

1. **ANDREW I. DIBROV - President of the All-Russian Public Organization "Russian Association of Foundrymen".**



By the decision of the Executive Committee of the Russian Association of Foundry Workers, the remote 17th Congress of Foundry Workers was held on March 14, 2023 with the agenda "Election of the President of the All-Russian Public Organization "Russian Association of Foundry Workers" – OOO RAL". The representation norm is established by one delegate from regional (republican, regional, regional, city) branches, which are members of RAL LLC.

The Congress was attended by 33 delegates, which is 71 percent of the total number of RAL members. In accordance with the Charter of OOO RAL, Dibrov Andrey Ivanovich was unanimously elected President of the All-Russian Public Organization "Russian Association of Casters".

Given the above, Andrey Dibrov Ivanovich at the Congress of Foundry Workers gatami regional branches of Russia-foundry association unanimously but was elected President of the All-Russian public organization "Russian foundry association.

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2. **BORIS ALEKSEEVICH KULAKOV (to the 80th anniversary of his birth)**



3. V.I. Verbitsky. The use of multipliers and vibrators on automatic molding machines

Abstract. A molding system with a powerful pneumatic press and a hydraulic multi-plunger head (MPG) is presented. In the presence of a relatively simple pneumatic-hydraulic multiplier, it is possible to use the usual passive (compensating) MPG as a passive-active one, realizing intense vibration of the tooling at the last stage of compaction. The resulting pressure fluctuations in the hydraulic system are damped by the multiplier itself. As a result of such pressing, uniform compaction of the layers and volumes of the mixture in the entire mold is achieved.

Keywords: press, multiplier, multi-plunger head, seal, vibration, hydraulic system.

4. S.L. Rovin, D.I. Kurach. Recycling of aspiration dust of arc furnaces in a foundry

Abstract. A significant part of the solid waste of machine-building and metalworking enterprises consists of dispersed waste containing metals and their compounds: metalworking slurries — stripping, grinding and polishing of metal blanks and products, aspiration dust of metallurgical aggregates, metal dust sawing, scale, shot cleaning dust and shot waste, chips and fine scrap, slag, etc. The lion's share of these wastes is formed in the production and processing of ferrous metals. The problem of their disposal remains open, and the main part of oxide and multicomponent iron-containing waste is now taken to landfills and buried in industrial landfills, which leads to significant economic losses and creates a serious environmental threat. About 15—20% of these wastes are aspirated dust from melting furnaces. One of the most significant problems of their disposal is high dispersion (particle sizes, as a rule, do not exceed 50 microns), as well as extreme heterogeneity and instability of granulometric and chemical composition. This article presents the results of studies of the properties of aspiration dust of arc steelmaking furnaces, the conditions for the recovery of iron contained in the dust, as well as an analysis of the possibilities of its disposal in a foundry.

Keywords: dispersed iron-containing waste, aspiration dust of arc furnaces, recycling, environmental protection.

5. Yu.A. Svinoroev, Yu.I. Gutko, K.A. Batishev, K.G. Semenov. Investigation of the stability of the effect of modifiers from the class of nonionic surfactants on the binding capacity of technical lignosulfonates and strength characteristics of mixtures based on them

Abstract. It is established that the obtained results of increasing the binding capacity of LST, due to their modification by NPA, are stable with a statistical probability of 0.95. It is confirmed that the effect of increasing the binding capacity of LSTs when they are modified with highly effective substances from the class of NPAV is manifested regardless of seasonal factors. This determines the stability of the strength characteristics of the binder composition at a level exceeding 2.00 MPa in the cured state and provides the possibility of their use at any time of the year. Such strength indicators of mixtures are independent of natural factors of influence, unlike when using non-modified LST, when strength indicators could vary in the range of 30—40%, depending on the season (winter/ summer). The obtained results stabilize the properties of LST regardless of the material manufacturer, eliminating the need for preliminary adaptive experiments when choosing a supplier. For example, the difference in the characteristics of the binding capacity of the LST when using the Sokolsky pulp and paper mill could be 0.42 MPa, and the material of the Kondopoga pulp and paper mill 1.13 MPa, modification strengthens and stabilizes this indicator at a level exceeding 2.00 MPa, with the minimum required manipulative strength equal to 1.4 MPa and higher.

Keywords: technological tasks, technical lignosulfonates, modification, binding capacity, stability of results, stability of properties, statistical probability.

6. **A.A. Kreschik, V.A. Kechin.** Technologies for manufacturing model-rod tooling using polymer waste of own production.

Abstract. Research on the processing of the share of irrevocable polyurethane waste from the production of model equipment into polyurethane composite material.

Keywords: model equipment, polyurethane waste, polyurethane composite material.

7. **M.L. Kalinichenko, B.M. Nemenenok.** Evaluation of the strength properties of adhesive joints used in the creation of plastic model sets.

Abstract. The article presents information on model plastics presented on the market of the Republic of Belarus. The analysis of methods for creating accurate model sets using both 3D printing from thread and granules, and obtaining model sets from an array of model plastic using 3D milling is carried out. The properties were evaluated and the behavior of glued and solid plastics under compressive loads in the longitudinal and transverse directions was shown. Economic efficiency assessment of various methods of obtaining model sets is given, based on a comparison of the cost of materials and the production process itself.

Keywords: model tooling, foundry, adhesives, model plastic, parts for model sets, mechanical compression tests, economic efficiency.