

# Apparatus system for quality control in investment casting of aircraft engine critical parts

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## Abstract

The paper presents the concept of an apparatus system, which use 3D scanning techniques, thermal vision and CT to control quality in investment casting processes of aircraft turbo engines jet blades. The aim of the system is to provide a reliable assessment of the ceramic mould in the stages of its production, which is the basis for a decision to withdraw the defective blank or implementation of corrective actions.

Thanks to this approach it is possible to transform special processes producing multilayer ceramic mould to controllable processes.

The paper presents the results of laboratory and industrial experiments, constraints and criteria was also defined. Apparatus system is an integral part of an expert system, which compiled and analysed the results in the individual tests and improved models of interactions, then used for the simulation and processes design.