

## Nikitin Vladimir Ivanovich

(to the 80th anniversary of his birth)



On February 23, 2022, Vladimir Ivanovich Nikitin, Professor, Doctor of Technical Sciences, Head of the Department of Foundry and High-Performance Technologies of Samara State Technical University (SamSTU), Chairman of the Management Board of SO RAL, celebrates his 80th birthday.

The Russian Association of Foundry Workers, the Editorial Board of the magazine "Foundryman of Russia", colleagues and friends cordially congratulate Vladimir Ivanovich on his anniversary, wish him health, well-being and further creative success!

1. **D.A. Boldyrev, L.I. Popova, S.G. Prasolov** Reduction of consumer defects of brake drums by heat treatment and micro-alloying with sulfur

Information is given about the material, the technology of mechanical processing of brake drums and the associated operational defect «noise/knock of the rear suspension». The effect of annealing (artificial aging) and an increase in sulfur content as a micro-alloying additive are investigated as measures to reduce this defect, and their capabilities are shown.

**Keywords:** brake drum, machinability, artificial aging, noise/knock of the rear suspension.

2. **I.Takhetsi, V.V. Korobeynikov, S.S. Tkachenko** Reduction of heat losses of liquid metal is the key to the efficiency of foundry production

Methods and equipment for saving energy costs (gas and electricity) during melting and casting of foundry alloys are given. It is shown that the greatest heat losses of metal occur in the ladle from the moment it is released from the furnace to pouring. The development of modern thermal furnaces of the TASNTESN s.r.o. company guarantees a reduction in energy consumption by 30—50%, allows to increase labor productivity and reduce marriage.

**Keywords:** energy consumption, gas, temperature, bucket, stand, thermal furnace.

3. **K.V. Nikitin, V.I. Nikitin, I.Yu. Timoshkin, A.Yu. Barinov, V.A. Vartanyan** Improvement of production technology of chill casting «Hull» from alloy AK9ch

Using the example of the coquille casting «Hull» made of AK9ch alloy, it is shown that the use of automated modeling systems for casting processes and modifier of the working alloy with microcrystalline remelting to increase the efficiency of aluminum casting production.

**Keywords:** silumins, chill casting, automated modeling systems for casting processes, microcrystalline remelting.

4. **I.A.Melnikov** The quality of one-time sand-clay molds according to Seiatsu technology is a process on the AFL of HWS-Sinto

The article provides information on the modern method of compaction of greensand molds using Seiatsu-process in comparison with other molding methods, which have significant limits in their properties. Examples of applications, advantages and actual samples of molds for difficult castings are described.

**Keywords:** modernization of foundry production, Seiatsu-process, quality of greensand molds.

5. **O.I. Cheberyak, M.A. Geyko** Determination of the gap size in the pressing unit of LPD machines with a horizontal cold pressing chamber

The analysis of working gaps in the pressing unit of LPD machines with a horizontal cold pressing chamber is presented.

**Keywords:** injection molding, pressing unit, pressing chamber, pressing piston.

6. **K.G. Semenov, V.V. Chernov, K.A. Batyshev, S.N. Pankratov** Modeling of the technology of coquille casting of low-alloy copper alloys with iron

The paper presents a computer simulation of the technological process of manufacturing castings by the method of coquille casting based on low-alloy copper alloys using ProCAST. To compare the results, modeling of the casting technology of technically pure copper M1 was carried out. The adequacy of the created models was assessed by physical modeling of the casting technology of similar castings.

**Keywords:** low-alloy alloy, copper, iron, computer modeling, technology, initial parameters, results.