

1. **The foundry of KAMAZ PTC is 50 years old**

HISTORICAL INFORMATION «Half a century in dates and facts»

2. **Marukovich Evgeny Ignatievich (75th anniversary of his birth)**



3. **T.A. Sivkova, S.V. Gubarev, A.O. Gusev, K.V. Nikitin, V.A. Razzhivin, I.N. Petrov. Automated analysis of the structure of aluminum alloys.**

The paper considers some problems of automated control of the macro-and microstructure of aluminum alloys and ways to solve them using SIAMS software. The key features of the technology application aimed at the accuracy of the selection and measurement of control objects are listed. The results of the application of SIAMS software in higher educational institutions are presented. The algorithms under consideration are integrated into the SIAMS software package, are ready-made solutions and can be recommended for serial control of the structure of aluminum alloys in production laboratories.

Keywords: aluminum alloys, structure of aluminum alloys, image segmentation, grain size analysis, determination of phase components in the microstructure, granulometric analysis, analysis of aluminum hydroxide powder particles, layer thickness analysis, gas porosity analysis in cast aluminum alloys, SIAMS software.

4. **I.O. Leushin, O.S. Koshelev, A.Yu. Subbotin, D.A. Gorokhov. Development of a flexible technical scheme for impregnating porous casting with polymer compositions.**

In this article, the authors consider modern methods of impregnating the microporosity of cast parts with polymer compositions. The methods of impregnation of porous products obtained in the casting process are described. The equipment for reproduction of technologies is considered. The authors developed a flexible technical scheme for impregnating cast blanks and described the method of impregnation. The advantages of the new technology in comparison with the basic one are highlighted. The main advantages of the proposed technology are: the compactness of the scheme, since the

impregnation, washing and polymerization is carried out in 1 container; the ability to produce impregnation according to all existing methods without resorting to the installation of additional equipment; fast changeover of existing methods of impregnation in production without large investments.

Keywords: microporosity, impregnation of casting, defects, polymers, metal polymers, casting.

5. **M.A. Druzhevsky.** Lining of induction melting furnaces with materials based on quartzite

We offer acidic packing masses based on SiO₂ quartzite with the addition of boric acid B₂O₃ for the lining of crucibles of induction furnaces, which are developed and manufactured by the Scandinavian concern SIBELCO NORDIC OY AB. The concern has its own raw material base, modern laboratories for the research and development of refractory lining materials for induction crucible furnaces. The manufactured ready-to-use material under the trademark «FINMIX» is a high-quality, economically feasible material for lining induction furnaces for melting cast iron and steel.

Keywords: crucible induction furnace, lining, quartzite, boric acid.

6. **I.V. Kandaurov, V.M. Pixaev, F.F. Kashapov.** Modeling of foundry processes of casting a mold with melt and solidification of large-sized working cast blanks of gas turbine engine blades.

The article is devoted to the calculation and computer simulation of the gating-feeding system for large-sized working blades made of heat-resistant nickel alloy G-NiCr12Co8TiAlWMo (IN792) mod. 5A. Two variants of the gating-feeding system (LPS) are proposed, and the results of modeling the pouring process are presented. Based on the results obtained, the bottlenecks in the production of these castings were identified and ways of solving them were proposed. The proposed version of the LPS can be used for casting large-sized working blades made of heat-resistant alloys.

Keywords: working blade, gating-feeding system, computer modeling, blade lock, heat-resistant alloys, investment casting.

In memory of Mysik Raisa Konstantinovna

