CT Scanner CAF Central Analytical Facilities STELLENBOSCH UNIVERSITY

CT NEWS

The Stellenbosch CT scanner facility newsletter

"more than just a scan"

Nov/Dec 2017

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- 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/drantondupleessis/

Of course also our regular website: www.sun.ac.za/ctscanner

Welcome

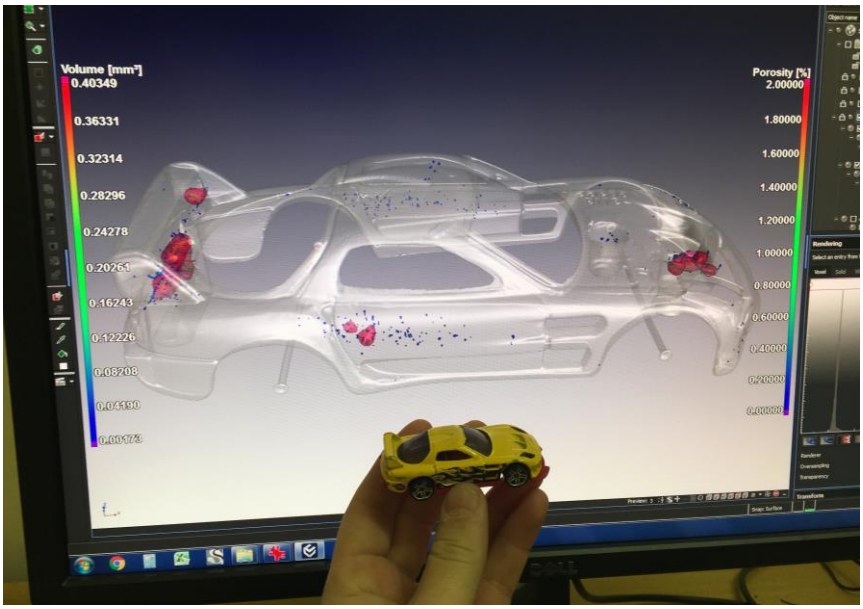
The last newsletter of 2017 is here! A huge THANK YOU to all our excellent clients, it was a great year.

We are open until 14 December and reopen on 8 January 2018. Have a merry Christmas and a restful break. We look forward to working together with you in 2018.

Enjoy this newsletter, share it and if you think you need microCT for your research or to improve your production processes, you probably do! Contact us today. It's easier and faster than you think.

New local porosity hotspot analysis

The new local porosity hotspot analysis, allows you to locate areas in your part containing clusters of pores where the local porosity exceeds a predefined value eg. 2 %. A nice example is shown below where the local porosity hotspot regions are highlighted in red. For a great video showing more of this example, see here: https://youtu.be/c3JdkIy93co



New porosity hotspot analysis – highlighting areas of high local porosity total irrespective pore size

Online bookings & billing

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/machform/view.php?id=73618

The booking system:
http://www.supersaas.com/schedule/CAF_Booking_systems/CT_Facility

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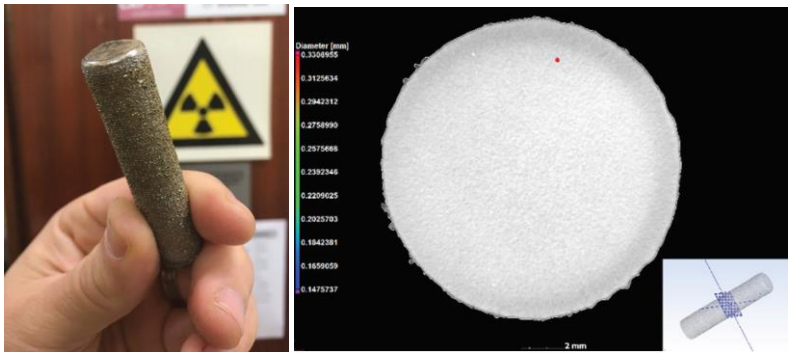
We are members of IntACT, the International Association for Computed Tomography

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

Tech note series: part 2

In an effort to demonstrate some of the more routine analysis methods using X-ray CT, we continue our series of simplified "tech notes". All can be found online at http://blogs.sun.ac.za/ctscanner/introduction/. We will focus on one at a time in our newsletters: this month is porosity analysis of additive manufactured metals.

Additively manufactured parts (3D prints) often can contain pores. This porosity can vary in size and distribution, and can be filled with metal powder, obscuring its presence when testing by other methods. Using microCT is ideal for checking that your system / build parameters are optimized, and also as a final quality check in final built parts.



Routine porosity analysis in additive manufactured metals.
http://blogs.sun.ac.za/ctscanner/files/2013/07/CT-tech-note-2.pdf

Student project highlight

Carene Mouton, BSc Hons student in geology, achieved 78% in her project, about X-ray microCT applied to precious gemstones. Her work will be written up for a journal publication in the new year. All we can say is the project made use of X-ray micro and nanoCT, combined with optical spectroscopy.

Figure 2: From left to right Dr Rene Heyn, Ms Carene Mouton, Dr Anton du Plessis, gemstones investigated are shown to the right.

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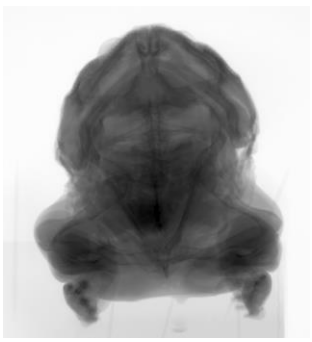
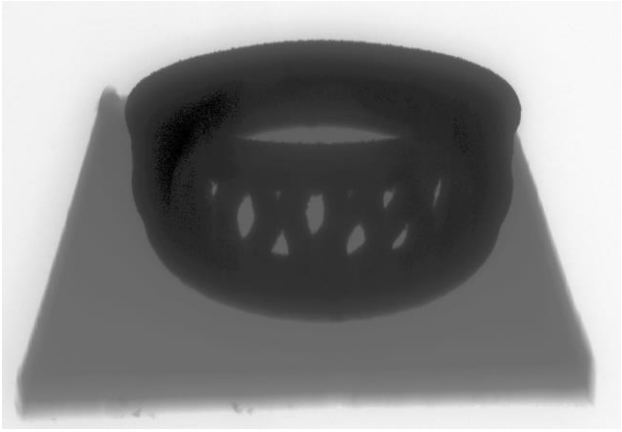
Guess-the-X-ray

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. In the last newsletter it was a snake, which now is shown in CT in the example above. The new one for this month:



Last month's quiz – we had some interesting guesses, but it was not a turtle or chicken or dog – it was a Frog – An African Bullfrog.

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. First correct answer wins

Acknowledgements

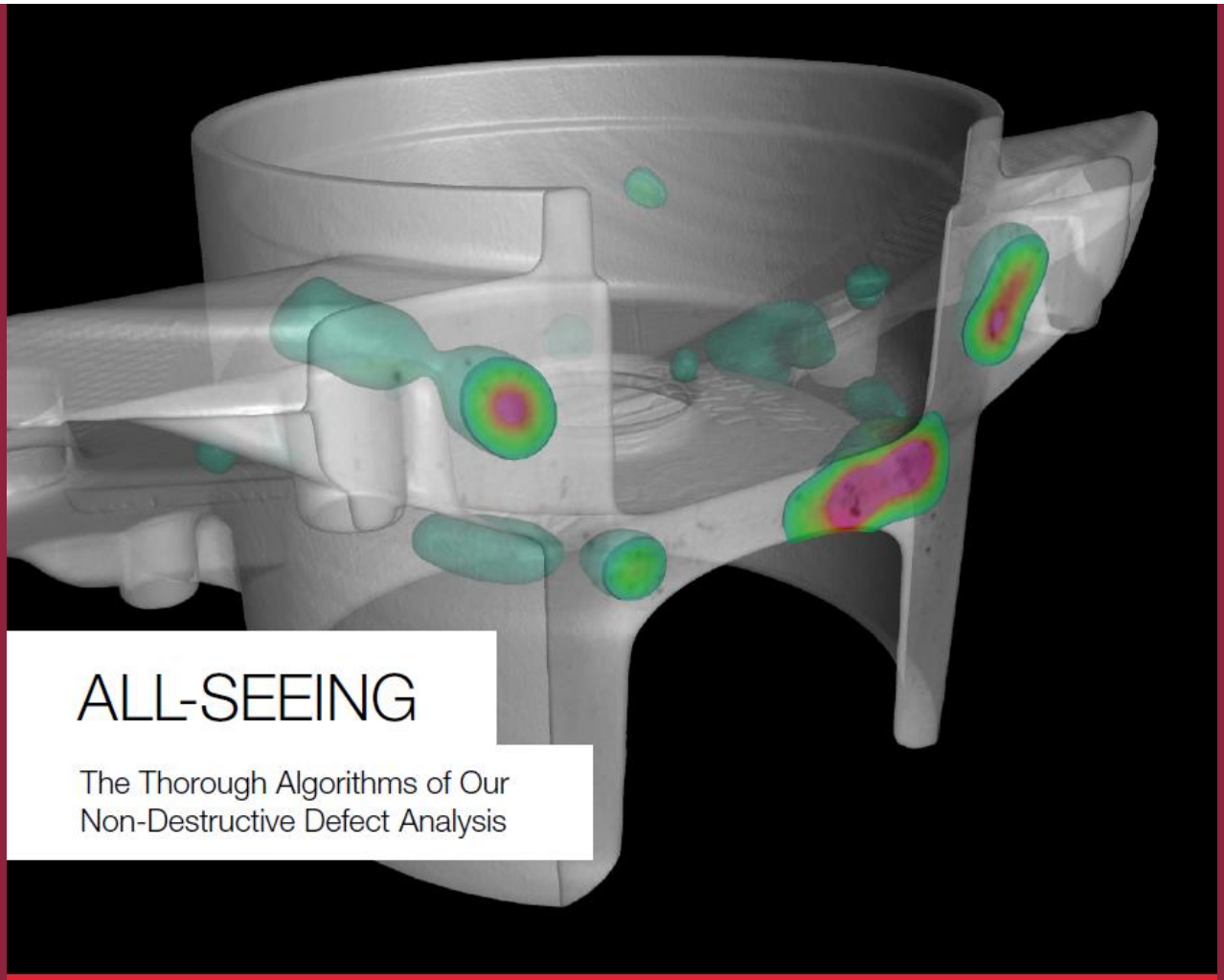
The CT scanner equipment acquisitions were made possible with grants from the National Research Foundation and Stellenbosch University. The Department of Science and Technology Internship program is also acknowledged for its support of this facility. Narich is acknowledged for its support in the form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

Please cite our facility when reporting data generated here:

http://www.sciencedirect.com/science/article/pii/S0168583X16303433

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/download-viewer.html



ALL-SEEING

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