

## Material Analysis of Nickel Superalloy for Military Technology

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**In the aerospace industry, the nickel-based superalloys are often used due to their ability to withstand extreme conditions. They find their use particularly as turbine blades in jet engines. An important example of this type of superalloy is INCONEL. This construction material must meet a wide range of complex requirements with regard to its properties and technological and operational characteristics that are required by the heavy duty in extreme conditions.**

**The INCONEL Superalloys represent multicomponent and multiphase materials with their complex alloying base and structure with distinct dendritic segregations. Their long life and reliability in operation are directly related to the microstructure, or to its stability in a long-term operational application, respectively.**

**The presented work deals with the evaluation of microstructural parameters at two variants of cast superalloy INCONEL 713LC, applying the light microscopy and electron microscopy, including the fractographic analysis.**

**Keywords:** Nickel superalloy, as cast condition, structural phase analysis, fractography

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