1. **A.A. Kuznetsov, D.A. Boldyrev.** Cleaning with SCHZM carbonatites of the main lining of the electric arc furnace during cast iron melting

The article describes the developed method of cleaning the main lining of the electric arc furnace during iron smelting, carried out by introducing the main lining of the electric arc furnace, heated not lower than 700 °C, onto the bottom, barium-strontium carbonate forming a liquid moving slag phase between the hearth and the charge; preventing sticking, applying the components of the charge to the lining, neutralizing silicon dioxide due to reaction with it and increasing the basicity and operability of slag on the surface of the molten iron bath in an unreacted form, qualitatively improving the processes of desulfurization and assimilation of graphite.

Keywords: carbonatites of alkaline-earth metals, refining, degassing, lining cleaning, slag

2. **V.A. Ivanova, E.O. Pobegalova.** Infl uence of transportation distance on selection of a foundry coke supplier.

The paper studies the influence of transportation distance on foundry coke destruction. Foundry coke properties influencing on its destruction during transportation, as well as conditions of the supplier's choice and the forecast of changes in the granulometric composition of foundry coke when it is delivered by railway transport are determined.

Keywords: foundry coke, selection of supplier, transportation, strength, ash content.

3. **A.A. Silaev, N.A. Silaeva, A.Yu. Loginova, A.K. Gorbunov**. Envestigation of side vehicle infl uense on compact samples on correctness of defi nition of fracture toughness characteristics.

The article presents materials on experimental studies on static crack resistance and theoretical calculation of the stress-strain state in compact specimens 25 and 50 mm thick from low-alloy structural steel. According to the results of the studies, it was found that in the transition temperature region there is no difference in the values of the critical stress intensity factor K1C, determined when testing smooth compact specimens and specimens with lateral notches (tested at the same temperature).

Keywords: low alloy structural steel, static crack resistance, compact specimen, side notched specimen, finite element method.

4. **Paolo Magaldi.** Magaldi's state-of-the-art casting cooling technology: the experience of the Pilenga Baldassarre foundry.

The article describes the most modern conveyor line for knockout and cooling of castings using the MCC® (Magaldi Casting Cooler) technology. This system is applicable to absolutely all types of foundries and is most effective in the use of high-performance molding lines. The cooling system is based on the Superbelt® conveyor - a metal plate conveyor assembled on a metal mesh - in fact, operating on the principle of a belt conveyor. The MCC® system works reliably even under the most severe conditions.

Keywords: cooling of castings, conveyor line, metal mesh

5. **F.I. Rudnitskii, S.A. Kulikov, V.A. Shumigai .** About diff erences of ultra dispersed modifi ers from their macro-sized analogues.

The article discusses the issue of modifying gray iron melts with ultrafine modifiers. Theoretical models of dissolution of ultrafine particles are presented from the standpoint of classical and nonequilibrium

thermodynamics. It is indicated that a distinctive feature of ultradispersed modifiers is not only an excess of surface energy, but also the ability to influence the melt at the level of « fast» local processes.

Keywords: Gray cast iron, modification with dispersed additives, structure, properties.

6. **Yu.A. Nikalaichyk, S.L. Rovin, Yu.Yu. Huminski, S.N. Lejnev, N.A. Svidunovich, D.V. Kuis, A.S. Rakovets.** Experience and prospects of using nanotechnologies and nanomaterials in foundry production.

Various aspects of the use of nanotechnologies and nanomaterials in foundry production, the results of research and development in this area by Belarusian and Kazakh specialists are presented, in particular, the use of nanodispersed carbon-containing materials for modifying silicate binders, mechanical activation and improvement of physical and mechanical properties of clays and refractories as a result of their dispersion, the use of nanostructured additives, including those obtained from technogenic waste, in non-stick paints and coatings, nanomodification and nanoalloying of aluminum and iron-carbon alloys.

Keywords: nanomaterials, nanotechnologies, modification, doping, dispersion. Keywords: nanomaterials, nanotechnologies, modification, alloying, dispersion.

7. **Yu.Yu. Huminski, S.L. Rovin, O.A. Rusevich.** The prospects of the use of vacuuming for curing sodium silicate bonded sands.

The main areas of application of vacuum processing in foundry, metallurgy, chemical, food industry and other areas of economic activity are presented. The technique is given and the results of the research on the effect of vacuuming on the curing processes and properties of sodium silicate bonded sands are described.

Keywords: sodium silicate bonded sands, vacuuming, CO2-process, knockout, environmental friendliness.

8. **K.A. Batyshev, A.I. Zinovieva, K.G. Semenov, V.A. Khovanskaya, M.G. Georgievsky** . Possibilities of obtaining heat-insulated casting tooling using the method of micro-arc oxidation.

The article discusses a method for obtaining heat-insulating wear-resistant coatings on the surface of casting equipment from aluminum alloys.

Keywords: micro-arc oxidation, wear-resistant coating, foundry equipment.

INFORMATION

What, where, when, who, to whom, how much, why?

1. On holding the XV Congress of Russian Foundry Workers and the BRICS International Foundry Forum
2. International Exhibition "LITMASH-2020"