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## ● Welcome to Bruker micro-CT Academy!

Welcome to the first issue of the Bruker micro-CT Academy newsletter. Our goal is to keep users informed and involved in our micro-CT technologies and applications on a monthly basis. In every issue, we will discuss a topic about SkyScan systems and their extended applications; meanwhile, we will also update you on new available application software and our participation in conferences and exhibitions. Subscribe at <http://partners.bruker-microct.com/subscribe> and get Bruker micro-CT Academy every month!

## ● Visualization of Local Thickness in 3D

This month's technical focus is on visualization of thickness measurement in SkyScan analysis software by the color-coding of thickness. Thickness measurement in 3D reveals one of the biggest advantages of analyzing objects in 3D, that is, the making of true 3D measurement independent of the orientation of the object. The 3D thickness measurement method is referred to as "sphere-fitting" – thickness is defined locally as the diameter of the largest enclosed sphere.

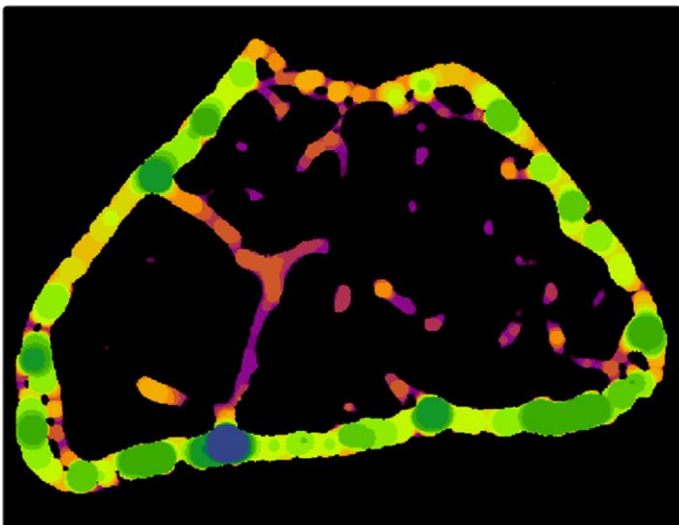


Image: Color-coded thickness measured by 3D sphere-fitting can be viewed in a 2D cross-section slice throughout the entire dataset – using SkyScan CT-Analyzer ("CTAn") software.

A method note, "[MN025 Color coded 3D size distribution CTVox](#)" shows how to perform the two necessary steps:

- (1) binarize the scanned object in CTAn, perform 3D analysis and create a thickness color-coded dataset, and
- (2) load and view this 3D thickness map in CTVox, using the powerful transfer function editor for fast and flexible creation of vivid and revealing color and texture to best visualize thickness in 3D.

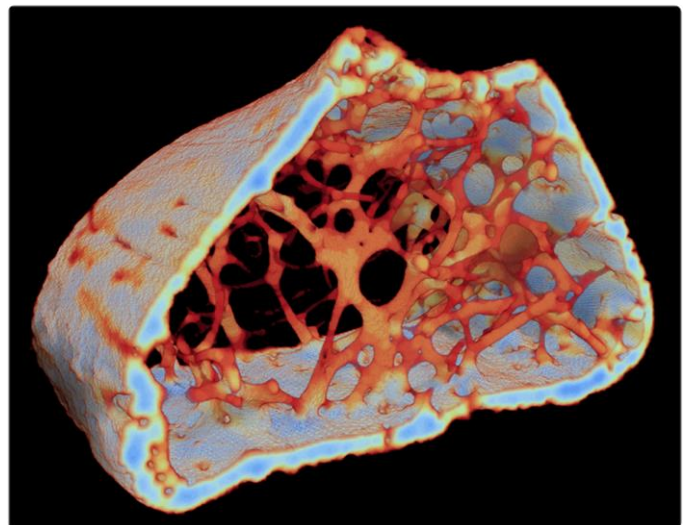


Image: Color-coded thickness measured by 3D sphere-fitting can be also viewed in 3D using CTVox.

## ● SkyScan1172 Advanced Setup and Customization

The SkyScan1172 high-resolution desktop micro-CT scanner is becoming a benchmark world-wide in an ever-expanding range of applications. This popularity comes from the combination of high resolution with flexibility to image a broad range of sample sizes and densities with fast scans that can be done in automated batches.

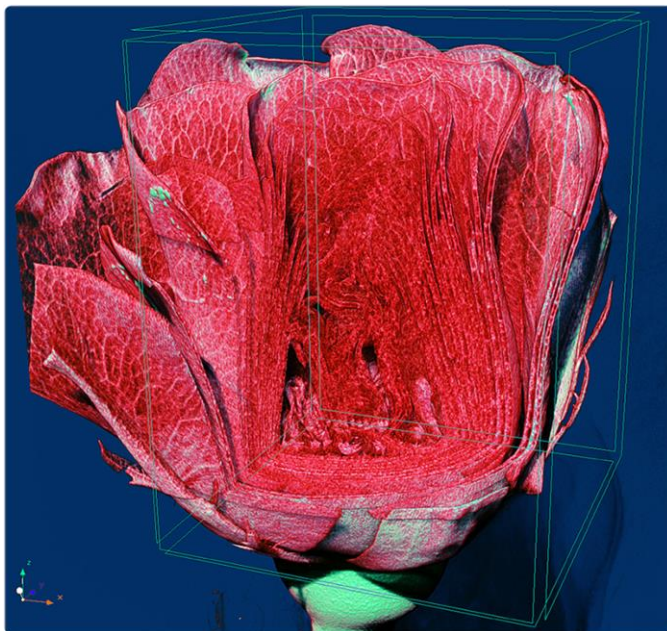


In order to take advantage of the full possibilities with this scanner, a thorough working knowledge of the instrument is needed including some advanced functions such as setting up nonstandard external filters, adjusting voltage, batch and oversize scans, as well as essentials such as flat field corrections and the alignment test. All of these are covered in a comprehensive instruction document entitled "[MN029 Method Notes 1172](#)" which is a supplement to the manual of this scanner.

## ● Bruker micro-CT News

An important update of CTVox is released: [CTVox version 2.7](#). A major new feature is the ability to magnify or "stretch" the transfer function window, making it much easier to finely control the color channel curves at any narrow range. This is necessary with color coded thickness images where the number of used grey levels may be very limited. Also new in CTVox 2.7 is adding a color bar legend to an image to link values to colors, and adding of a customizable annotation to a displayed image. Other recent enhancements to CTVox include handling of DICOM, RAW and ISQ formats and export of data to mobile volume rendering apps created by Bruker microCT and freely available on the AppStore and GooglePlay (search for CTVox).

## ● Image of the Month



*3D reconstruction of the internal structure of a rose flower scanned in SkyScan1272. Volume rendering with virtually removed front top part using CTVox program.*

## ● Upcoming Events

Bruker microCT will participate with an exhibit in the forthcoming conferences. Please click the link below for more information. We hope to see you there!

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|--|-----------------|--------------------|
| ▪ <a href="#">AACR</a>                 | April 6-9,      | San Diego, USA     |
| ▪ <a href="#">ATS</a>                  | May 16-21,      | San Diego, USA     |
| ▪ <a href="#">ECTS</a>                 | May 17-20,      | Prague, Czech Rep. |
| ▪ <a href="#">INTERPORE</a>            | May 27-30,      | Milwaukee, USA     |
| ▪ <a href="#">ESMI conference</a>      | June 4-6,       | Antwerp, Belgium   |
| ▪ <a href="#">TERMIS EU</a>            | June 10-13,     | Genova, Italy      |
| ▪ <a href="#">BRS</a>                  | June 25-26,     | Sheffield, UK      |
| ▪ <a href="#">3D Materials Science</a> | June 29-July 2, | Annecy, France     |