Ivan Andreevich Dibrov (85 years since his birth)

November 6, 2021 marks the 85th anniversary of the President of the Russian Association of Foundry Workers, Doctor of Technical Sciences, Professor, Honored Metallurgist of the Russian Federation, Honored Inventor of the USSR, a well-known scientist in Russia and abroad, a highly qualified specialist in the field of foundry production, a talented organizer. The total work experience is 67 years, including 55 years in the specialty "Foundry production".

For 55 years of fruitful work, scientific developments and widespread introduction into production of new, economically sound technological processes, materials and equipment in the field of foundry production, fruitful scientific, pedagogical and social activities, Ivan Andreevich Dibrov was awarded State awards: the Order of the Badge of Honor, the Prize of the Council of Ministers of the USSR, the Honorary title "Honored Metallurgist of the Russian Federation", the medal "Veteran of Labor" and other awards.

The Russian Association of Foundry Workers, the editorial Board of the magazine "Foundry of Russia", scientists and production specialists, colleagues and friends congratulate Ivan Andreevich Dibrov on the Anniversary date, wish him good health, well-being and further success in scientific, industrial, pedagogical and social work for the benefit of the development of foundry production in Russia.

1. **D.O. Levin, R.K. Mysik, A.V. Sulitsin, S.V. Brusnitsyn.** To the problem of shut-off valves manufacturing from lead brass using continuously cast billets

The article provides basic information about lead brass and requirements for their structure and properties. The technology of horizontal continuous casting of brass billets for production of ball valve components is described. The results of study of structure and mechanical properties of continuously cast billets made of brass grade LS59-1 are presented. The problems that arise during the operation of ball valves made of lead brass are shown. Possible ways of solving these problems and improving the manufacturability of cast billets during hot forging and cutting are proposed.

Keywords: lead brass, horizontal continuous casting, ball valve, microstructure, phase composition, mechanical properties

2. **V.N. Gushchin, A.A. Kim**. Investigation of the infl uence of impulse processing of aluminum melts on the quality of cast metal

An analysis of the electro-impulse effect on the melts of a number of aluminum alloys in the casting ladle and the transfer furnace from the standpoint of the nature, possibilities and effectiveness of the impact on the casting quality is carried out. Ladle processing or in a storage furnace was performed with second power modes from 0.25 to 4 kW with an impact of 1 to 3 minutes. The research process consisted in studying the dynamics of melt flows and nonmetallic inclusions on a physical model, as well as experimentally determining the efficiency of refining and homogenization of the melt, fixing macro- and microstructural changes in cast metal, and studying physicomechanical properties. В.Н. Гущин,

А.А. Ким Нижегородский государственный технический университет (НГТУ) им. Р.Е. Алексеева. Россия, г. Нижний Новгород Исследование влияния импульсной обработки алюминиевых расплавов на качество литого металла Macro-microstructural changes in casting were established after processing the melts with a high-power acoustic field. It was found that the improvement of the physicomechanical properties of the cast metal is a consequence of changes in the size of macrograins, non-metallic inclusions and pores, an increase in the purity of the cast metal in gases and non-metallic inclusions, and a more uniform assimilation of introduced modifying elements over the cross-section of the cast samples. The influence of the magnitude of the input power of the action on the melt on the hydrogen content, the change in the hardness and temporary resistance of the samples are determined.

Keywords: melt; electro-impulse exposure; microstructure; hydrodynamics; ladle; dispensing oven; non-metallic inclusions; second power; hydrogen; mechanical properties.

3. **I.V. Kandaurov, V.M. Pixaev, F.F. Porridge, P.V. Alikin**. Features of obtaining wax models for the manufacture of cast large-sized blades of high-power gas turbines

The article considers the issue of manufacturing wax models of increased accuracy for large-sized cast blades of high-power gas turbines. Increasing the geometric accuracy of wax models is solved by: calculating the shrinkage coefficient in the directions; a new approach to pressing the model composition and stabilizing the geometric dimensions of wax models after pressing and during further interoperative storage.

Keywords: casting by melting models, wax model, working blade, gas turbine.

4. **A. Popov.** German core-making equipment of Laempe at the foundries of Weichai holding in China

The article describes the current state of the foundry industry in China and promising development trends. An example of equipping one of the largest automobile concerns of the world with most modern core-making equipment is shown.

Keywords: modernization of foundry production, cast automotive components, Coldbox-Amin-process, core sand preparation, robotization of core-making,

5. **I.A. Melnikov.** Th e quality of one-time sand-clay molds according to Seiatsu technology is a process on the AFL of HWS-Sinto

The article provides information on the modern method of compaction of greensand molds using Seiatsu-process in comparison with other molding methods, which have significate limits in their properties. Examples of applications, advantages and actual samples of molds for difficult castings are described.

Keywords: modernization of foundry production, Seiatsu-process, quality of greensand molds.

I.V. Gavrilin's obituary

On October 12, 2021, Igor Vasilyevich Gavrilin, a prominent specialist in the field of foundry production, who made a great contribution to the development of the theory and technology of foundry and metallurgical processes, passed away at the age of 81.

The Russian Association of Foundry Workers, the Vladimir Regional Branch of the Russian Academy of Sciences, the staff of the Department of Technologies of Functional and Structural Materials of Vladimir State University, colleagues and students express their deep condolences to the relatives and friends of Igor Vasilyevich in connection with the grave loss of a wonderful man, a talented teacher and an outstanding scientist.