

1. **Panfilov E.V., Gurtovoy D.A., Zakirov E.S., Panov A.G., Pimnev D.Y.** Substitution of imported technological materials, used for production of critical cast iron castings, produced at Foundry plant of OJSC “KAMAZ” .

Integrated program of substitution of imported materials has been developed and is intensively integrated at foundry plant of OJSC “KAMAZ”. Graphitized cast iron modification technology using arc melting by domestic analogues is developed to substitute graphitizing modifier based on ferrosilicon with the content of strontium and zirconium Superseed® Extra.

Key words: import substitution, graphitizing modifier, microuniformity.

2. **Mysik R.K., Brusnitsyn S.V., Sulitsin A.V., Sinitsyna M.A., Bashmakov V.V., Ivkin M.O.** Electron microscope investigation of complex alloyed cast brass structure.

In this paper the results of complex alloyed cast brass CuZn23Al6Fe3Mn2 centrifugal casting microstructure investigation are presented. The microspectral analysis of chemical composition of alloy phases was executed. It is shown that the structure of alloy consists of β -phase and evenly distributed particles of γ Fe-phase. The results of elementwise mapping led to conclusion about distribution of alloying elements in the alloy matrix and dispersed inclusions of ferrous component.

Key words: complex alloyed cast brass, microstructure, phase, electronic microscope, microspectral analysis, map of elements distribution.

3. **Leushin I., Subbotin A., Geyko M.** Recycling galvanized steel scrap for use in cast iron melting in induction melting facilities.

Proposed is technology of preparing galvanized steel scrap for its use as charge material in cast iron melting in induction melting facilities. For protecting steel base from dissolving in acidic medium it is proposed to use as short stopping agent hexamethylenetetramine (urotropin) in the amount 2.5% by weight. Research has been done into dependence of speed of removing zinc from steel base with the initial density of hydrochloric acid 9% by weight on the amount of the processable material. A time slot optimal for processing steel scrap has been identified for the given initial density of hydrochloric acid. The quantity of commercial hydrochloric acid (70 litres) and hexamethylenetetramine needed. Based on the research findings the proposed technology of preparing galvanized steel scrap is recommended to be used in machine building plant foundries where in-house zinc coated steel scrap accounts for at least 1000 tonnes per year.

Key words: technologies of recycling galvanized steel scrap, zinc coated steel scrap, cast iron melting, zinc drawing, chemical refining, induction melting, hydrochloric acid, hexamethylenetetramine.

4. **Savinov A.** Contact pressure during force interaction between a casting and a core.

This paper studies force interaction between a cast cylindrical part and a core. Effect of processing factors, physical and geometrical parameters of the “casting-core” system on contact distributed force along a boundary of its components is shown.

Key words: casting, core, contact pressure, temperature shrinkage, core hardness, modulus of elongation.

5. **Golenkov Y.** Core-making technology and equipment by leading iron foundry in Germany – Fritz Winter.

The article provides an overview of casting production in Germany (volume, characteristics, equipment level), and shows the cooperation experience of one of the big-gest foundries worldwide Fritz Winter and Laempe in delivering of modern core-making equipment.

Key words: Modern technologies of core-making, ColdBox-Amin-process, efficiency factors.

6. **Chernov V., Safonova E.** CHP ash as a refractory filler suspension in the casting.

The study on the suitability of the ash CHP as a filler refractory slurry.

Shows a thermogram ash DSC curves ethyl-silicate gel excipients curves remove carbon and water, studies on binding properties. Recommended, subject to the conditions specified in Article ash CHP application.

Key words: exothermic effect, astringent properties, refractory slurry, hygroscopic moisture, investment casting.

7. **Ivanova L., Naumov V., Chernyshov T., Kuznetsov S** The influence of surfactants on the residual strength and visivamente liquid-glass mixtures.

The influence of the modifying organic and inorganic additives on the residual strength and visivamente liquid-glass mixtures in conditions simulating the formation of the casting. The list of surfactants used and the analysis of changes in the properties idcontainer self-hardening mixtures. The conclusion is that the efficiency of use of certain additives during implementation into production. Keywords: silicate, quartz sand, the liquid-glass slotvideo-based compound, modifier, thermodestruction, silicophosphate glass, the residual strength of visivamente, work knockout

Key words: exothermic effect, astringent properties, refractory slurry, hygroscopic moisture, investment casting.