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SUMMARIES

DYNAMICS OF PLANAR RRRRT TYPE FIVE-BAR HINGED MECHANISMS WITH TWO DEGREES OF FREEDOM WITH CLEARANCE IN THE CONNECTION OF TWO COUPLERS WITH CONSIDERATION OF ADDITIONAL AND BASIC MOTIONS OF MECHANISM. **N. Davitashvili, A. Sharvashidze, A. Talakvadze.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 5-16, (Engl.).

Is stated the dynamic research of planar RRRRT type five-bar hinged mechanisms with two degrees of freedom with one clearance in connection of two couplers. Based on the analysis of kinetic energies of mechanism without clearance and with clearance in kinematic pair are studied the basic and additional motions of mechanism. Is carried out the comparative analysis of obtained results of dynamics of ideal and real mechanisms with revealing of reliable five-bar mechanism. 2 ill. Bibl. 18. Engl.; sum. in Russian.

STABILITY OF HYDRAULIC DRIVE OF AGRICULTURAL MACHINES WITH TAKING INTO ACCOUNT OF THROTTLE. **R. Makharoblidze, Z. Makharoblidze.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 17-22, (Engl.).

The dynamics of hydraulic drive of agricultural machines with the consideration of the throttle is researched. The design formula of the hydraulic drive shaft is derived. From the condition of obtaining the permissible value of the shaft rotation irregularity coefficient is obtained the design formula of the reduced moment of inertia of the flyweight. Bibl. 6. Engl.; sum. in Russian.

DEVELOPMENT OF MEASURES TO IMPROVE EFFICIENCY OF THE FUNCTIONING OF TRANSPORT COMPANIES. **O. Gelashvili, N. Tsilosani.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 23-27, (Engl.).

Improving the efficiency of transport companies depends on many factors. In the article are considered the factors influencing on the efficiency of transport companies, are analyzed the importance of their actions and are revealing the features of the influence of the driver's qualification. The qualification of the driver also affects on fuel consumption and ecological compatibility. From the point of view of ensuring fuel economy and environmental friendliness of the vehicle. Have been developed the measures to improve the professional skills of drivers, and is determined that the main attention should be paid for selection of the optimal driving mode and engine economical operating modes that are in direct correlation with operating conditions. The carried out in various operating conditions the studies and as a result of the analysis of the received statistical materials, are developed measures for the efficient functioning of transport companies that has great practical importance. Bibl. 8. Engl.; sum. in Russian.

ANALYSIS OF COMPOSED FOLDED PLATE PRISMATIC SHELLS. **E. Machaidze.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 29-34, (Engl.).

For analysis of reinforced concrete composite shell panels is accepted an additional working hypothesis that provides the specifics of composite structures deformations. The equivalent reduced

stiffness equation for shear constraints is accepted with respect to the version of the structural variant of composite folded prismatic shell panels. Bibl. 10. Engl.; sum. in Russian.

STABILITY OF GEOMETRICALLY NON-LINEAR DEFORMATIONS OF MULTI-LAYER THIN-WALLED SPATIAL SYSTEMS BY APPLICATION OF FINITE ELEMENTS METHOD. **T. Gardapkhadze, M. Gardapkhadze.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 35-39, (Engl.).

Are developed for multi-layer “rectangular” and “triangle” spherical hinged elements the numerical methods of construction of determined by stiffness matrixes and vectors in curvilinear orthogonal coordinate systems; these methods are realized as standard procedure packages. For program realization of methods is applied the algorithm introduction of initial data that makes these procedures invariant for selection of coordinate surfaces, structure of layers and their physical and mechanical characteristics with respect of force and heat kind of impacts. 2 ill. Bibl. 18. Engl.; sum. in Russian.

PROPERTIES OF THE POLYMER COMPOSITES ON THE BASIS OF SECONDARY POLYPROPYLENE AND MINERALS. **J. Aneli, D. Gventsadze, L. Shamanauri.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 41-46, (Engl.).

Polymer composites on the basis of secondary polypropylene and high dispersive powders of minerals wide spread in Georgia (andesite from Bakuriani, quartz sand from Sachkhere and slam from Okami) were obtained and investigated their some physical-mechanical and thermal properties. It is shown that the ultimate strength and thermal stability of composites extremely depend on the filler concentration and at definite significant of the concentration have maximums. For the composites with binary fillers (quartz sand/slam, quartz sand /andesite and slam/ andesite) revealed synergistic effect - anomaly increasing of the ultimate strength at definite proportion of fillers. It is established that modification of the mineral fillers with tetraethoxisilane enhances technical characteristics of the composite. 4 ill. Bibl. 4. Engl.; sum. in Russian.

COMPOSITES BASED ON SECONDARY POLYETHYLENE AND GEORGIAN MINERALS. **J. Aneli, L. Shamanauri, D. Gventsadze.** “Problems of Mechanics”. Tbilisi, 2018, № 1(70), pp. 47-51, (Engl.).

The polymer composites on the basis of secondary polyethylene and the minerals spread in Georgia (andesite from Bakuriani, Sachkhere quartz sand and Okami slag) have been obtained. There are studied some physical-mechanical properties, thermal stability and materials hydrophobicity. It is shown that the ultimate strength and thermal stability of the composites extremely depend on the type and concentration of the filler. For composites containing binary filler (quartz sand + slag) discovered the synergistic effect- anomaly increasing of the ultimate strength at definite ratio of the fillers. 3 ill. Bibl. 4. Engl.; sum. in Russian.

ACTUALITY TO INCREASE PRODUCTIVITY OF FREIGHT LOCOMOTIVES ON GEORGIA RAILWAY. **A. Nikolaishvili.** “Problems of Mechanics”. Tbilisi, 2018, № 1 (70), pp. 53-56, (Engl.).

In the article is considered the exploitation of freight locomotives on Georgia Railway at the given stage and the raised for them requirements in the modern conditions of operation and general aspects their future functioning. Ill. 1, Bibl. 6. Engl.; sum. in Russian.