

ADNAN SAIDOVICH ELDARKHANOV

(on the 65th anniversary of birth)



November 21 marks the 65th birthday of Doctor of Technical Sciences, Professor, Academician of the Russian Ecological Academy (REA), winner of the Prize of the Government of the Russian Federation in the field of science and technology **Eldarkhanov Adnan Saidovich**.

The Executive Committee of the Russian Foundry Association, the editorial board of the magazine "Foundry of Russia", colleagues and friends congratulate **Adnan Saidovich** on the Jubilee date and wish good health, happiness, family well-being and continued success in scientific activities.

- 1. G.A. Kosnikov, A.V. Kalmykov, E.N. Bespalov.** The influence of vibration-jet treatment on the behavior of liquid medium and put them in the dispersed particles

The design of vibration-jet mixer (VJM) for vibration-jetting treatment (VJT) of liquid medium is described.

The results of studies on the effect of VJT on the behavior of dispersed particles of Al_2O_3 , Gd_2O_3 and precrushed Nafen nanofibers in water and the behavior of Gd_2O_3 particles in aluminum melt are presented.

Key words: Vibration-jet mixer (VJM), vibration-jet treatment (VJT), liquid medium, dispersed particles.

- 2. R.K. Mysik, S.V. Brusnitsyn, A.V. Sulitsin.** Control of process of structure formation of copper and copper alloys ingots

The results of studies of using of coolers during manufacturing of copper and copper alloys ingots are presented.

Pipe coolers are added into liquid metal pool in crystallizer during continuous casting process. It is shown that this fact leads to decrease of temperature difference in cross section of ingot, decrease of probability of formation of hot cracks and reduce of grain size in the structure of ingot. The addition of cadmium in crystallizer by bimetallic wire leads to decrease of waste of cadmium, guarantees forming of fine-grained structure of ingot and permits to eliminate wash meltings.

It is established that the structure of copper tube (cover) and cadmium has an effect on the structure of ingot.

Key words: Copper, copper alloy, continuous casting, crystallizer, tube cooler, structure, ingot, heredity.

3. V.K. Dubrovin, B.A. Kulakov, O.M. Zaslavskaya. Recycling of cement molding mixture based on hereditary hydration

The result of the study of the possibility of re-use of the spent sand-cement mixture for volumetric molds on precision casting.

Key words: Casting, recycling, mixture, cement, hydration.

4. V.I. Zarembo, D.V. Zarembo. Manifestations of stochastic resonance in foundry and metallurgical technologies

More than twenty years our laboratory investigates stochastic resonance — transformations induced by external (color) noise of a limited range in metallurgical and chemical technologies. The method is already tested on a big group of nonequilibrium processes of various nature including melting, casting and welding of metals and alloys. The external ultrasonic noise of certain frequency influences on these processes and it is possible to regulate them purposefully.

Key words: Metallurgy of steels and alloys, crystallization, self-organization, stochastic resonance.

5. K.O. Sinyagin. Implementation of a complex approach to producing of sealed castings on the example of manufacturing a set of castings for body of a gas meter «body» and «Cover»

This article describes the experience gained as a result of applying an integrated approach to the introduction of equipment and tooling for pressure die-casting, the purpose of which was to produce castings of the gas meter body «Cover» and «Body» with the requirements for impermeability.

Key words: pressure die casting, cover, body, gating system.

6. O.P. Chechushkin, A.R. Lutz, T.A. Mikhaylenko. Hereditary influence of the components of the charge melted alloy AlTi3 on the properties modified alloy AK12M2

The results of the study of the effect of structural heredity in the modification of the alloy AK12M2 finegrained AlTi3 ligature produced by combining CH-and furnace synthesis.

Key words: Modification, needle morphology, skeletal morphology, synthesis, primary silicon crystals, fine, coarse titanium powder.

7. M.A. Druzhevskiy. Silica and olivine sands as filling materials for chemically bonded mixtures

The article provides comparative data on the use of silica and olivine sands at foundry, their advantages and disadvantages.

Key words: silica sands, olivine sands, filling materials, binders.

8. A.A. Lisovoy, A.N. Khudeshenko. «AKS PLANT» LTD — modern foundry

The main activities of the plant for the production of castings from ferrous and non-ferrous alloys and for design and manufacture of lines for the production of lost foam casting are described.

Key words: Lost foam casting, automated and mechanized lines, precision casting.