

1. **Dibrov I.** Production of castings in the BRICS countries.

The article contains information about main tasks and conditions of Foundryman society of BRICS countries. Status of castings production in BRICS countries in general and in each country separately.

Key words: BRICS, Foundryman society of BRICS countries, Castings Alloys, iron

2. **Kolokoltsev V., Beriozova S., Ivanova I., Koscheev P.** Modeling of solidification of castings after high melt processing.

Presents the studies to determine the regularities of structure formation step casting exposed high-temperature melt processing using the model of the sodium thiosulfate.

Key words: modeling, sodium thiosulfate, crystallization, crustal zone, zone of columnar crystals.

3. **Markov V., Koshelev O., Plokhov S.** Solid and liquid solutions in metal systems.

This paper addresses the mechanism of formation of adsorption-type surface solutions in metal systems and its principle difference from the mechanisms of formation of absorption-type substitutional solutions and interstitial solutions. Information suggested in this paper corrects and develops the alloying theory, as well as contributes to a better understanding of the processes occurring in solid and liquid metal systems during their phase transformations.

Key words: metal system, substitutional solution, interstitial solution, surface solution, alloying, solid solution, liquid solution.

4. **Safronov G., Kharisov L., Bikulov R.** The properties of cement strong sand with the use of slag of SHS ferroalloy producing.

The study presents the construction of a linear approximation of the response functions (the strength of strong sand in tension and gas permeability) in a given range of changes of the studied factors, in the capacity of which charge makeup of the production process of SHS ferroalloy and content of the slag product of this process in the strong sand are used. The analysis of the significance of the regression coefficients of the objective function is carried out to identify the most important input parameters.

Key words: strong sand, cement binder, slag, aluminous cement, strength, scale, chips, SHS process.

5. **Koltygin A., Chupeeva A.** Investigation of the parameters of gating feeding system on the filling and solidification of the thin-walled castings of magnesium alloys.

The influence of parameters of gating systems for a thin-walled castings of magnesium alloys. Selection of types of gating systems implemented by the example of a typical thin-walled castings «Framework». Calculation of filling and solidification was conducted in the computer simulation of casting processes ProCAST. Propose the optimum scheme of supplying metal for typical thin-walled cylindrical hull casting of magnesium alloy ML10.

Key words: gating system, thin-walled casting, magnesium, simulation, ProCAST, porosity.

6. **Zinoviev Yr., Kolpakov A., Kuznetsov S., Shvetsov V., Belyavsky G.** The possibility of increasing operational properties of cast distributing shafts.

Overview of the technologies of producing cast distributing shafts is given; new method of producing the wearing qualities by introducing new calcium-sulfur additions is suggested.

Key words: casted camshafts, chilled cast iron, performance.

7. **Firstov A.** Investigation of the structure of alkali silicates titrimetric method.

This work aims to make a clear picture in the microstructure alkaline solutions of sodium silicate. Will be useful for specialists foundry binder for making molds and bars in the construction industry for the production of heat-resistant and refractory concretes, in the paint industry as a film former consisting of silicate paints.

Key words: alkaline silicate, titration, SiO₄-tetrahedron.

8. Joerg Abraham, Carola Tretner. Modern investment casting waxes: Relationship between the characteristic.

Relationship between the characteristic. A constant process control in an investment casting foundry working on a high quality level requires a sufficient transparency regarding the determination of technical data of raw materials and pattern waxes and the validation of constant qualities of the used raw materials. Some arguments for new strategies in the raw material management in foundries will be given in this short paper. The company ROMONTA introduces as a powerful supplier and developer for investment casting waxes.

Key words: Investment casting, Pattern wax, Raw material management, ROMONTA.

9. Shvetsov V., Kulakov B. The quality of castings and efficiency of their production.

The paper is devoted to the actual topic about the quality of castings and related with it production efficiency. The paper shows that the method of calculating the efficiency based on the increase of technological prime yield has some drawbacks which hide the true effect: material and financial. The new method of calculating of metal saving and casting production efficiency based on the increase of technological prime yield is presented.

Key words: casting, quality, technological prime yield, calculation, method.

10. Demidovich O. Temperature sensors JSC Scientific-Production Enterprise «Etalon» and their practical application.

Considered various designs of thermocouples and thermometers produced JSC Scientific-Production Enterprise «Etalon» for measuring the temperature of objects in various industries.

Key words: temperature, Reference measuring tools, RTD, thermocouple