Advantages

- high-precision positioning system capable to position examined objects with the accuracy of ± 1 micron;
- full automation of the X-ray microtomograph, which requires no user intervention in the process of building 3D-models of the examined objects;
- Built-in algorithms for analysis and classification of the internal structure and defects of the object;
- Built-in algorithms for pre-processing of initial undistorted compression data in order to save computing resources of the system

Application

Techniques of digital X-ray tomography provide the possibility to study and examine both organic and inorganic objects, materials and components of electronic equipment, as well as to identify statistical characteristics of composition and structure of the examined samples.

Patents

Patent №2505392, dated April 10, 2012
Patent №2505800, dated May 10, 2012

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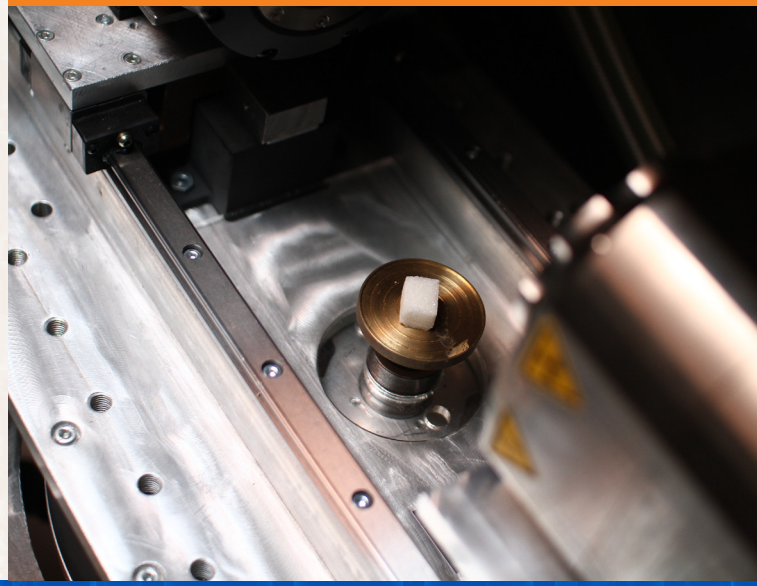

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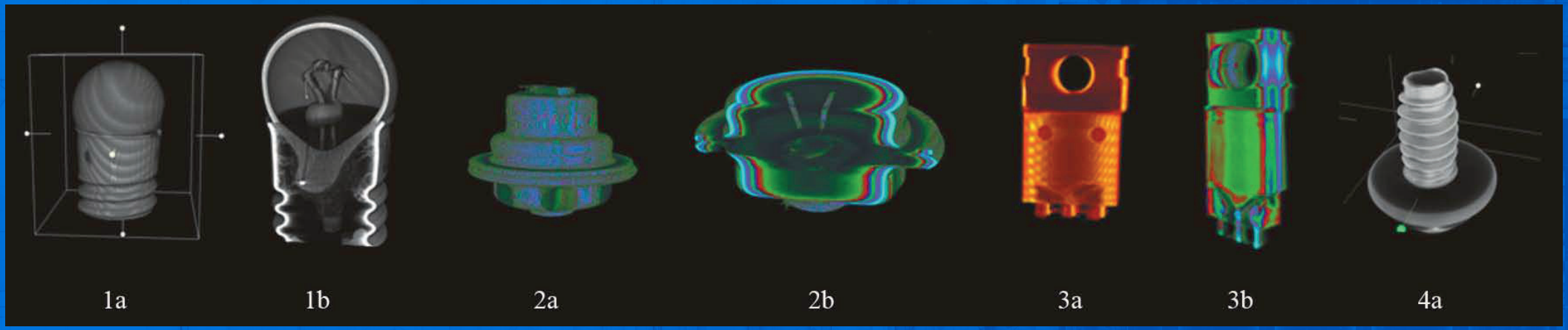
Intelligent X-ray 3D microtomograph



Brief description

Modern science allows analyzing the internal microstructure of objects by means of different methods. X-ray microtomography is one of the best techniques of non-invasive and non-destructive visualization. X-ray microtomography allows obtaining 3D high spatial resolution images of the internal structure of non-transparent objects.

Many sectors of human activity require examination of the internal structure of objects, which are non-transparent in the visible range of electromagnetic emission, especially biological objects of micron resolution. Today, computed microtomography is the primary technique to visualize the 3-dimensional internal microstructure of organic and non-organic objects with the use of X-ray emission. This scanning method visualizes the entire 3-dimensional internal structure of objects and completely preserves samples for other research studies.

Characteristics of X-ray 3D microtomograph

- Capability to distinguish details 1-13 microns.
- X-ray source: smoothly adjustable from 20 to 160 kW, plate current 10 - 250 μA, 10 W, the focal spot size of <5 microns.
- X-ray detector: 4872 x 3248 pixels (if one element is not more than 7,4 x 7,4 microns).
- time for 3D image reconstruction - 30 min / cm^3.
- time for 3D image analysis - 60 min / cm^3