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Recent interesting prints (clickable links)

Ballerina for birthday cake

<http://blogs.sun.ac.za/idea2product/2015/06/02/220/>

Toy action figure

<http://blogs.sun.ac.za/idea2product/2015/06/22/action-figure/>

Engineering blade prototype

<http://blogs.sun.ac.za/idea2product/2015/06/08/engineer-designed-prints/>

Previous newsletters with many more examples

<http://blogs.sun.ac.za/ctscanner/introduction/>

3D printing examples and services

<http://blogs.sun.ac.za/idea2product>

Training workshop in 3D printing

We offer a special course aimed at public learning of consumer level 3D printing, which involves a half-day of training and printing if your own small object. This training was recently done as part of the Central Analytical facilities training initiative with photos seen in Figure 1, students printed their own objects including a badge and other small items. Such training is offered to any groups including school groups, graduate student classes or the general public. Please book a course by direct email and for a class of 6 this is R250 per person, inclusive of print.

Book your class group today:

lerouxsg@sun.ac.za

Welcome

Welcome to our June newsletter. We are combining our 3D scanning and printing newsletters, to save time and provide a better overview of what we can offer you. In this newsletter we focus on our 3D printing facility – the Idea2Product lab.

Having said that, X-ray microCT is still our main business and we urge you to not only do your X-ray scanning work with us, but also submit your work for presentation at the **2nd national conference on Imaging with Radiation (IMGRAD)** being hosted in Stellenbosch this year: the deadline is 30 June, less than 5 days from now. The conference is supported by our gold sponsor: FEI, see also their advert at the back of this newsletter.

Please submit your work to this exciting conference and join the community of diverse academic and industrial clients using 3D imaging data and learn from each other, more information can be found here:
http://academic.sun.ac.za/saf/training_IMGRAD.html

Please note that the 2-day conference is preceded by a 3D image processing training workshop of 2 days: one day will be focused on VGStudioMax 2.2 and one day on Avizo Fire 9.0. The training is discounted to R3000 per delegate. Spots are limited so those that are late will be accommodated in 3D printing workshops if possible. Please book with registration.



Figure 1: The recent Central Analytical Facilities training event included a 3D printing training workshop. Students not only learned about 3D printing, but also printed their own objects. For more information on CAF free training events please see:

http://academic.sun.ac.za/saf/training_Midyear.html

3D Printing of ancient object

This example is not new but has eventually been published in an academic journal (not so rapid publication process), so we revisit it here. The paper can be found at this website: <http://www.emeraldinsight.com/doi/abs/10.1108/RPJ-09-2013-0089>

The sample is one of a number of ancient Egyptian animal mummies which are housed at the Iziko Museums in Cape Town, and which were X-ray CT scanned to investigate the contents for the first time. The data obtained can not only allow viewing and dimensional measurements of contents but can also be used to make a 3D print of the contents. The 3D print shown in this work is done with a high resolution industrial grade printer.

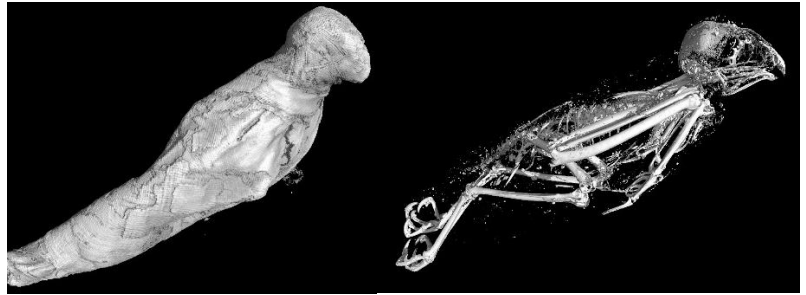


Figure 2: CT scan of ancient wrapped bird mummy is taken to 3D print for demonstration and visualization purposes.

Research projects

In addition to standard or routine services in X-ray CT analysis and 3D printing projects, we also initiate and implement research projects of our own and gladly collaborate in your projects where sensible.

We are particularly interested in finding new applications of 3D scanning and printing technologies, especially where they can be used to make a real impact in solving problems and creating value. We are open to collaboration in a number of application fields and welcome collaborations from suppliers, academics or commercial companies. Please work with us: we gladly work with you if you have one or more of the following on offer: money, equipment, manpower and/or new ideas. Please note there is no discount for collaboration, and it is entirely optional.

Our publications and research interests are described in more detail at the website link below.

<http://blogs.sun.ac.za/ctscanner/research/>



Figure 3: Recent conference presentations in Ghent, Belgium. Anton presented work on a specific layered defect found in 3D printed metal parts and Stephan presented a case study on ore quantification in drill cores for geological exploration. Abstracts can be found here:

<http://www.ndt.net/events/DIR2015/app/content/topic.php?eventID=29&TopicID=2436&sessionID=366&present=poster>

<http://www.ndt.net/events/DIR2015/app/content/topic.php?eventID=29&TopicID=2427>

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Researchers & companies: provide us your equipment and advanced softwares to manage as part of our facility, in exchange for zero cost of usage, free maintenance and upgrades. This is a win win situation, where we use it to maintain our facility and enhance our materials analysis capabilities.

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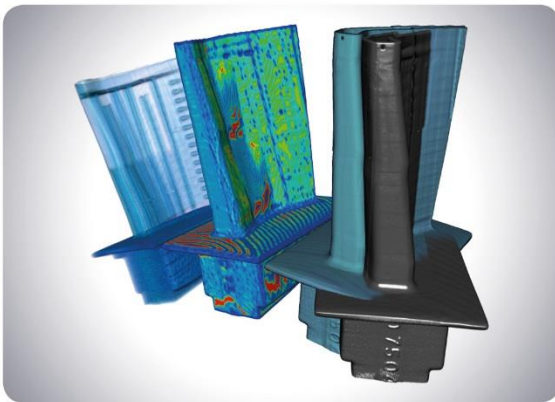
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All-in-one software application. Avizo is a comprehensive, integrated software tool for material and object structures analysis. It provides all the visualization and analysis features required at each stage of your prototyping, production and control processes: 3D data exploration, segmentation, quantitative analysis, measurement, porosity study, wall thickness analysis or comparison with CAD models.

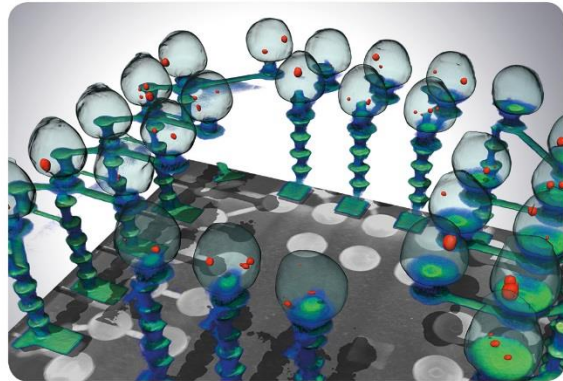
Interactive 3D visualization. Avizo allows the import and fusion of 2D and 3D image data from multiple sources, enabling direct interactive 3D visualization and exploration.

High-end interactive visualization techniques, including slicing and volume or surface rendering, provide detailed insights into material and object 3D structures at any scale.



↑ **Turbine blade.** Courtesy of GE Aviation.

Learn more at AVIZO3D.COM



↑ **Solder balls of a BGA (Ball Grid Array).** Segmentation of voids. Courtesy of nanoX Technology Pte Ltd.

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Our consultants can help you analyze your specific tasks and workflows, and leverage your know-how and specific expertise to get them implemented in Avizo.

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