1. **Sluzov A., Sedunov V., Korovin V., Leushin I.** Improving the process of modifying ductile iron.

The most promising area nodularization now is the use of a new method of introducing a modifier in the form of cored wire. For lighting technology features modifying melt processing of powder wire shows the results of experimental work on the production of high-strength synthetic Chugai ladles on small capacity up to 200 kg .In addition, the article discusses the effectiveness predsferoidiziruyuschey processing molten iron carbonates.In the optimal mode of modification (proposed version of melt preparation and nodularisation) significantly improves the mechanical properties and stability is provided by modifying effect.

Key words: ductile iron, modification, wire modifier, melt, predsferoidiziruyuschee modification, carbonates, structure, mechanical properties

2. **Dubrovin V., Kulakov B., Karpinskiy A., Goikhenberg Y.** The choice of molding materials for casting using disposable models.

The analysis of properties of different binding materials and refractory fillers is given in this article. The recommendations for application of binding materials and fillers depending on type of casting process, material of casting and conditions of ceramic mold pouring are provided.

Key words: ceramic molds, lost wax and burnout models, ethyl silicate and sodium silicate binders, refractory fillers

3. **Firstov A.** Macro- and microstructure of hardened liquid glass.

There are plenty of sources on the description and the explanation of complex patterns curable liquid glass not only in the foundry industry, but also in the oil industry, crystallography, physical and colloidal chemistry. In article attempt based on the studies listed in the article the authors explain the regularities and clarify the structure on the basis of calculations by the method of packing of spheres.

Key words: liquid glass, structure, regularity, packing of balls.

4. **Minaev A.** The nonlinear differential equations as the characteristic of the dynamic patent systems.

Characteristics of dynamic patent systems are provided with the nonlinear differential equations. Use of a technique of a joker and the course allows to reveal areas of probabilistic emergence of basic patents by means of phase trajectories.

Key words: Evolutionary dynamics, nonlinear differential equations, dynamic patent systems, phase trajectories, basic patents, jokers and courses

5. **Ten E., Khanin D.** Study of process the components of soldering copper alloy extraction from smelting slag.

It is considered the problem of processing the forming during the Copper alloy melting slag, which consist from the metallic part and non metallic component. On the example of processing he slag, which are formed during the solder Copper alloy 211, it is shown this is must be effective realized on the forming 0place by method of separating and reducing smelting with using of induction furnace. The separating smelting treat the initial slag, in this case the metal output is 50 % from its mass. The reducing smelting treat the secondary slag, which formed from initial slag nonmetallic component, in which the Copper alloy components is assist at chemical compounded consist as oxides.

Key words: copper casting slag, metal extraction, reducer, flux, activator, seedt

Krivolapov D., Nikitin V., Nikitin K. Modification of aluminium and magnolia microcrystallites-kimi alloys containing transition metals.

Investigated influence of microcrystalline modifiers (AlTi10, AlTi5, AlZr10, AlZr4, AlSc2) on a macrostructure of A95 aluminum and alloy AMg4,5. Large volume of experiments on application of microcrystalline aluminum ligatures with transitional metals is carried out. The most effective modifiers for aluminum and alloys of Al-Mg system on the basis of the electronic theory and regularities of structural heredity are revealed.