PDF format, since it seems some mail filters block mails with too many links. Enjoy!

People

Sarah Knuth successfully completed her internship and has handed over to Vincent Young, see photograph below. In addition to Vincent, two new internships have been granted by the NRF DST internship program. The selected candidates will start officially on 1 May, so watch this space for more info soon!



From left to right: Dr Anton du Plessis, Vincent Young, Sarah Knuth and Prof Thomas Seifert.

Achievements

The CT scanner unit is almost officially **1 year old!** The official launch function was held on 12 April 2012. The financial summary for the last 12 months since the launch shows that the unit has **achieved 100% cost efficiency in its first year of existence!** This huge achievement was made possible through hard work, support and loyal clients like you. A big thank you to everyone who contributed to this achievement.

A study on the 3D imaging of thermal degradation of wood was completed successfully at our facility and **published** in the European Journal of Wood and Wood Products, click here to access the article:

<http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s00107-013-0683-6>

Application of the month: *Damascus steel knives*

The age old art of Damascus steel knife making is still practiced today, this specialized method is used to create beautiful patterned steel by folding the steel during the forging process. Cheaper imitations are also available and use surface etching to create a similar visual effect. In this application, CT scanning is used to analyze the internal structure of the knife to see if the folded steel layers are present and thereby identify the authenticity of the object.

For more images and animations, please click here:

<http://blogs.sun.ac.za/ctscanner/2013/03/27/damascus-steel-knives/>

Some good internet links on the subject:

Wikipedia: http://en.wikipedia.org/wiki/Damascus_steel

Modern Damascus steel knife making video:

<http://www.youtube.com/watch?v=J3nojb-qFH4>



Damascus steel knife – CT scans show internal patterned structure of the steel

Collaboration project: *Ancient animal mummies*

In our last newsletter we promised to update you on the progress of this project. The Pretoria mummy scan on 7 February was very successful and these results are now being analyzed. The most recent development is that a 3D replica of the skeleton from the inside of one of the intact birds was printed from CT scan data using 3D printing technology. We are now taking orders for a limited edition 3D print of this specimen, which allows us to bring the price down by printing a larger batch at once.

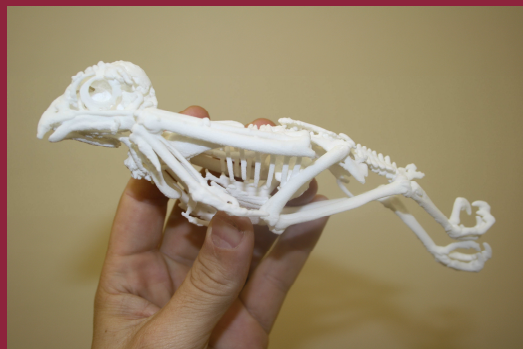
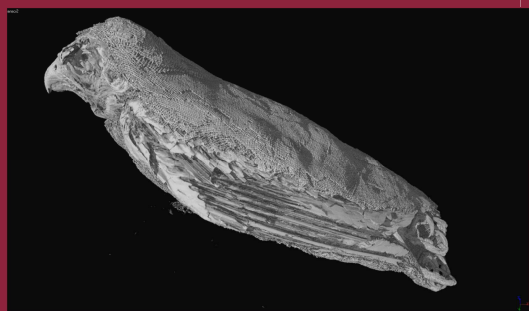
This is a collaboration between researchers at the Central Analytical Facilities and the Department of Ancient Studies. For more information on the project, or to make a donation, please contact Prof Sakkie Cornelius sakkie@sun.ac.za

To the left is shown CT data 3D surface view (top) with the inside skeleton of this specimen as a physical 3D print (bottom).

Ask 2 scientists - service

This service continues and is meant to bridge the gap between the man on the street with little scientific knowledge and the expert scientists who are usually not easily approachable. Please contact us with your questions or problems, we will most definitely try our best to help!

We also offer physical consultations and advice:
<http://blogs.sun.ac.za/cafprojects>



Special offers

Every first Friday of the month is a student training session – a great way to learn about the technology and even scan an object as a test. Free for post-grad students, R500 for commercial clients. Next training days 5 April and 3 May. Limited space available, book now.

Please support our collaborating partner – see advertisement below:

Events

The first national CT conference in South Africa will be held in the September vacation this year – abstracts are due by the end of April. Join us and share your work with others in this great forum, where we can all learn from each other.

Conference registration now open:

<http://indico.saip.org.za/conferenceDisplay.py?confId=30>

Acknowledgements

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The New X-Cube

Radioscopic Inspection System

Easy-to-use, flexible, fast and capable of producing high quality images.

Feature Summary

- Faster operating speeds
- Greater flexibility
- Enhanced image quality
- Network compatible
- Intuitive user guidance
- Easily programmable for repetitive tasks
- Small footprint and easy installation
- Low maintenance



For a Wide Range of Applications

The X-Cube finds application in all areas of industry where there is a need for fast and effective radiographic inspection of castings, steel components, plastics, ceramics and special alloys. Its versatility means that it can be used equally well in a production department or a research and development facility and in incoming materials inspection as well as for failure analysis. Its robust design and its rugged software cage fit it for use on busy shop floors and it complies with all important international safety standards.

The X-Cube is available in two models, the X-Cube Compact and the X-Cube XL. Each model is offered in a 160 kV and a 225 kV version, has a choice of work piece holding tables and can handle inspection work pieces up to 100 kg in weight.

However, the XL has a larger inspection cabinet, so that it can be used to inspect parts up to 800 mm diameter by 1500 mm high, compared with the 600 mm diameter and 900 mm height capacity of the Compact model.

Whether inspecting valves for the oil and gas sector, turbine blades for aerospace or aluminium castings for the automotive industry, the new X-Cube offers the complete solution to effective and productive radiographic inspection.

<http://www.ge-mcs.com/en/radiography-x-ray/integrated-systems/x-cube-series.html>

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