1. **K.N.Vdovin, M.V.Shubina.** Formation of inclusion of compacted graphite in gray iron during investment casting.

The possibility of obtaining compacted graphite iron casting in the meltable at a snap. Castings were graphitizing annealing at 950—1000 °C of 8, 4, 2 and 1 hour with air cooling (normalizing). We found that the conditions of crystallization and cooling of the die mold with meltable snap favorable for subsequent acceleration of graphitization during high-temperature annealing. The most effective is annealed for 2 and 4 hours, allowing a small and uniformly distributed in a pearlite matrix graphite inclusions.

Key words: cast iron, equipment, annealing, melts the rod, graphite.

2. **I.A. Filippova, V.E. Khaichenko, N.S. Gerasimova.** The improvement of mechanical properties of steel 45L by means of modification.

Modification by complex alloys, containing Al, Ca, rare earth metals of cerium group and nickel, was used to improve the mechanical properties of steel 45L. Treatment of steel by complex modifiers allowed to produce fi ne-grained structure of steel, to improve its mechanical and operational properties and to reduce costs as annealing was included from technological process.

Key words: complex modifiers, deoxidation of steel, annealing, thermal treatment, strength, ductility.

3. **I.E.Illarionov, A.V.Motkov, S.V.Ivanov, S.E.Sokolov, Y.Y.Agateev**. Application of automated system

of casting processes simulation in design of gating systems.

Analysis and selection of optimum gating system using computer-aided simulation of the of castings formation MAGMASoft.

Key words: the elements of gating system, computer aided simulation of castings formation processes, shrinkage cavities, solidifi ca-tion, temperature distribution.

4. **L.A. Molodyh.** Insulation in profitable parts of ingots.

The article deals with the problems of defects in the production of steel ingots: classification of defects and their causes. Methods for elimination of defects are explored, their advantages and disadvantages. Effectiveness of application is formulated; the characteristics of heat-insulating and exothermic inserts by «Fibrous refractories are shown.

Key words: defects of steel ingots, warming the hot-top ingot, exothermic and insulating inserts.

5. **V.V. Andreev, D.A. Gorlenko.** Conditions for formation of graphite in bleached working layer of mill rolls produced by centrifugal casting.

The results of research to identify the conditions for formation of graphite in bleached working layer of mill roll produced by centrifugal casting are given. It is shown, that in the range of eutectoid transformation partial graphitization of cementite happens in work-ing layer with the appearance of the structure of annealed graphite during slow cooling of roll in a mold after pouring of core part. The area occurred by graphite for the whole depth of working layer is less
than 3% and such minimum quantity of graphite is technologically inevitable and does not have any significant effect on the operating resistance sheet rolling rolls.

Key words: mill roll, cast iron, graphite, working layer, core, structure.

6. **V.I. Nikitin, K.V. Nikitin.** The contribution of Foundry Department of SamSTU and SB RAF to the development of foundry and metallurgical production in Samara region.

The contribution of «Foundry and high efficient technologies» department of SamSTU and Samara Branch of Russian Association of Foundrymen to the training of engineering and scientific staff , carrying out research work, scientific and technical activities in foundry
of Samara region during 2014—2015 is shown.

Key words: foundry department, research work, personnel training, SORAL, cooperation with foundries.

7. **Melnikov.** Start of the new Seiatsu molding line by HWS-Sinto (Germany) for complex thin-walled castings at the Olsberg foundry (Germany).

The article deals with application enhancement of Seiatsu tech-nology for production of the most complex thin-walled castings in green sand, including «electric motor housing». Production history of Olsberg foundry with modern molding Seiatsu equipment.

Key words: modernization, effective foundry production, import substitution, production of especially complex castings, Seiatsu-process, molding line