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Preclinical Micro-CT Scanner

LOTUS-inVivo

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LOTUS-inVivo

Micro-CT

Micro- Computed Tomography (micro-CT or µCT) is a non-destructive imaging method for production of high-resolution three-dimensional (3D) images composed of two-dimensional (2D) trans-axial projections at different views, or 'slices', of a target specimen.

LOTUS-inVivo provides extremely high-quality images with contrast-to-noise, resolution and dose performance optimized for preclinical imaging. Also, it is a high performance, stand-alone, fast in-vivo and ex-vivo micro-CT with continuously variable magnification for scanning small objects . The variable magnification allows scanning all kind of samples with high spatial resolution down to 10 µm pixel size.

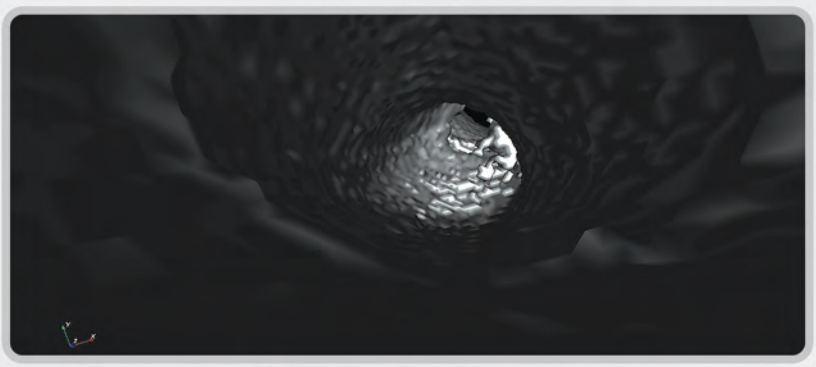
Applications

LOTUS-inVivo has many preclinical applications in assessment of:

- bone structures
- vascular structures
- tumors dimensions
- abdominal organs
- heart and thorax
- brain
- digestive system
- teeth (root canal assessment, minerals, implants, ...)

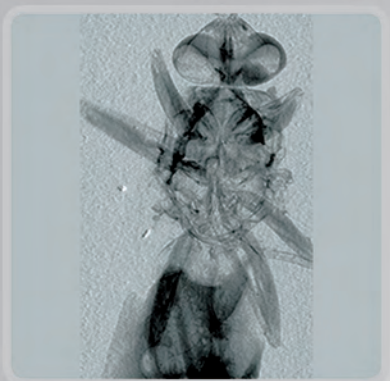
3D SR, Segmentation

Human Teeth



Flying Through Tooth Root Canal

MIP



Insect

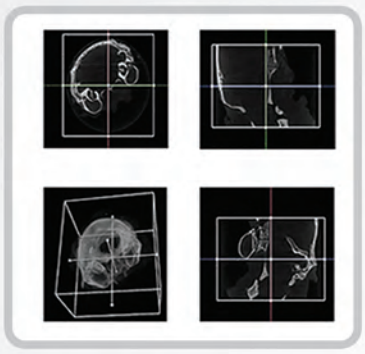
Live Micro-Radiography

Mouse Skull

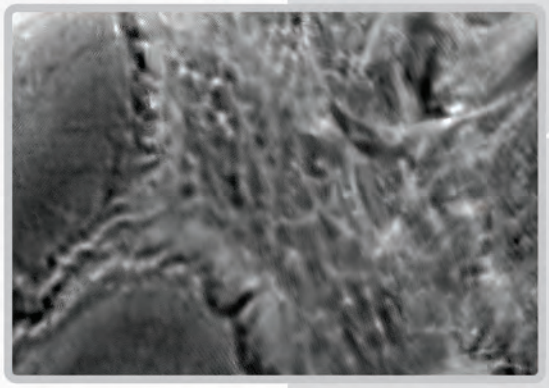
LOTUS-inVivo

Image Gallery

3D VR, MPR



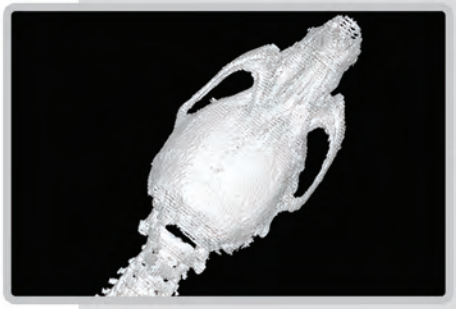
Rat's Skull



Rat's Skull Bone Morphology

Rat Sample

SR of a Whole Body
Mouse Skeleton



SR of Mouse Skull

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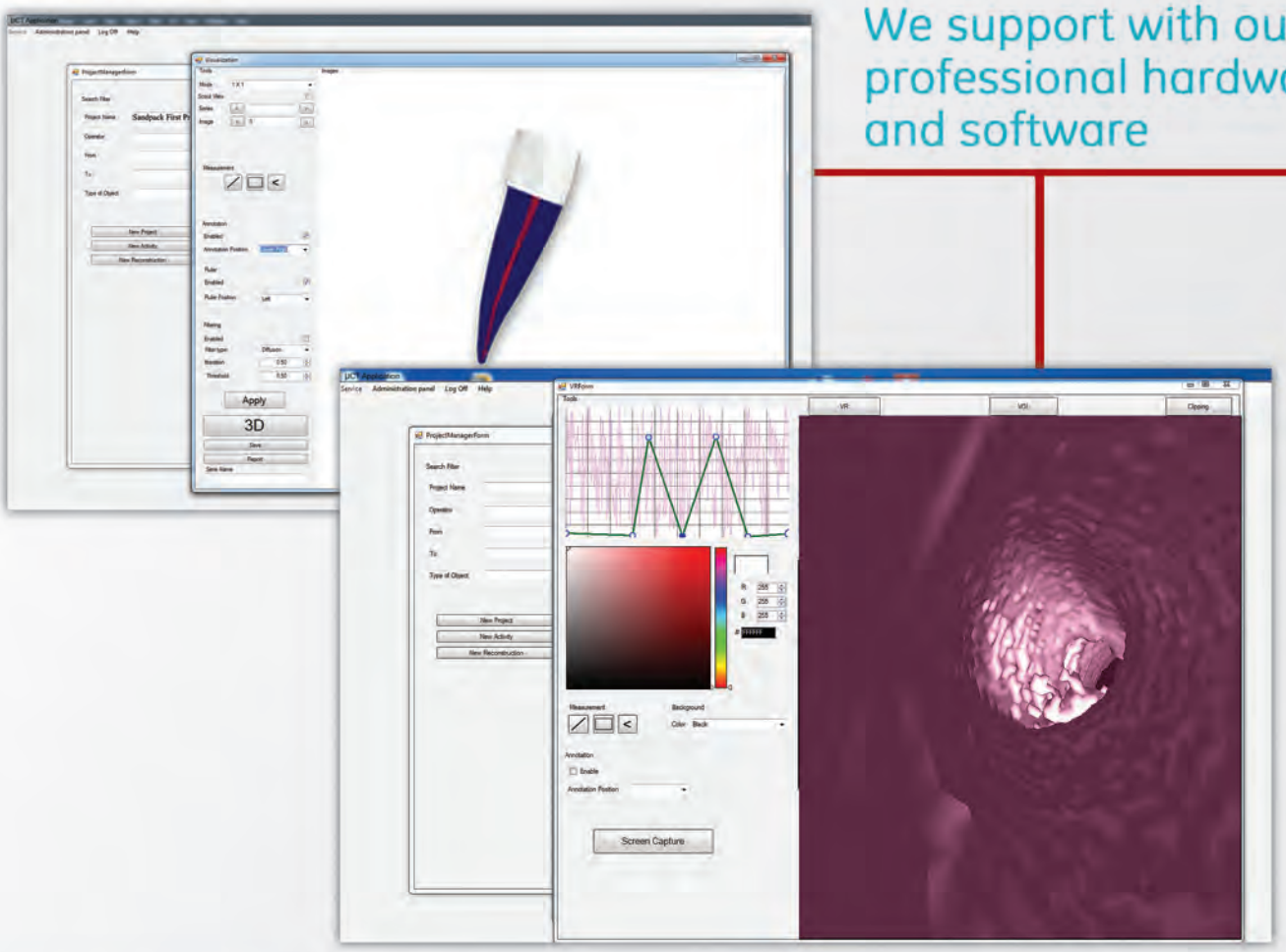
Software



We support with our professional hardware and software

LOTUS-inVivo software package includes:

LOTUS inVivo-ACQ

ACQ software provides a user-friendly GUI for setting professional imaging protocols.

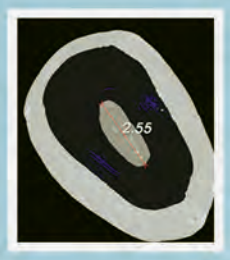
LOTUS inVivo-REC

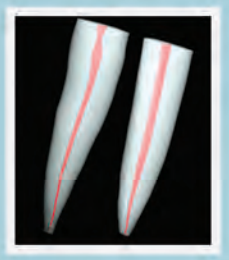
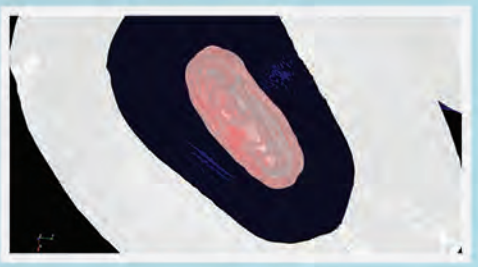
REC software provides highly efficient reconstruction algorithms for reformation of 3D models from raw data.

2D visualization, measurements and processings are available in this package.

LOTUS inVivo-3D

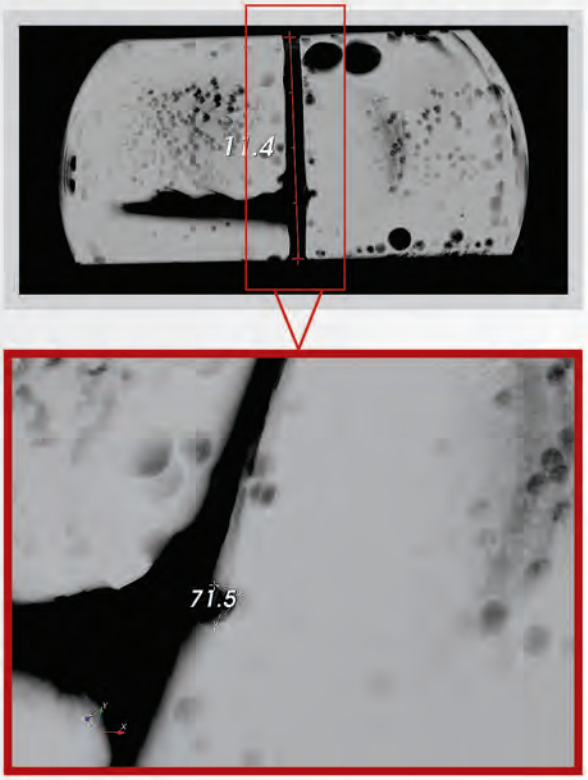
3D software contains all 3D visualization techniques (VR,SR,MPR,MIP, etc.), measurements and processings for LOTUS-inVivo 3D models.




Human Dental Samples

LOTUS inVivo-3D software provides optimized Surface Rendering (SR), and Volume Rendering (VR) techniques for 3D visualization of teeth samples. Flying through capability and various 3D measurements and processings are available for development of new techniques, comparative analysis of existing approaches in endodontic treatment, and enhancement of dental education in preclinical stages.



3D VR of biocompatible composite

Various optimized Volume Rendering (VR) techniques used in LOTUS inVivo-3D software enables users to do multiple interactions and measurements with 3D visualized models.

3D MPR of Rat's Skull

Fast, accurate and precise Multi-Planar Reformation (MPR) techniques used in LOTUS inVivo-3D software can show coronal, sagittal, axial and oblique planes in a view with 3D Volume Rendering (VR).

Specifications

- 45 - 90 kV micro-focus X-ray source, 8W, <5 µm spot size
- 3 Megapixels 16-bit X-ray Detector, 2×2 & 1×1 binning modes
- Scanning FOV 80 mm diameter, ~ 200 mm Max. sample length
- 10 µm smallest pixel size

LOTUS-inVivo:

High resolution images with optimized Contrast-to-Noise and dose performance

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