

1. **I.O. Leushin, L.I. Leushina, M.A. Larin, I.A. Andreev.** Mechanisms of sintering of precision casting molds

Abstract. The sintering process plays a decisive role in the formation of heat resistance and crack resistance of ceramic shell molds of precision casting. Studying the mechanisms of sintering and identifying the determining factors makes it possible to choose suitable options for improving the quality of shell sintering and, as a result, obtaining high-quality castings.

Keywords: sintering, investment casting, shell mold, heat resistance, crack resistance.

2. **J. Pokli', A. Nagode', P Mrvar', A. Tekavbi&, M. Petrić'.** Comparison of Impact and Fracture Toughness of Ductile Iron and Ferritic Steel.

Abstract. The aim of the study was to determine the fracture and impact toughness of ductile iron EN GJS-400-18LT and to compare it with the hot-rolled structural steel S235JR+AR at room temperature, 0 °C, -20 °C and -40 °C. Another objective was to determine the temperature interval of the transition from ductile to brittle fracture and to analyze the fracture behavior of both alloys. To this end, fracture toughness testing was carried out using a three-point bending test and Charpy impact toughness tests at the above mentioned temperatures for both alloys. Metallographic examination, macroscopic analysis of fracture surfaces and microfractography using a scanning electron microscope (SEM) were also carried out on certain samples. The impact toughness of S235JR+AR at room temperature is shown to be significantly higher than that of EN-GJS400-18LT, however, drops markedly as the temperature is lowered, so that at -40 °C, both alloys exhibit the same impact toughness value. The fracture toughness of EN-GJS-400-18LT is higher than that of S235JR+AR at all temperatures and even increases slightly with temperature.

Keywords: high-strength cast iron, ferritic steel, viscosity, crack resistance.

3. **A.A. Kreschik, V.A. Kechin.** Polyurethane composite materials from model-rod tooling production waste.

Abstract. Results of research on the selection of polyurethanes with technological characteristics that meet the conditions for creating a composite material using waste from the production of model equipment.

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

4. **U.A. Kalinichenko, A.A. Andrushevich.** Cast composite materials: the state and prospects of obtaining.

Abstract. The paper considers the theory and practice of obtaining cast composite materials, their classification and features of the formation of the structure during their synthesis. The results of obtaining parts of responsible purpose from cast composite materials are presented. It is shown that the formation of the transition zone occurs during the infiltration of the matrix melt, followed by its growth during exposure at the synthesis temperature.

Keywords: cast composite materials, composites, cast parts, synthesis of cast composite materials.

5. **All-Russian Scientific and Technical Conference, Samara, October 4—6, 2023**

VLADIMIR LEONIDOVICH KROHOTIN
(18. 01.1933—27. 01 2023)



On January 27, 2023, at the age of 91, Vladimir Leonidovich Krohotin, a well-known specialist foundry and metallurgist in Russia and abroad, a talented leader, passed away.

The bright memory of Vladimir Leonidovich Krohotin, as a highly qualified specialist, an active public figure, will forever remain in the hearts of his friends, colleagues and relatives.