

ABSTRACT

The work contains: 75 p., 13 fig., 13 tab., 45 refer.

In scientific research paper presents an overview of the current state of development of materials for the turbine. The aim is to study the influence of the kinetic parameters of the crystallization process on the structure and properties of alloys of Mo-Si-B.

Research objects: MoSi₂ - MoB₂ alloys Research methods:

- 1) Metallographic analysis (NEOPHOT-21);
- 2) X-ray diffraction (Rigaku «Ultima IV»);
- 3) Determination by macro-stresses «sin²ψ».

The object of the study is the structure and properties of the eutectic alloy MoSi₂ – 18 % (by mass) MoB₂, obtained by the method of uncrucible zone melting at crystallization rates of 1, 2, 3, 4 mm / min.

In this work the technology of obtaining these alloys, their microstructure, phase composition, stress-deformed state of phase components and properties. The influence of the kinetic parameters of crystallization on the microstructure, the stress-deformed state of the phase components and the properties of the alloys obtained by the method of uncrucible zone melting are established.

Keywords: MICROSTRUCTURE, METHOD «SIN²Ψ», UNCRUCIBLE ZONE MELTING, STRESS.