

1. VIII BRICS Foundry Forum, Ahmedabad, India 10-12 January, 2018
2. M.N. Saubanov, E.N. Zhirkov, A.Yu. Dozornov, I.E. Illarionov, I.O. Leushin. Main problems in manufacturing titanium castings.

The properties and advantages of titanium alloys as a structural material are described. Groups of characteristic defects of titanium casting and mechanisms of their formation are determined. The main ways to improve the quality of titanium fittings are presented.

Key words: periclase forms, surface hard alfa layer (α -layer), liquid-penetrant study, high-temperature gas-static treatment.

3. Yr.A. Svinoroev, K.A. Batyshev, K.G. Semenov. Analysis of rational use of technical lignins in the processes of casting.

Possibilities of application of technical lignins in industry. It is established that lignin-containing materials, such as large-capacity product of processing of vegetable raw materials are unclaimed online, which is the involvement in the industrial circulation will allow to solve issues of resource conservation, environmental protection, labor safety, through the creation of new competitive products. The conceptual possibility of such an application to create a new foundry binders.

Key words: lignin, vegetable raw materials, technical lignin, lignosulphonates technical, binding ability, functional materials.

4. R.D. Farisov, V.Y. Saprykin. Method for rapid assessment of heat resistance of the core materials.

A methodology for assessment of core materials propensity to form a defect «cutting» in castings has been developed. The technique is to determine the heat resistance of cores made from different core materials by comparing them after pouring in the same conditions according to the quantitative index — the volume of the formed cuttings. The method is recommended for the operational study of the heat resistance of core materials.

Key words: heat resistance, core materials, cutting.

5. V.S. Doroshenko. About nature-friendly technologies for precision casting.

An example of the implementation of the concept of nature-friendly technology with the operations of selfdestruction of materials after the performance of their functions is proposed as part of the process of casting metals on ice patterns. Samples of blocks (clusters) of such patterns are shown for working out the processes of molding and casting. The distribution of such materials and technological processes in the non-waste production of the future is predicted.

Key words: environment-friendly technology, self-destruction of materials, molding process, sand molds, ice pattern, cryotechnology, waste-free manufacturing.

6. A.I. Demchenko, A.A. Garchenko, E.L. Korzun, P.G. Samburskiy, V.V. Marchuk. Quality improvement of cast cylindrical ingot produced by vacuum induction melting of alloy Inconel 718 at PJSC «RUSPOLYMET».

Technological parameters of alloy Inconel 718 casting, melted in vacuum induction furnaces, are proposed. This parameters allow to produce quality cast ingots.

Key words: Cast parameters, intermediate ladle, nonmetallic inclusions.

7. K.A. Batyshev, K.G. Semenov, E.D. Demyanov, R.F. Yusipov, I.Ya. Paremsky, A.A. Prokhorov, V.A. Katelin. Production of quality castings for critical purposes using modern modeling methods.

The use of modern computer programs in the production of castings of responsible use is an indispensable condition for obtaining high-quality parts. The paper presents the results of using NX Unigraphics, ProCAST and Polygon programs to produce defect-free gas turbine blades.

Key words: design, computer programs, models, temperature distribution, gating system, castings.

8. **V.A. Ivanova.** The procedure for making changes in the national standards of the Russian Federation (GOST R) and interstate standards (GOST).