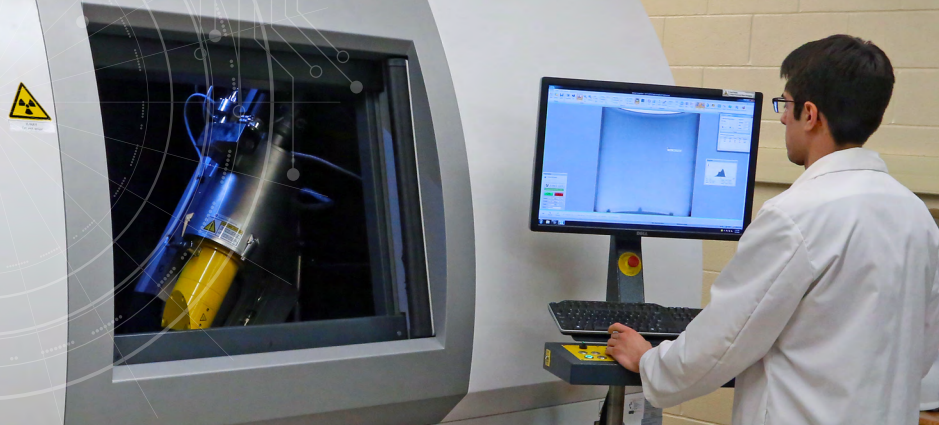




SOUTHWEST RESEARCH INSTITUTE



Industrial X-ray Computed Tomography Engineering and Analysis

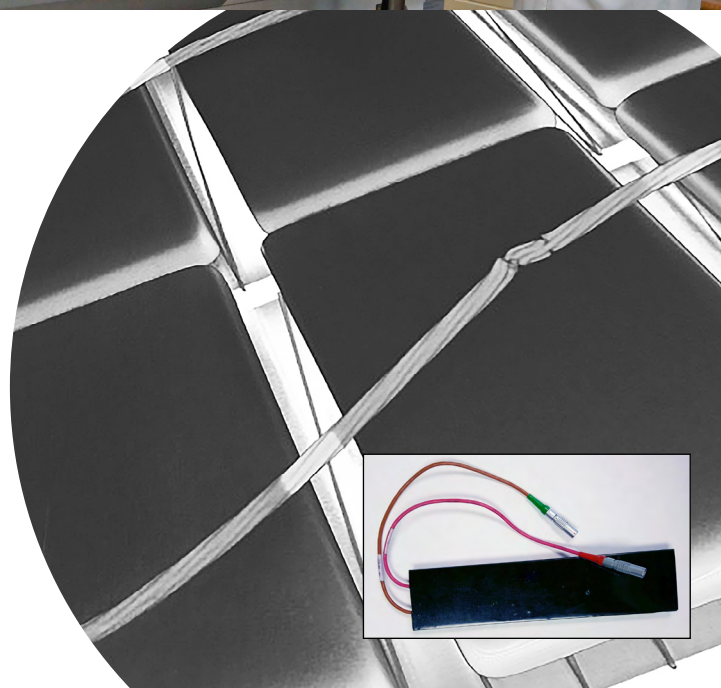
Southwest Research Institute® (SwRI®) offers micro-focus industrial X-ray computed tomography (CT) for nondestructive 3-D visualization and quantification of hidden features in a wide range of materials.

CT imaging is used to locate and size defects, perform dimensional analysis, and discover the cause of failure in mechanical and electronic components. The high-resolution 3-D images, with voxel sizes down to 5 μm , are used to perform precise dimensional analysis for a variety of applications such as manufacturing validation and reverse engineering. SwRI can provide clients with point-cloud and surface renderings of parts that can be read by scientific modeling or design software. Clients are provided with entire 3-D image data sets along with powerful software for visualizing and interacting with data.

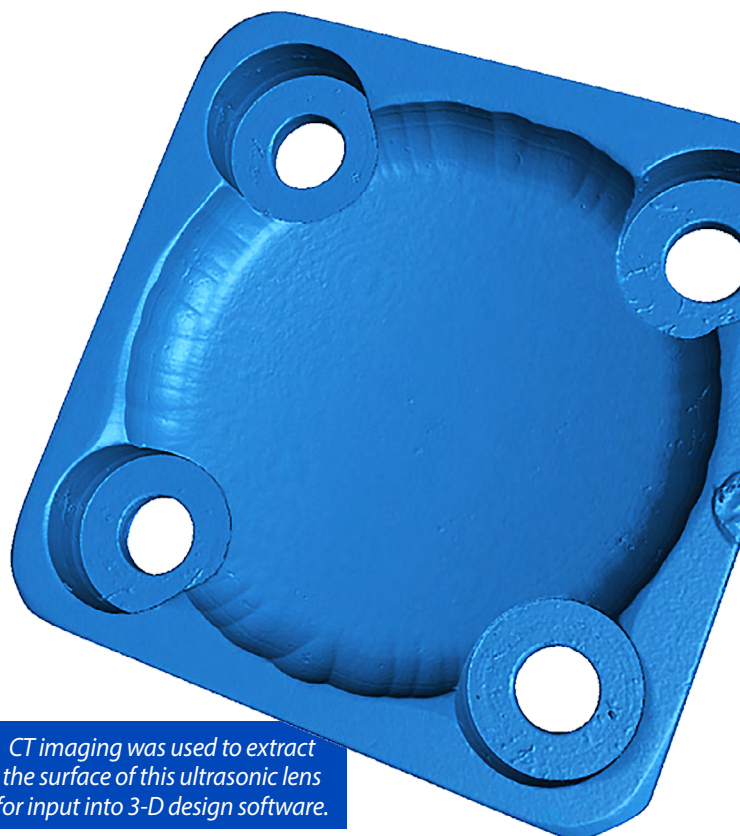
SwRI engineers produce customized imaging and tomographic reconstruction processes to meet specific client requirements. Customized 3-D image processing algorithms can be applied to automate 3-D image analysis.

Applications

- Nondestructive evaluation
- Dimensional metrology
- Manufacturing validation
- Mass density measurement
- Failure analysis
- Imaging of metals, ceramics, polymers, and biologicals



SwRI engineers use failure analysis to detect broken lead wires under opaque epoxy and perform targeted repair.



CT imaging was used to extract the surface of this ultrasonic lens for input into 3-D design software.

X-ray CT System Specifications

- Micro-focus, variable power X-ray tube
- Tube voltage up to 240kV
- Maximum power of 320W
- Image dynamic range of 14 bits

Density variations within this spark plug are easily visualized with computer tomography.

SwRI engineers used CT to visualize undesired pores in this cast aluminum automotive engine component.

Internal ceramic cracking was imaged within a diesel particulate filter.

We welcome your inquiries.
For more information, please contact:

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Southwest Research Institute[®] is a premier independent, nonprofit research and development organization. With eleven technical divisions, we offer multidisciplinary services leveraging advanced science and applied technologies. Since 1947, we have provided solutions for some of the world's most challenging scientific and engineering problems.

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