

**1. Belov V.D., Dibrov I.A., Belov N.A. Production of aluminum castings in Russia, its current condition and development perspectives.**

The article provides the analysis of current condition and development perspectives of aluminum castings production at native enterprises. Particular attention is paid to the latest developments of Russian scientists and specialists. The ways to overcome foundry problems in the range of world manufacturers are given and the ways of professional rapprochement and cooperation between foundrymen of Russia, BRICS countries and the states of Europe and the United States.

**Key words:** Russia, BRICS, aluminum castings, foundry.

**2. Popov A. Laempe technologies and equipment in Brazil and Mexico.**

The article gives an overview of foundry production in the Latin American countries – Brazil and Mexico, incl. casting outputs and distribution by alloys. The situation allows to draw a conclusion on stable development of the foundry production market in these countries and modernization of foundries on the basis of modern core solutions.

**Key words:** production of cast automotive components, innovative coreproduction technologies, Cold-Box Amine-process.

**3. Fadeev A.V., Bazhenov V.E., Belov V.D., Petrovskiy P.V., Pavlinich S.P., Alikin P.V. The peculiarities of thin-walled castings production of titan alloys for gas turbine engines by means of modelfree technology.**

Let's consider the possibility of solid low profile sow castings of titanium alloy in the form of graphite. The form simulated in a computer program ProCast. Production was carried out on ChPU milling machine.

**Keywords:** with out model technology, titanium alloys, simulation.

**4. Renato Polelli. Highly efficient application of vibratory equipment in a modern foundry.**

The leading world-class manufacturer – “Vibroprocess” company, representing its own equipment, explains the high importance of application of its equipment in foundries, primarily, for increasing productivity and improving working conditions. The characteristics and operating principles of each equipment type are given.

**Keywords:** vibroprocess, shake-out unit, vibrating loaders.

**5. Flaminio Champa. Environmentally friendly reclamation of molding sand.**

The basic aspects of the reclamation unit application and the technological features of the molding sand reclamation process, as well as ways to improve the quality of the reclaimed material for use in foundries, are discussed in this article. The characteristics of some types of fluid bed furnaces, designed and manufactured by Fata Aluminum company, are given. Economic calculation of reclamation cost is carried out.

**Key words:** reclamation, cold-hardening mixture.

**6. Goudkov I. Jucharev Y. Features of influence of the characteristics of foundry quartz sand for quality of the castings.**

Features of researching of foundry quartz sands in different areas of Russia. Some recommendations were given in according of technological process in foundry.

**Key words:** foundry quartz sand, quartz.

**7. Grachev V., Solomonidina S., Durina T. The application of hudrogen fuel in gas melting unit.**

The application of hydrogen fuel in shaft furnaces of foundry production allows to melting the charge materials with high melting point. The addition in the combustion products of carbonaceous substances reduces energy intensity of the melting process and helps to reach the rise of temperature, to reduce fuel consumption, to increase productivity of melting furnace.

**Key words:** hudrogen, gas cupola, carbonaceous substances.

**8. Dobrynina A. Microalloying of structural steels by aluminum.**

Microadditives influence of aluminum on mechanical properties and structure of low carbon structural steel is positive. On the basis of experimental studies, the optimal concentration of aluminum in the steel and explained the mechanism of action of this element on the properties of steel.

**Keywords:** steel, aluminum, microalloying, strength, ductility, toughness, precipitation hardening,

**9. Vdovin K., Pivovarova K., Zaitseva A.** The study of structural transformations in chilled cast iron during tempering by method of thermal analysis.

The kinetics of martensite tempering in chilled roll cast irons is studied by differential scanning calorimetry. The temperature intervals of martensite and retained austenite decay are determined.

**Key words:** roll, cast iron, martensite, austenite, tempering.