

18 September 2014

GE Phoenix Nanotom s supplied by Zetech to University of Stellenbosch



With its 180 kV / 15 W ultra high performance nanofocus X-ray tube, precision mechanics and advanced software modules, the nanotom® is the inspection solution for a wide range of 3D CT applications. Once scanned, the fully three dimensional CT information allows many possibilities for analysis, e.g. non-destructive visualization of slice images, arbitrary sectional views, or automatic pore analysis. Since the whole geometry of the object is scanned, precise 3D measurements of complex objects or even the automatic generation of first article inspection reports within an hour are possible.

The first nanoCT scanner in Africa is officially launched during an evening event on 15 September 2014 at Stellenbosch University's Central Analytical Facility. The nanotom instrument extends the resolution capability of the facility to 500 nm. The Facility is now equipped with state of the art micro and nanoscale 2D and 3D industrial X-ray imaging instruments, making it one of only a few such facilities worldwide. This type of non-destructive testing, also termed X-ray microscopy, is growing fast and is already standard practice for high value manufacturing factories to check parts and validate new production processes. Within a short time it gives you a full porosity size distribution, visual or other data / information from a sample. Besides applications in research, electronics inspections and manufactured plastic or metal part inspections, some mining companies are now starting to adopt this technology to investigate ore bodies in 3D to better analyse and understand their deposits, combining it with traditional analysis for an improved total analysis solution.

The CAF facility provides Non Destructive Analysis services to industry and academia on an open access low cost basis, all users are welcome to make use of it. The CAF is equipped with the most advanced X-Ray Analysis Systems in Africa.

For more information please see www.sun.ac.za/ctscanner or contact:

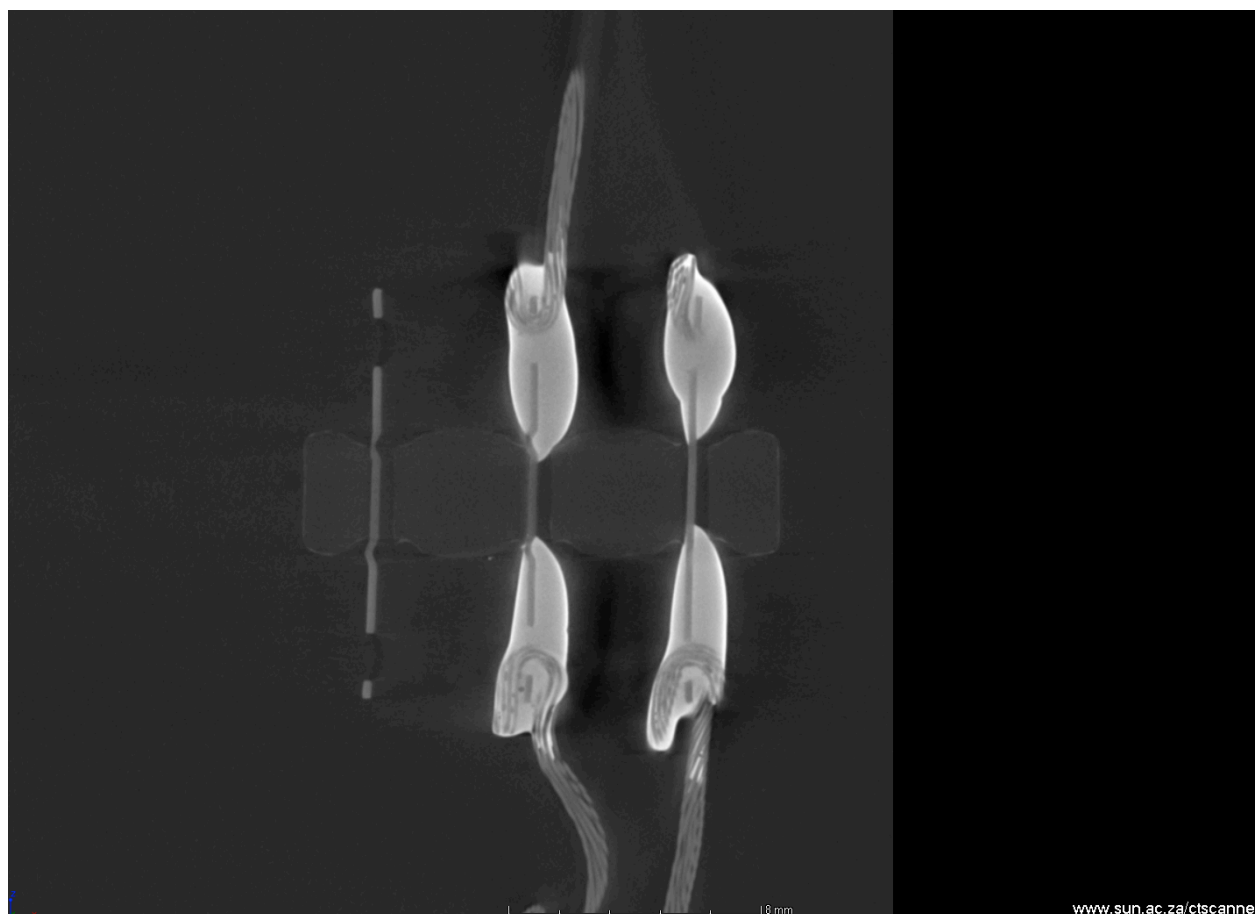
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Zetech is the exclusive GE Phoenix X-Ray dealer in South Africa. Zetech personnel is GE level 2 trained and certified to provide technical support to the equipment. Zetech supplies equipment, materials, technical support to industry in South Africa since 1986

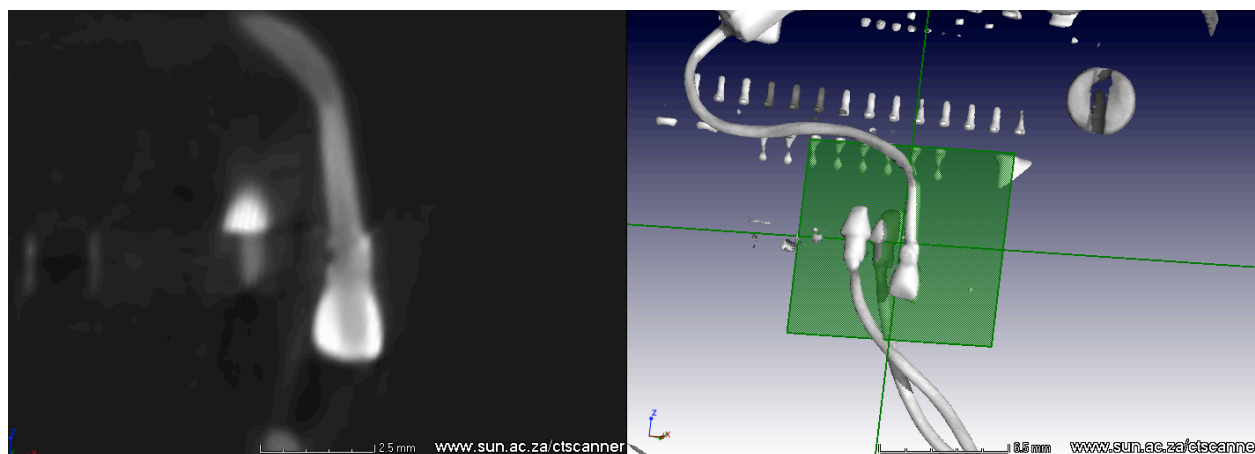
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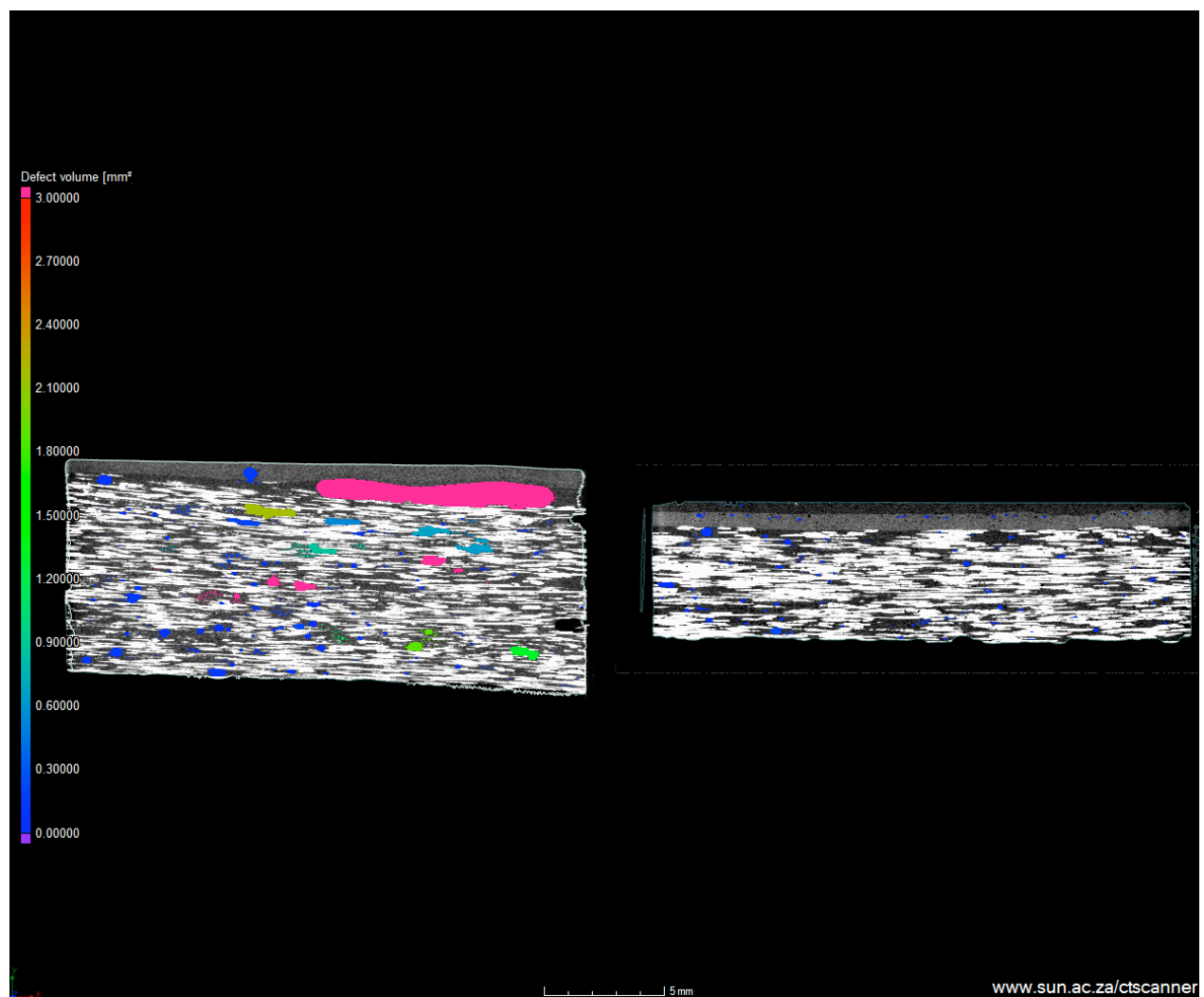
Please refer to images below for X-ray CT applications examples. The images are courtesy of Dr. Anton du Plessis.



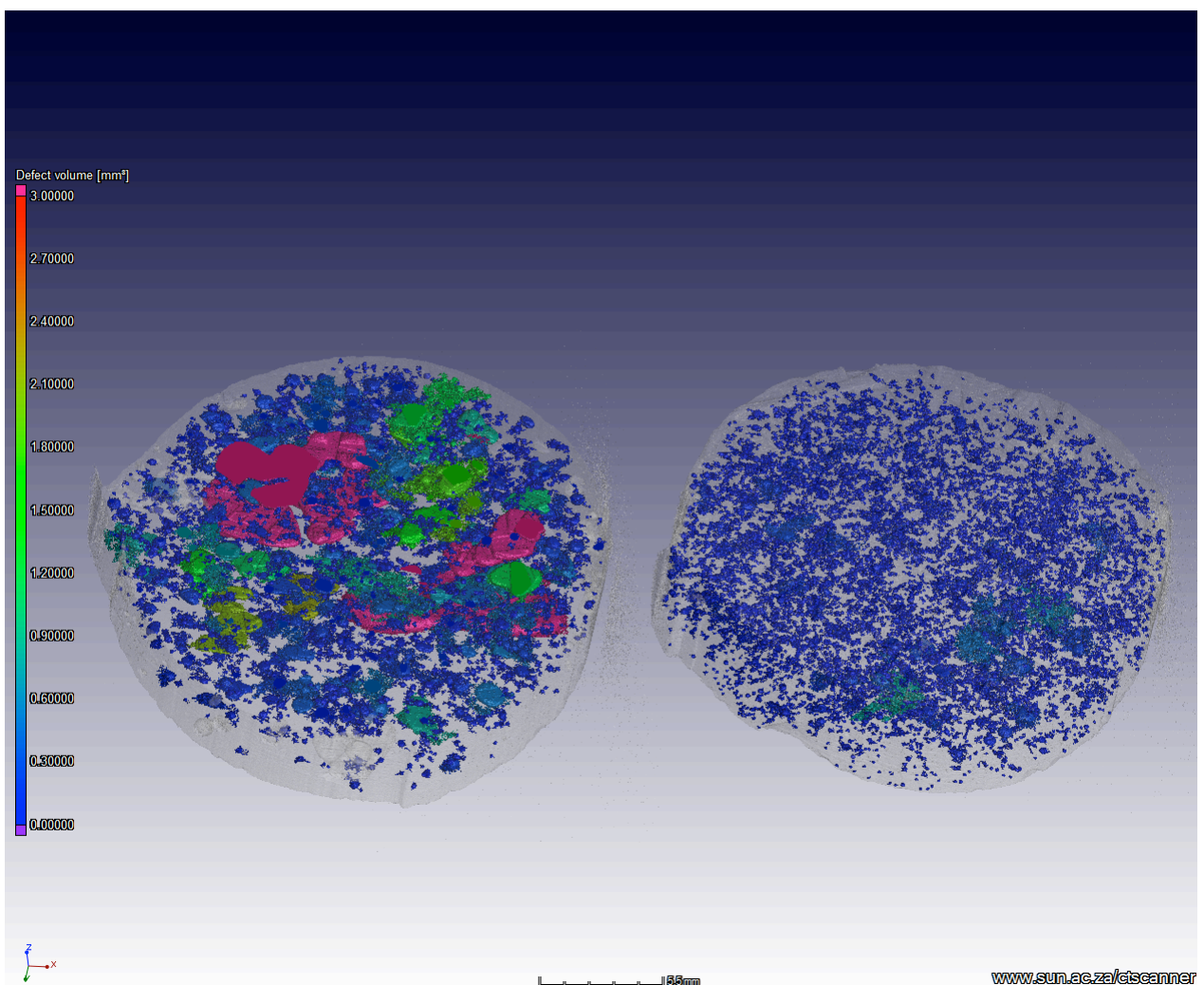
Solder connections side slice view



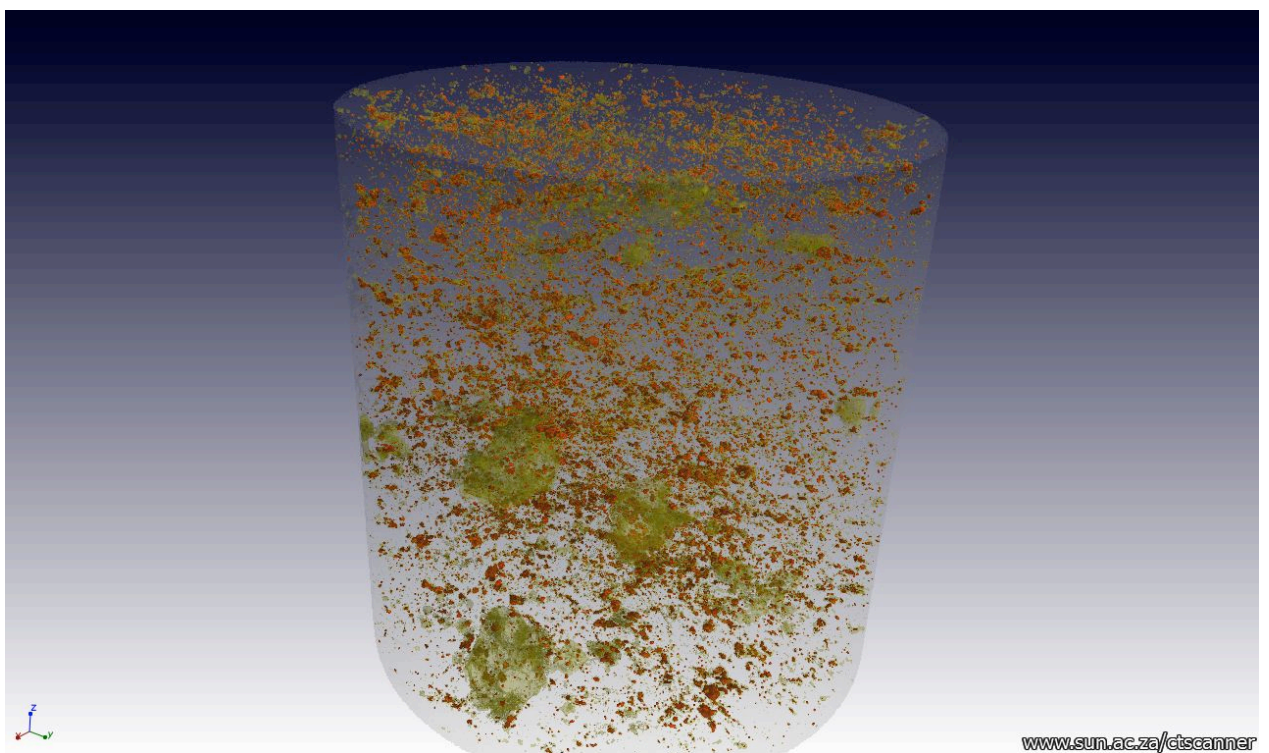
Lead solder joints inside a large product analysed nondestructively at resolution 0.1 mm



Cut fibreglass samples from two types of fibreglass manufacturing technologies, showing the difference in porosity structure. Pore colour coding shows largest pore in pink, smallest in blue. Full data for each sample is available.



Cut fiberglass: the same samples as above shown in 3D images, indicating the left sample has much larger pores / defects. Besides average porosity, each pore volume is available in a pore size distribution analysis result.



CT scan of a drill core showing the distribution of two types of mineral particles in red and yellow. An animated video of this example is available at https://www.youtube.com/watch?v=NEAlv_E4nOo