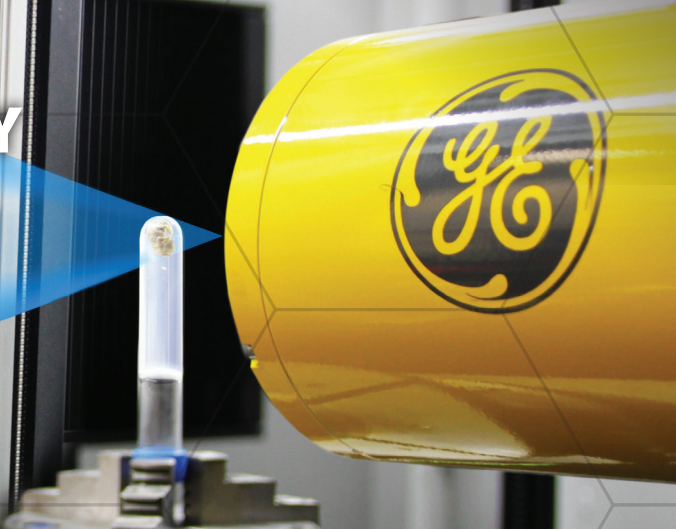


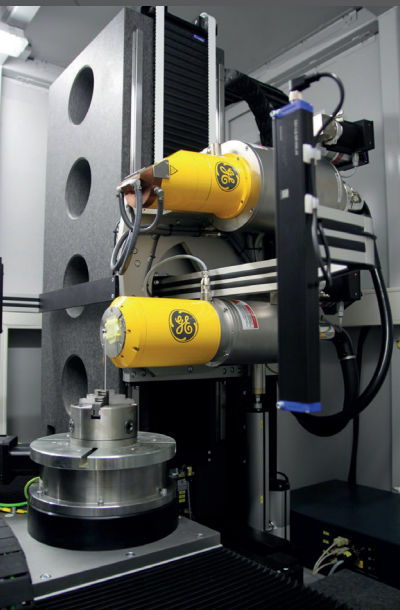


X-RAY MICRO AND NANO COMPUTED TOMOGRAPHY

X-ray computed tomography is an advanced imaging technique capable of non-destructive visualization and analysis of objects. Microtomography allows scanning of the inner structure of three-dimensional objects with high spatial resolution without damaging the object. Complete information about the inner structure of the object in its entire volume may be acquired from the wide range of materials, which is suitable for the detection of the shape of both internal and external structures, inhomogeneities, voids and porosities of the material.



EQUIPMENT



GE phoenix v|tome|x L240

- › Max. object size – Ø500 x 600 mm, (i.e. size of the circumscribing cylinder)
- › Max. weight of the sample 50 kg
- › Max. voxel resolution 1 µm
- › Microfocus x-ray tube 240 kV / 320 W and nanofocus X-ray tube 180 kV / 30 W
- › Flat panel detector, 2048 x 2048 pixels active area (200 µm pixel pitch)

GE phoenix v|tome|x M300

- › Max. sample size: Ø290 mm x 400 mm (i.e. size of the circumscribing cylinder)
- › Max. weight of the sample 50 kg
- › Max. voxel resolution 2 µm
- › Microfocus x-ray tube 300 kV / 500 W
- › Flat panel detector 2048 x 2048 pixels active area (200 µm pixel pitch)

Rikagu Nano3DX

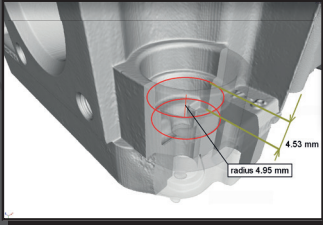
- › Max. object size - Ø 7.2 mm x 5.4 mm (i.e. size of the circumscribing cylinder)
- › Max. voxel resolution 0.27 µm
- › X-ray tube with optional Cr, Co, Mo rotating target material
- › CCD camera, 3300 x 2500 pixels active area (270 nm pixel pitch)
- › Phase contrast imaging (for light materials)

APPLICATION EXAMPLES

- › Mechanical-, material-, electrical- and civil engineering. Development, trouble shooting & reverse engineering, quality and inner/outer shape control of components from plastics, ceramics, light metal castings, wood, etc.
- › Composites and nano-composites (carbon fibers reinforced materials or glass fibers reinforced plastics).
- › Medicine (study of bones or implants), archaeology (museum artefacts, ancient violins), anthropology, restoration, forensic sciences and legal engineering, criminology, food industry, etc. (counting the number of bone fragments in meat products)

3D visualization software „Volume Graphics Studio Max“ with metrology packages

APPLICATION EXAMPLES

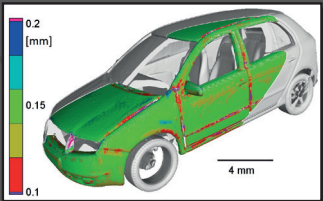
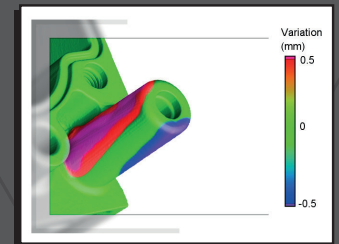


Coordinate measurement module

Geometric dimensioning and tolerancing on the fitted ruled geometries. Measuring positions, distances, diameters, or angles.

Nominal / actual comparison module

Unique tool for the direct comparison of volume data with a CAD model.

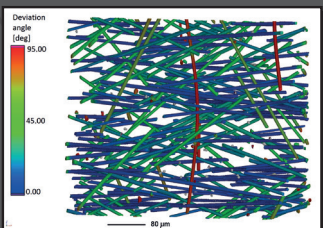
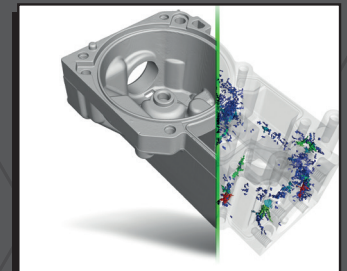


Wall thickness analysis module

Examination of objects for permissible wall thickness in specific areas. It can be also used to analyse a gap width.

Porosity / inclusion analysis module

Identification of material defects with detailed information about each individual defect. Defect analysis according to specification P 201 / VW 50097 and P 202 / VW 50093 can be provided too.



Fiber composite material analysis module

Inspection of fiber reinforced material such as CFRP or GRP for the fiber orientation.

CONTACT

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IN COOPERATION WITH:

AdMaS

Shared laboratory



Shared laboratory



Testing laboratory
(ČSN EN ISO/IEC 17025)



Rigaku application laboratory