By the way, are you familiar with our industrial-scale accredited services?

- Accredited laboratory in line with DIN EN ISO / IEC 17025, to qualify and validate new non-destructive testing (NDT) processes for industrial applications
- Accelerated time-to-market and opportunity for qualified, norm-compliant deployment in industrial applications as well as for complete new in-house developments or custom adaptation of innovative NDT technologies, even in fields where norms have not been established
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001

TÜV SAAR CERT ISO 9001

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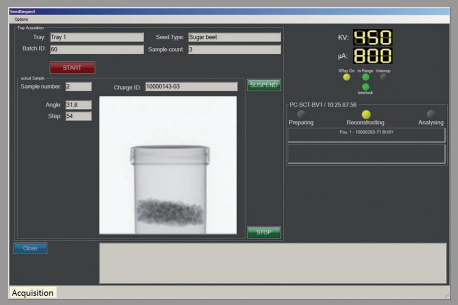
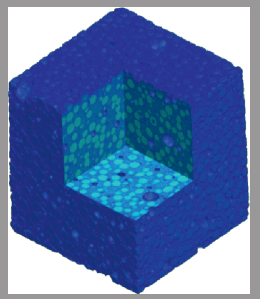
AUTOMATED CT SCANNER FOR SERIES INSPECTIONS

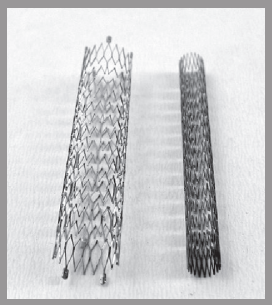
CT Scanner

Sample preparation and scanning



CT scan control monitor





Applications (left to right): roasted coffee in bulk (source: Wikipedia) | heat-resistant concrete: CT volume image | stents (source: Wikipedia)

Automated Series Inspection for Small-batch Production

This CT scanner enables the automated series inspection of various types of materials and components. A large number of samples can be tested within a short timeframe. The system can be utilized to examine material samples, bulk materials and individual objects.

After scanning, the CT system generates a complete three-dimensional volume image of the sample, which can then be analyzed in accordance with various pre-defined criteria. Possible evaluation criteria include volume and volume percentage, wall thickness, diameter, fill level, gaps, densities, number of units and many others.

When inspecting bulk materials and material mixtures, the CT scanner can automatically separate and analyze individual components.

This system can be used to address a wide range of tasks such as determining seed or pore size distribution, characterizing materials (mixture composition, structure, density distribution), determining mixture grades and mixture ratios, examining the dimensional accuracy of large batches of small parts, conducting statistical analyses of structural characteristics (biological or geological samples for instance), or inspecting small to very small technical systems to ensure integrity and completeness.

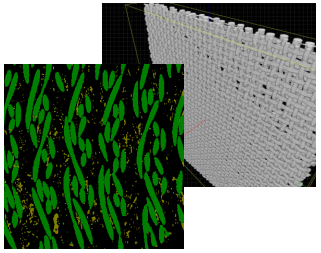
Functional Description

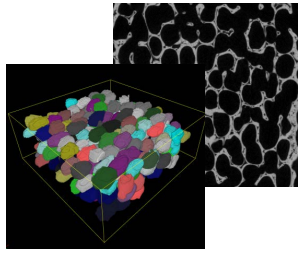
- Small containers are filled with the samples at the preparation station and then placed on a sample tablet. The samples are then identified with a bar code reader or by manual keyboard entry.
- The tablet is placed in the CT scanner, after which the analysis starts
- A Cartesian robot places one sample after another on the CT scanner turntable.
- Once the scan is complete, the system immediately performs a step-by-step analysis of the volume image in accordance with pre-defined criteria.
- The system generates a list containing the measurement values, along with the corresponding predefined criteria.

In the case of more detailed information is required, the system can create cross-sections of a reconstruction or volume images of the individual components.

If needed, preparation of the CT scanner, from tube conditioning to detector calibration, can be automatically initiated or repeated. Apart from the continuous monitoring of the system functionality, quality is assured by periodically scanning and analyzing reference samples by means of quality control charts.

Special tissue





Ceramic foam

CT scan and volume image analysis

Technical data (typical values)

- Maximum tube voltage: 50 – 160 kV
- Geometric resolution: 5 – 100 µm
- Scan duration: 3 – 15 min
- Volume image analysis: 3 – 15 min
- Continuous operation: 24/7
- Maximum scan throughput: 5,000 objects per hour
- Maximum analysis throughput: more than 100,000 characteristics per hour
- Integrated functionality monitoring
- Quality assurance
  - Reference samples
  - Quality control charts