1. **I.A. Dibrov.** The main events held by the Russian Association foundry workers in 2022 and tasks for 2023
2. **E.I. Marukovich, M.A. Sadokha.** Trends in the production of castings.

Annotation. Information about the volumes of production of castings in various countries of the world isgiven. The situation with the production of castings in the Republic of Belarus is considered in more detail. A forecast is presented on the ways of further development of foundry production. Recommendations have been developed on the main areas of application of cast products in mechanical engineering.

Keywords: foundry, mechanical engineering, casting,billet, steel, gray cast iron, high strength cast iron, aluminum alloys, casting methods.

3. **E.I. Marukovich, A.I. Pokrovsky.** Development of economic alloyed high-strength ausperritian (bainitic) cast irons — the main direction in the iron foundry industry.

Abstract. The distribution of the castings production in the world, whose total output is more than 112 million tons, is considered. A steady trend to the replacement of rolled alloy steel, which is used for critical engineering products, by Austempered Ductile Iron (ADI) is outlined. The latter is ductile cast iron with globular graphite, which is austempered (isothermally quenched) to produce ausferritic (bainitic) structure. The mechanical properties are the following: ultimate tensile strength 1100 to 1500 MPa and elongation to failure 2 to 4 % for lower bainite; ultimate tensile strength 800 to 1100 MPa and elongation to failure is 4 to 7 % for upper bainite. The dynamics of prices for main alloying elements in ADI (molybdenum, nickel and copper, whose total amount in the alloy reaches 5 %) is considered and their steady growth is outlined.

Ketwords: cast iron, microstructure, ausferrite, bainite,austempering.

4. **E.I. Marukovich, V.M. Karpenko, M.I. Karpenko.** Making castings from cast iron with vermicular graphite

Abstract. This article analyses methods of making castings from cast iron with vermicular graphite. Recommendations for the use of these methods are given.

Keywords: iron castings, nodular iron, fluidity, chill, gas permeability, impurities, alloying components

5. **E.O. Sinyagin.** Defects of castings. Elimination of pores and shrinkage shells in castings

Annotation. The complex application of technological measures, methods and techniques will eliminate gas pores and shrinkage shells and obtain high-quality castings from aluminum alloys by high-pressure casting.

Keywords: defects of castings, casting, production, diecasting machine, aluminum, zamak, die-casting, gravity die-casting mould.

6. **Yu.I. Gutko, T.A. Shinkareva, N.A. Taranenko.** Air environment research HTS-process

Annotation. A study of the air environment of the HTS process was carried out. The workplaces where monitoring of the state of the air environment is necessary have been selected. The study showed that it is effective to use local exhaust ventilation, to apply the suction of polluted air directly at the place

where the mixture is released and the core box is filled with it. It is important to provide measures that exclude direct contact of personnel with the BSC and the mixture containing it.

Keywords: HTS, furan- and Cold-box-amin processes, furan resin, phenolic resin, phenol and formaldehyde, furfural.

7. **V.A. Smolko, A.V. Sulitsin, S.V. Brusnitcyn, V.K. Dubrovin.** Th ermodynamics of non-equilibrium nonlinearpolymorphic transformations of quartz in sand-claymixtures during heating.

Annotation. The article is dedicated to the questions thermodynamics of polymorpfic transformations ofquartz in synthetic molding sands during heating. The value of the change in entropy during olymorphic transformations of quartz in the temperature range from 298 to 1743 K is calculated.

Keywords: thermodynamics, quartz, molding sand, heat.