Editorial board of «Russian Foundryman» magazine

1. **K.V. Makarenko, D.A. Ilyushkin, E.A. Zentsova.** Isothermal hardening is effective method of control of heavy duty cast iron's structure and properties.

The article deals with isothermal hardening, as an eff ective way to control the structure and properties of ductile iron. Presented thermal processing modes allowing to obtain a ferritic-bainitic structure with the purpose of managing its properties. The results of the study of wear-resistant properties of the samples of ductile iron with different types of ferritic-bainitic structure.

Key words: ductile iron, austempering, microstructure, ferrite, bainite, ausferrite, properties

2. **K.N. Vdovin, M.I. Yachikov.** Production of steel rolls by electroslag remelting

The possibility of production of mill rolls by electroslag remelting in a small production. The factors aff ecting the hardness of the working surface of the rolls. Data on the operational stability of the rolls in cold rolling mills.

Key words: steel, roll, electroslag remelting, hardening, forging,casting.

3. **K.V. Nikitin, V.I. Nikitin.** Hereditary infl uence of charge material structure on the propensity of alloy AK6M2 to fl ux treatment.

Infl uence of structure of source charge and species fl uxes on the structure, density and gas content of the alloy AK6M2 (system Al—Si—Cu) was investigated. It is shown that the alloys, obtained from fi ne-crystalline source charge are characterized by a smaller phase components, a lower gas content and high density in the solid state. The conclusion is, that when using coarse-crystalline charge for the preparation of the alloy is required to increase the flow flux of drugs at the stage of treatment of the melt before casting.

Key words: fl uxes, refi ning, degassing, modifi cation, alloys of the system Al—Si—Cu, the structure of the source charge, the parameters of the cast structure, gas content, density.

4. **A.V. Sokolov, V.N. Dyachkov, K.V. Nikitin.** Infl uence of ceramic shells composition on their properties during investment casting nonstick coating for molds and cores.

The influence of aluminum containing slags recycling products and slags, accumulated in the gas-cleaning systems, on properties of ceramic shells during investment casting was studied. Recycling products are formed in rotor inclined furnaces type ALTEK.

Key words: investment casting, ceramic shell, secondary fi reproof material (SFM), silica sol

5. **I.E. Illarionov, I.A. Strel'nikov.** Nonstick coating for molds and corew.

The line of nonstick coatings for molds and cores recommended to use in foundries.

Key words: shapes, rods, nonstick coating, paint formulations.

6. **D.A. Volkov, A.D. Volkov, A.V. Efi menko.** Casting in shell molds and its universality in small batch and commercial production.

The substantiation of application of shell mold casting in small batch and commercial production of castings is given. The advantages of shell mold casting comparing to green sand casting are shown.

Machines for production of shell molds with 600 × 500 mm and 800 × 600 mm pattern plates are suggested. The characteristics of machines are given.

Key words: shell mold, reclamation, pattern plate.

7. **N.D. Feklin, Yu.F. Voronin.**The perspective directions on development of process of production of castings with use of vacuum formation.

The perspective direction of support of processes of production of castings with use of vacuum and fi lm molding is presented. The considered direction is the most environmentally friendly foundry technology, with use of dry sand without binding, a thin facing film, and also pumping out of forms. Use of the considered technology allows to provide high efficiency and ecological purity of technological process both in shop, and beyond its limits.

Key words: vacuum and fi lm molding, advantages in economy and technology, decrease in expenses, a new way of designing of forms, production difficult castings without cores, environmentally friendly process, high precision of the received castings.

8. **S.N. Pankratov, K.A. Batyshev, K.G. Semenov.** The study of cracks resistance of low-alloyed copper alloys.

Study of influence of copper with small additives (0,1—1,0%) of nickel, silica, tin and iron on its cracks resistance is provided in this article. It is shown, that cracks resistance of copper doubles in case of its alloying by up to 1% of nickel and silica. Cracks formation defect is practically eliminated after alloying by 0,4% of tin. Alloying of copper by 0,1—1,0% of iron increases hot cracks formation tendency of copper.

Key words: low-alloyed alloy, cracks formation, shrinkage, crystallization, hot crack.

9. **V.V. Anikeev.** Structual heredity of steel in «electrode—ingot—roll» system.

Results of studies of the phenomenon of structural steels in heredity system «polunepreryvnolitoj—electrode of electroslag remelting ingot—rolled steel». Provides information on the quality of the electrodesand rolled after melting

Key words: steel, semi-continuous casting, electrodes, electroslag remelting, ingots, bars, heredity, quality.

10. **M.A. Borovykh, O.A. Chikova, V.S. Tsepelev, V.V. Vyukhin.** Influence of non-metallic inclusions on casting properties of liquid steel 32G2.

The study of viscosity, density and surface tension of liquid steel 32G2 has been carried out. The samples were selected from the fi nished oil and gas pipes, and are characterized by varying degrees of defectiveness. The conclusion about the nature of defects influence, registered by magnetic powder and ultrasonic methods, on the nature of the temperature dependence of the viscosity, density and surface tension of liquid steel 32G2, has been provided.

Key words: oil and gas pipes, steel, defects, molten metal, viscocity, density, surface tension, microinhomogeneity.