1. **Soshkin V.E., Molodikh L.A.** The increase of castings quality while applying exothermal inserts

Exothermal inserts for castings feeding systems are presented. They provide release of considerable quantity of heat as a result of redox reaction while contacting liquid metal at riser. Exothermal heating of casting`s riser favour the decrease of riser size, the increase good castings percentage, the increase of density and mechanical qualities of castings metal.

**Key words:** exothermal inserts, castings quality.

1. **Shtetsel R., Potaturina E., Lappat I., Forrat M.** The optimization of covering application by means of hot spraying instead of using brush.

A new method of nonstick covering application to molds and cores by means of hot spraying is shown. This method is used instead of application of covering by pouring or by means of brush. But spray painting method has several limitations besides advantages. It is necessary to optimize the application method, the parameters of covering and the adjustments of spraying unit for every assortment of production in order to produce castings with satisfactory results.

**Key words:** method of covering application, hot spraying.

1. **Monastyrskiy A.V., Tikhomirov M.D.** Casting processes simulation system «PoligonSoft». Its review, resume, and plans.

The article describes casting processes simulation system «PoligonSoft», version 13.4, released at the beginning of this year. The review of recent achievements and further plans are provided.

**Key words:** simulation system, casting processes.

1. **Alexandrov M.V.** About the thermal conductivity increase of low-alloyed heat-resistant cast irons.

Graphical models of the dependence of gray cast iron thermal conductivity of the parameters of the microstructure, carbon equivalent, the content of carbides and porosity of the castings are presented. Technological regimes of heat-treatment of the melt increasing the thermal conductivity of cast irons by reducing the gas saturation of the melt and the content of carbides in the structure are shown.

**Key words:** cast iron, thermal conductivity, microstructure, carbon equivalent, heat treatment.

1. **Nyuberg K.Y.** High duty cast iron production using Sandwich-process

The principles of high duty cast iron production, using Sandwich-process for elimination of structural quality deflections, are described.

**Key words:** high duty cast iron.

1. **Boldyrev D.A.** The study of influence of temperature-time parameters of grey cast iron graphitizing modification process on its structure and quality factors.

The article provides the research of influence of changes in modification degree of cast iron melt, depending on temperature and time parameters, during the production of castings 11193-1002015 «cylinder block» according to operating technological process in cast iron foundry of OJSC «AVTOVAZ» on the microstructure parameters and mechanical qualities. It is proposed to use the quantity of interdendritic distribution of graphite in the microstructure of cast iron as a parameter, characterizing the effectiveness of graphitizing modifier and the way of its introduction into molten iron. The interaction degree of modification, the rate of cooling in the mold and overcooling degree of the melt iron are analyzed.

**Key words:** grey cast iron, cylinder block, modification, microstructure, cooling rate, overcooling degree.

1. **Guriev M.A., Fil’chakovD.S., IvanovS.G., GurievA.M., DeevV.B.** Technology of hardening of steel products in the course of moulding.

The description of the production technology of wear proof steel details is provided in work by a molding method on gasifiable models on the example of a product - an angular knife for the K-700 tractor used in road construction.

**Key words:** molding, hardening, steel, gasifiable model.

1. **Pavlinich S.P., Mysik R.K., Zaitsev M.V., Bakerin S.V., Khairullina A.M.,Brusnitsyn S.V., Sulitsin A.V..** The choice of design and calculation of gating system elements for producing cast low pressure turbine blades

Features of design and calculation of gating system for castings by investment casting are considered. The gating system for producing of cast low pressure turbine blades using different computing methods was designed and calculated.

**Key words:** lost wax casting, gating system, cast blade, centrifugal casting, intermetallic titanium alloy.

1. **Benz N., Forberg K.** Ecological no-bake furan resins with free furfuryl alcohol concentration less than 25%.

“Uralkhimplast – Hüttenes Albertus” company starts the publication of articles about binders and additional materials for foundry. The aim of these articles is to tell about modern materials for their application in all molds and cores production processes, about the improvement of their technical and practical qualities and about the development of existing materials and completely new directions.

**Key words:** materials for molds and cores.