

## SUMMARIES

DYNAMICS OF SPHERICAL FIVE-LINK MECHANISMS WITH TWO DEGREES OF FREEDOM. **N. Davitashvili, O. Gelashvili, A. Saghirashvili.** „Problems of Mechanics“.Tbilisi, 2022, № 3(88), pp. 7-17, (Engl.).

In this paper, an analysis of spherical five-link hinged mechanisms with two degrees of freedom is given and 18 kinds of spherical five-link mechanisms are revealed. A dynamic investigation for one case of spherical five-link mechanism with concentrated masses of elastic links has been conducted. The mechanism is considered as a five-mass system, which motion is described by 8 nonlinear differential equations, four of them describe a motion for electromotors, two characterize a basic motion of the mechanism and two – a mass oscillation of a junction point of connecting rods. The received results enabled to design, manufacture and use in technics a spherical five-link mechanism for cutting volumetric ornaments, used in furniture industry. 4 ill. Bibl. 11. Engl.; sum. in Russian.

ANALYSIS OF THE INFLUENCE OF A PERTURBING FACTOR ON THE STABILITI OF THE FACE MILLING PROCESS. **M.E. Iremadze, A.I. Khvadagiani,** „Problems of Mechanics“.Tbilisi, 2022, № 3(88), pp. 19-26, (Engl.).

The influence of the perturbing factor on the stability of the face milling process was analyzed. The results of a statistical analysis of production data on radial run-out of the teeth of the face milling cutters are presented. The analysis of the presented results indicates the general patterns of changes in run-out of the teeth depending on the diameter of the cutter and the number of teeth. Through statistical generalization of the experimental data, there have been obtained the mathematical models of the relationship between run-out of the teeth and its statistical characteristics on the one hand, and the diameter of the cutters and the number of teeth, on the other hand. The models have been developed as the linear logarithmic polynomials. The resulting models can be used for a preliminary quantitative evaluation of run-out of the teeth, followed by an evaluation of its effect on the stability of the milling process. 4 ill. Bibl. 8. Engl.: sum.in Russian.

MEASURING THE FUEL CONSUMPTION OF INTERNAL COMBUSTION ENGINES DURING OPERATION. **O. Klyus, P. Rajewski, M. Szczepanek, K. Prajwowski.** „Problems of Mechanics“.Tbilisi, 2022, № 3(88), pp. 27-33, (Engl.).

Due to the increasing awareness of the impact of exhaust emissions on the environment, combined with the continued increases in fuel costs, there is great need for reduction in fuel consumption as well as clean exhaust gases. This has led to a high demand for accurate measurement systems to monitor the fuel consumption per engine. Real-time measurement and trend analysis of fuel consumption provide helpful information for ship owners, ship managers and crew about the influences of their actions on the consumed fuel. Fuel

consumption is also one of the main concerns sea going vessels, fishing vessels and in modern vehicles. The article reviews selected fuel measurement methods and discusses comparative tests of the measurement methods used during the tests. 9 ill. Bibl. 9. Engl.; sum in Russian.

PERFECTION OF THE CONSTRUCTION OF THE COMBINED DEVICE PROTECTING THE TURBOFAN ENGINE. **A. Maisuradze, S. Mebonia, M. Chelidze, Kh. Mghebrishvili.** „Problems of Mechanics“. Tbilisi, 2022, № 3 (88), pp. 35-42, (Engl.).

The article deals with design changes aimed at reducing or preventing damage caused by foreign bodies entering the air intakes of aircraft engines. A new design of the engine protection device is proposed, in which the first mesh is conical, due to which there will be an oblique impact and the force is partially transferred to the mesh, which reduces its load and the probability of failure. The method of determining the stresses acting in the grid wires is given. The mechanical characteristics of modern artificial materials are given. 7 ill. Bibl. 8. Engl.; sum. in Russian.

PROVIDING ENVIRONMENTAL SAFETY ON MOTOR ROAD TRANSPORT. **O. Gelashvili, J. Iosebidge, A. Saghirashvili, V. Abuladze.** “Problems of Mechanics”. Tbilisi, 2022, № 3 (88), pp. 43-50, (Engl)

The rapid growth of the automobile fleet indicates that it is the most necessary and convenient mode of the population conveyance and cargo transportation, but at the same time it is one of the biggest polluters of the environment. The solution to the environmental problems of motor transport represents a set of measures aimed at reducing the impact of harmful components in exhaust gases in the atmosphere as a result of the operation of vehicles, both on the environment and on human health. Based on this, in the article are considered the issues of providing environmental and ecological safety and develops relevant recommendations that will increase the efficiency of the functioning of road transport. Bibl. 5. Engl.; sum. in Russian.

INFLUENCE OF FINITE RIGIDITY OF THE VIBRATORY TECHNOLOGIC MACHINE WORKING MEMBER BOTTOM ON THE TRANSPORTATION PROCESS OF THE FRIABLE LOAD. **V. Zviadauri, M. Chelidze, T. Nadiradze.** „Problems of Mechanics“. Tbilisi, 2022, № 3 (88), pp. 51-57, (Engl.).

At researches into vibratory technologic processes, little attention is payed to influence of finite rigidity of the vibro-machine working member on the law of displacement of the technologic load. In the present work is given a mathematical model of vibratory displacement of the friable material on the working member with elastic bottom, performing spatial vibrations. By mathematical modeling is studied influence of the working member elasticity on the law of displacement (velocity) of the load. 4 ill. Bibl. 15. Engl.; sum. in Russian.

THE TYPES SHAVINGS AND THE METHOD OF EXPERIMENTAL DETERMINATION OF CUTTING FORCE DURING PROCESSING WITH CONTOUR TOOLS. **N.P. Sakhanberidze**, "Problems of Mechanics". Tbilisi, 2022, № 3 (88), pp. 59-65 (Engl.)

The types of shavings are presented when processing external and internal cylindrical surfaces using the contour tools. Appropriate types of shavings have been determined for the given technological process in order to meet the quality of processing and operational requirements of equipment. The method of experimental determination the main force component of cutting without using a dynamometer at the end of cutting processing is presented. 6 ill. Bibl. 5. Engl., sum. in Russian.