

Contents №1.2011

1. **Abramov V.I., Shniderman S.M., Panphilov E.V., Mikryukov V.M., Gazizov R.R., Bikanov V.F.** Inoculation of high duty cast iron in ladle by powder wire in foundry production conditions on JSC «KAMAZ-Metallurgy»

Noted the methodologies of cast iron inoculation used on Foundry plant JSC «KAMAZ» during introduction of high duty cast iron casting production. At present time the 80% of high duty cast iron with globular graphite castings are produces by ladle inoculation with powder wire.

Key words: *high duty cast iron, inoculation with powder wire.*

2. **Gimadeev N.F., Gutovoy D.A., Koshelev A.V.** The experience of «Crankshaft» casting by pearlitic high duty cast iron with globular graphite without heat treatment.

The «Crankshaft» casting production technology is developed which allow to achieve the necessary mechanical properties and microstructure in casting without heat treatment. The base of this technology is the ladle inoculation with powder wire.

Key words: *microstructure, ladle inoculation with powder wire.*

3. **Nikulin I.V.** Innovation technologies in melting and pouring of metals from company Otto Junker – the world leader in production of induction furnaces for metals melting and holding. The innovations of company Otto Junker GmbH in melting, pouring and holding fields are presented.

Key words: *induction furnaces.*

4. **Peshkin R.V.** High_quality German materials for lining of induction furnaces.

Represents refractory materials of company Doerentrup for lining of induction furnaces, channel furnaces, pouring furnaces, holding furnaces, transport and pouring ladles and also tools for making lining.

Key words: *refractory, induction furnaces.*

5. **Chaykin V.A., Chaykin A.V., Volnov I.N.** Late inoculation process modeling.

In the article is revised the late inside mold inoculation of steel and cast iron melts by fine_dispersed silica powder and graphite with addition of Mg_comprising compounds. The inoculation process modeling is performed with usage of Flow-3D program. The usage of blended inoculator MKMg19 is allowed to eliminate the chill defect in cast iron castings on JSC «AutoVAZ» and reduce the shrinkage defects in steel castings on JSC «Cheboksarskiy aggregate plant».

Key words: *inside mold inoculation, blended inoculator, computer modeling, Flow_3D, chill defect, microstructure.*

6. **Zhivaev I.V.** Dust collectors for foundry with compact sleeve type filters of ECO INSTAL HOLDING

For elimination of dust in a foundry company OOO «PO ECOTECH» proposes sleeve type filters of compact design. Describes advantages of such filters.

Key words: *dust elimination, sleeve type filters.*

7. **Olsen S.O., Hartung C.** Magnesium adoption in production of high duty cast iron.

Magnesium residual content and adoption rate in cast iron treatment process always was a subject of discussion among the foundrymen. The present article summarize the most important

factors, cause the influence on the adoption rate and value of magnesium batch for ladle treatment methods of cast iron to high duty cast iron.

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

8. **Gurtovoy D.A., Panfilov E.V., Korolyov S.P.** Role of iron with vermicular graphite in modern automotive industry. Perspectives and specialities of technological processes control. Describes perspectives of iron with vermicular graphite in automotive industry. Describes the technology, developed and used at OAO «KAMAZ_Metallurgy» for production of crankcase castings.

Key words: *iron with vermicular graphite, crankcase castings.*

9. **Abdulkhalikov R.R., Mikryukov V.M., Panfilov E.V., Gurtovoy D.A.** Efficiency of use of carburizers for melting of ductile iron in arc furnaces.

We evaluated efficiency of use of different carburizers for production of ductile iron. Evaluation shows that for production of ductile iron and iron with vermicular graphite it's reasonable to use carburizers with content of carbon not less 97%.

Key words: *carburizer, graphite.*

10. **Bardanov A.V., Kotov A.N., Gurtovoy D.A.** Use of mechanized tools for fettling of ductile iron castings after change from in_mould inoculation to in-ladle inoculation at OAO «KAMAZ-Metallurgy»

To reduce the manpower for cutting of gating system of ductile iron castings we use mechanized tool – hydraulic wedge. That allows us to reduce the time of fettling for 30-50% and improve the working conditions for our personnel.

Key words: *hydraulic wedge, cutting.*

11. **Vdovin K.N., Shubina M.V., Ponurko I.V., Stolyarov A.M.** Exothermic inoculation of grey iron.

Describing inoculation process of grey iron with hypoeutectic composition by exothermic briquettes.

Described chemical composition of exothermic briquettes. As a result of the inoculation, the tensile strength increases for 50-100 MPa, blanching reduces 3-4 times or completely absent.

Key words: *grey iron, inoculation by exothermic briquettes.*

12. **Gladkova E.N.** Analysis of chemical composition of ductile iron with ODLF spectrometers Company Nalkho Tekhno SA proposes analytic equipment for industrial and R&D laboratories, including optical emission spectrometers OBLF GmbH for analysis of samples made of steel, cast iron, aluminum, copper etc.

Key words: *analysis of chemical composition, spectrometer.*

13. **Dyomin E.N., Lyalin V.K.** Monolithic refractory parts and dry concrete mixtures with additions of Al-Cr spinel.

Presented dry concrete mixtures and monolithic parts, based on these mixtures with addition of Al-Cr spinel. These materials has been using successfully at several metallurgical plants.

Key words: *Al-Cr spinel, dry concrete mixtures, monolithic parts.*

14. **Roedter H.** ADI – austempered cast iron.

ADI – Austempered Ductile Iron, Austempered cast iron (tempered cast iron with isothermal transformation – is the variety of bainitic high duty cast iron) is the new foundry material, which characterizing by high strength (800-1500 N/mm²), high ductility and low production cost.

Key words: *austempered cast iron.*

15. **Belov V.D., Filippova I.A., Dibrov I.A.** Inoculation of hypoeutectic aluminum alloys by zircon ligature chilled from liquid condition.

In the article are presented the research results of hypoeutectic aluminum alloys Inoculation by zircon ligature chilled from liquid condition.

Key words: *hypoeutectic aluminum alloys, ligature, chilled from liquid condition.*