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Recent interesting scans (clickable links)

Drill core CT

<http://blogs.sun.ac.za/ctscanner/2014/08/26/drill-core-ct/>

Slag analysis

<http://blogs.sun.ac.za/ctscanner/2014/08/26/slag-sample-advanced-analysis/>

Iron ore drill core

<http://blogs.sun.ac.za/ctscanner/2014/08/26/iron-ore-drill-core/>

CT Scanning in Botany

<http://blogs.sun.ac.za/ctscanner/2014/07/31/botany-ct-scans/>

Application of the month: CT Drill core analysis

This example demonstrates what X-ray CT can do for exploration geologists. Besides being totally non-destructive, it provides useful and fast information about the inside of the rock, allowing more selective further analysis.

In the example, the brightest phase (RED) can be analyzed on the surface with spectroscopy tools such as handheld XRF (also in our facility). These particles are evenly distributed across the sample, taking up 0.1 vol%, with a less dense phase (in yellow) also present at 1.2% with larger sections as shown. See more information here:

<http://blogs.sun.ac.za/ctscanner/2014/08/26/drill-core-ct/>

Welcome

This month we focus on mining, exploration and earth science. To put it simply, this technology is the best way to analyze rocks and get real 3D information. From fast non-destructive ore grading of drill cores to 3D connectivity and even permeability analysis of porous rocks, and everything in between.

Please visit our booth nr 66 at IMA2014 (Sandton Convention Centre) from 1-4 September, where we can discuss your scan requirements and demo some 3D analysis for you.

The aim of this newsletter is to gain new clients and new users of the facility, so please send it on!

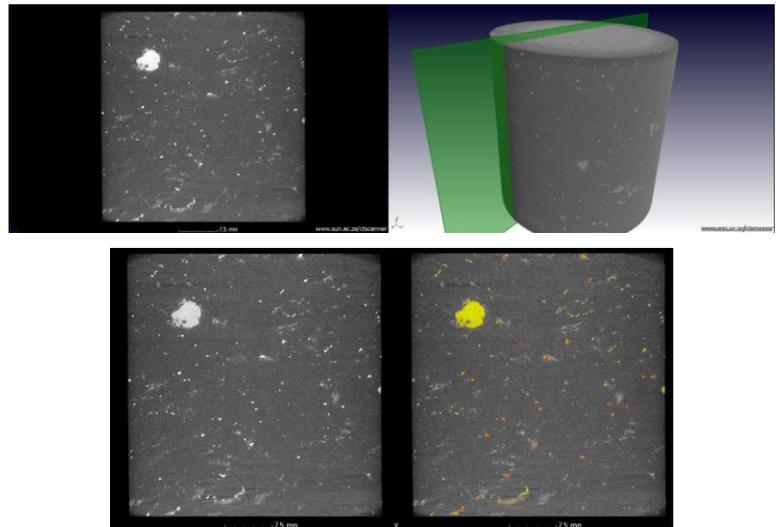


Figure 1: CT Scan of drill core, and visual segmentation of phases. Quick analysis provides volumetric %s and visual overview of the inside of the sample

Advanced analysis: Slag sample

The porosity of samples can be visualized and analyzed with CT scans and automated defect analysis. In addition, new tools are available to do permeability analysis of very porous materials – that means to investigate how gas would flow through a rock, for example. This is especially important for oil & gas mining industries. We provide the scan and analysis service and can do method development projects also.

In this example a “slag” sample is shown, which contains both closed and open porosity of a wide size range. When virtually applying a gas pressure to one side of the sample, the pressure gradient and the gas flow through the sample can be visualized and the permeability can be calculated in 3D.

More information, images, videos:

<http://blogs.sun.ac.za/ctscanner/2014/08/26/slag-sample-advanced-analysis/>

Special offers

Refer a new client to us and get additional hands-on analysis support for your project, including at least one high quality video from your data.

Contact Us

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

Staff scientist – Anton du Plessis, PhD

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Analyst – Stephan le Roux, MSc

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Physical address for sample deliveries:

CT Scanner Facility, Room 1046

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Bosman Street, Stellenbosch

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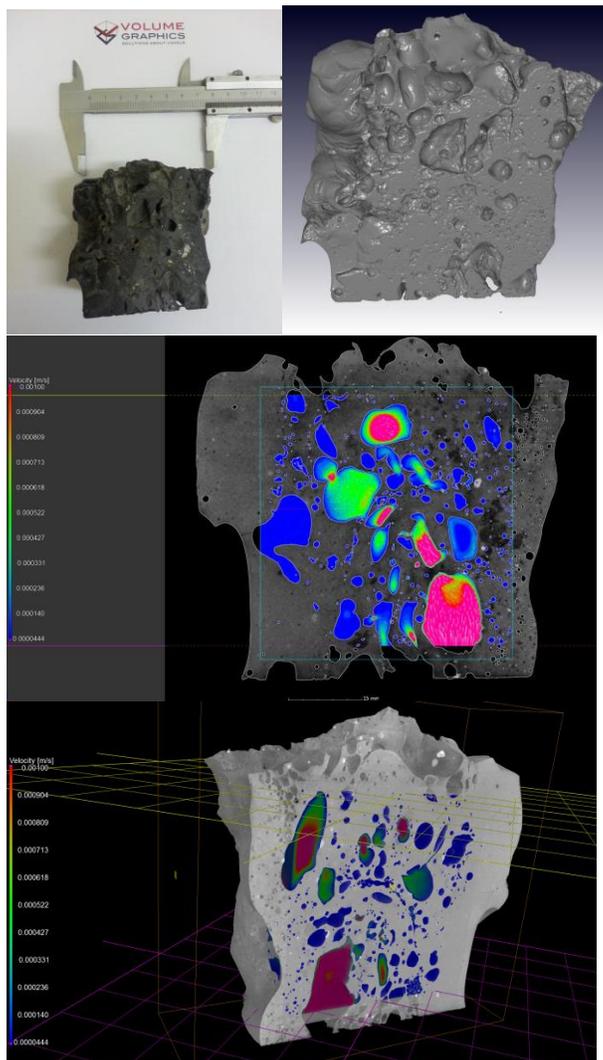


Figure 2: Permeability analysis of porous sample.

Advanced CT geo-analysis

Stephan le Roux was selected to attend a specialized training course at the Jackson School of Geosciences in Texas, USA. In this training he learnt additional analysis tools specifically applied to geological samples. Not only will this assist in the completion of his PhD but advanced analysis capabilities are possible for all users of the facility.



Stephan in Texas learning specialized CT geo-analysis

Services & Events

Nano CT Scanner launch:

15 September 2014 – All welcome, please join us with your partner ! Dress code is smart casual, please RSVP by next week 1 Sept and see more information here:

<http://blogs.sun.ac.za/ctscanner/2014/08/26/nanoct-launch-and-nir-training/>

We will be at IMA2014:

www.ima2014.co.za please visit us at booth nr 66 to discuss how we can help you with the best analytical services

NIR and chemometrics training – 16 – 20 September 2014: Applications close this coming Monday, see more information here:

<http://blogs.sun.ac.za/ctscanner/2014/08/26/nanoct-launch-and-nir-training/>

E-Research Africa conference on big data: <http://www.eresearch.ac.za/>

Handheld XRD/XRF combination product presentation, details to follow

Nice "kickstarter" campaign by X-ray CT facility similar than ours. Nice concept, great examples, much like us!:

<https://www.kickstarter.com/projects/3d-rayvision/3d-xray-vision-state-of-the-art-free-for-everyone>

Please support our advertiser, GE:

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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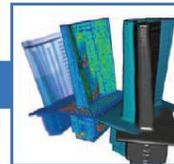
New production oriented, affordable CT solution for 3D failure analysis *and* precision 3D metrology



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CT scan of a cylinder head.



3D analyses of a scanned turbine blade.

Efficient & reliable one-button|CT

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- CT performance specified referring to ASTM E 1695 guideline
- Robust, small footprint design for production control with low cost of ownership
- Crane for fast and ergonomic handling of heavy samples up to 50 kg (110 lbs.)



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