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Recent interesting scans (clickable links)

First 3D print in-house

<http://blogs.sun.ac.za/ctscanner/first-3d-print/>

First 3D print from CT data

<http://blogs.sun.ac.za/ctscanner/3d-printing-of-samples-scanned-at-the-ct-scanner/>

Cracks in a bolt from a German car

<http://blogs.sun.ac.za/ctscanner/cracked-bolt/>

Radio controlled airplane parts

<http://blogs.sun.ac.za/ctscanner/3d-x-rays-of-radio-control-airplane-engine/>

3D X-ray of engine casing

This example shows nicely what can be expected of 3D X-ray inspection of light metal alloys, such as the engine casing of a radio controlled airplane.

The 3D images to the right (top = surface, bottom = transparent) clearly show all the defects down to 1 mm diameter, while more defects down to 0.1 mm were accurately identified but are excluded here for simplicity. The 2D slice image videos on the website shows the defects in more detail (black spots in the slice image video).

Lots more images and videos at:

<http://blogs.sun.ac.za/ctscanner/3d-x-rays-of-radio-control-airplane-engine/>

Welcome

Welcome to the first newsletter from our facility in 2015! We are back in action with our engines running at full capacity, and we also start off with an engine casing example to fit the theme.

We have lots of new developments planned for the year so please check our newsletters when you get them and even pass on to your colleagues. Thanks for your support and remember: we are here to check and analyze YOUR samples!

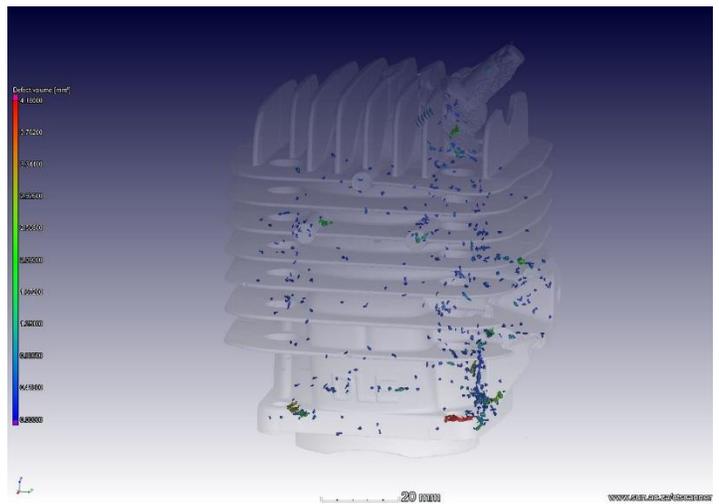
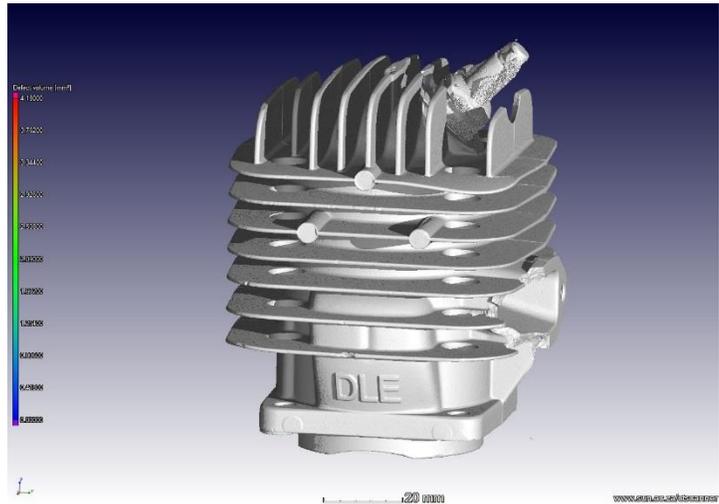


Figure 1: 3D analysis of radio controlled airplane engine casing with lots of porosity, only defects >1mm are highlighted here. More images and videos on the website (link to the left)

New: Idea2Product Lab

As experts in 3D scanning (the CT scan variety), we are very excited to bring you the first open access Stellenbosch 3D print lab. Not only can you now print anything we scan, you can learn about 3D printing hands-on. In collaboration with the existing Idea2Product labs (a national venture) and to be located at the Innovus Launchlab facility from 1 March, the idea is to make consumer-level 3D printing technology accessible to everyone. We are already open for printing, see our website: <http://blogs.sun.ac.za/idea2product>

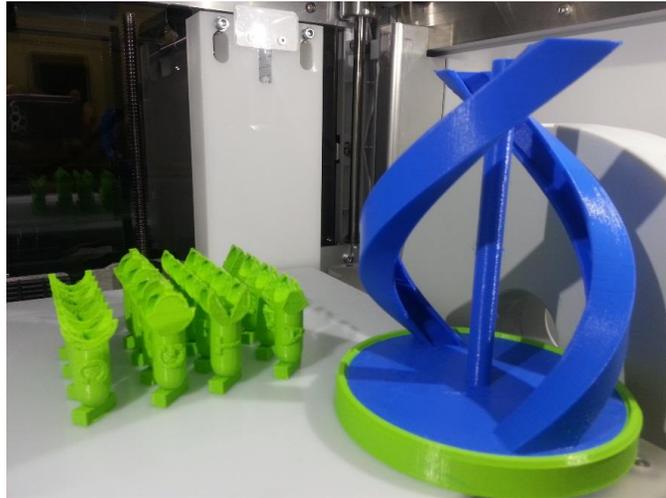


Figure 2: 3D printed educational DNA helix in colourful PLA plastic.

Services in 2015

It's a good time to re-cap all the services we offer, and list the new ones in the pipeline for later this year. Contact us for more information

- MicroCT scans
- High Performance Analysis facility
- 3D printing facility
- NanoCT scans including in situ compression and tensile test up to 500 N for small samples, as well as temperature stage from -20 to + 50 degrees C
- CT data analysis with advanced new modules of VGStudio still to be launched in 2015
- Near Infrared (NIR) and UV/Vis spectroscopy
- Fluorescence spectroscopy
- Raman microscope for molecular identification from a small spot
- Laser induced breakdown spectroscopy for elemental analysis from a small spot
- Professional Handheld / portable 3D scanning (pending funding)
- NIR hyperspectral imaging (pending funding)



Figure 3: The new lab – science & analytical services meets 3D printing

Contact Us

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Acknowledgements

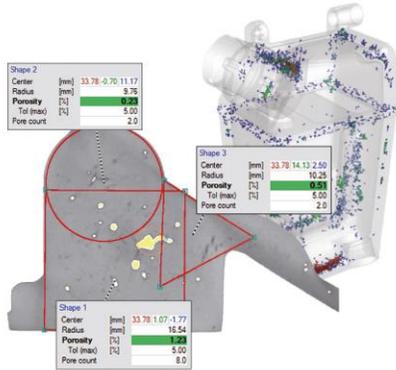
The CT scanner equipment acquisitions were made possible with grants from the National Research Foundation and Stellenbosch University. The Department of Science and Technology Internship program is also acknowledged for its support of this facility. We encourage and welcome any form of sponsorship or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

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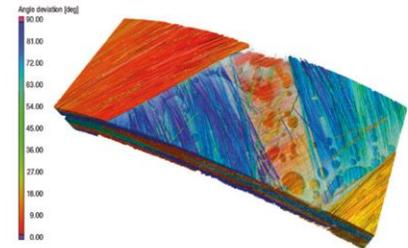
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NEW IDEAS FOR THE ANALYSIS OF CT DATA

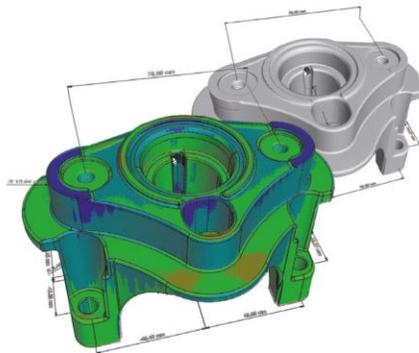
For castings: improved **Porosity Analysis**, now also available with 2D porosity analysis according to specification P 201/VW 50097



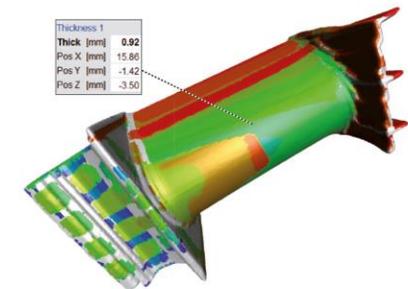
Light-weight design: **Fiber Composite Material Analysis** for the analysis, e.g., of glass fibers in composites



Metrology: **Coordinate Measurement** with integrated CAD Nominal/Actual Comparison



QA applications: **Wall Thickness Analysis** directly on voxel data, with integrated CAD kernel now also on CAD and STL data



Discover new ideas for the analysis and visualization of your CT data with **VGStudio MAX**.

VGStudio MAX is the only software you will ever need to transform your CT system into a comprehensive tool for product development and quality assurance. **VGStudio MAX** can be easily expanded with numerous add-on modules to become the adequate solution for all your analysis needs. You want to know more? Apart from our software solutions, the CT experts from Volume Graphics offer various services and special applications. Let us help you realize your ideas, too!



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