

1.9.2. EXPERIENCE OF “INDINTRO” COMPANY IN INDUSTRIAL X-RAY TOMOGRAPHY

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A long-term experience of INDINTRO Company in the field of industrial X-Ray computed tomography is generalized in the report.

The computed tomography (CT) became for the last decades a conventional technique of non-destructive testing used for development of new technologies and reliability augmentation of most crucial products of aerospace, automotive and defensive industries.

The main application fields of industrial CT systems are quantitative analysis of internal structure of complex meby means of radiography or other traditional methods of non-destructive testing is inefficient. INDINTRO’s unique experience in the field of industrial CT is illustrated by real examples of the test results demonstrating the typical performance capabilities of its CT systems. Here is an incomplete list of testing areas mastered by INDINTRO’s CT systems:

- Measurement of wall thickness of cooled turbine blades of gas-turbine engines;
- Flaw detection of catalyst converters and heads of cylinder block of automobile engines;
- Diagnostics of assemblage correctness of modern ammunition and density deviation of explosives;
- Certification of critical elements of space technique: heat-shielding, fairings, turbine wheels, valves, navigation and pyroelectric devices;
- Defectoscopy of composite nozzles and combustors of solid missiles;
- Non-destructive inspection of composite vanes and elements of aircraft structures;
- Flaw detection of important rubber-cord products;
- Technology development and certification of crucial products made of graphite and carbon fiber.

Flaw detection of complex castings, soldered and welded connections. The CT images of a 2048×2048 format in the report give representation about features of INDINTRO’s industrial CT systems: a wide range of diameters (20 up to 2000 mm), lengths and weights of test objects as well a high spatial resolution (> 50 line pairs/cm) in all energy range of used radiation from 100 keV up to 5000 keV.

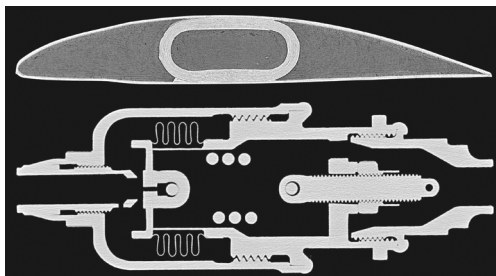


Fig. 1

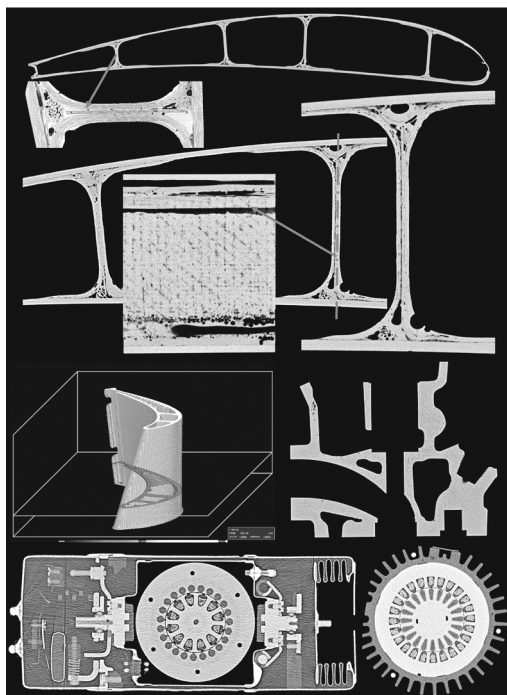


Fig. 2

In the report conclusion, the requirements to perspective radiation sources are formulated and ways of the further perfection of tomographic equipments are analyzed.