

## SUMMARIES

PROBLEM OF DYNAMIC ANALYSIS OF RRRRT TYPE SPHERICAL FIVE-BAR HINGED MECHANISM WITH TWO DEGREES OF FREEDOM WITH CLEARANCES IN KINEMATIC PAIRS. **N. Davitashvili, A. Sharvashidze.** “Problems of Mechanics”. Tbilisi, 2019, № 1(78), pp. 7-14, (Engl.).

Problems of dynamic analysis of RRRRT type spherical five-bar hinged mechanism with two degrees of freedom with clearances in kinematic pairs is given. A spherical five-bar mechanism with three clearances in kinematic pairs is studied. Eight types of additional and basic motion of the mechanism, characterized by 52 differential equations, are determined. For the practical implementation of the task of dynamic analysis of a spherical five-bar mechanism is recommended to study the mechanism with one clearance in the connection of two couplers. The results will contribute to improving the accuracy of the mechanism under study. 2 ill. Bibl. 13. Engl.; sum. in Russian.

DYNAMICS OF PLANAR SEVEN-BAR ROBOT ACTUATOR MECHANISM. **N. Davitashvili, G. Chitashvili, N. Nozadze, K. Chkuaseli.** “Problems of Mechanics”. Tbilisi, 2020, № 1(78), pp. 15-24, (Engl.).

Is given the dynamic analysis of robot's planar seven-bar actuator mechanism formed on the basis of five-bar mechanism with two degrees of freedom and consisting three grippers. Is given the operating principle and is shown the possibilities of its operations in five modes. For one case of actuator mechanism's and grippers operation are obtained formulae of kinetic energy, reduced moments and non-linear second order differential equations by solving of which are defined real laws of motion of mechanism when all links are absolutely rigid. 3 ill. Bibl. 8. Engl.; sum. in Russian

ANALYSIS ON STABILITY OF HAVING HOLES THIN-WALLED SPATIAL STRUCTURES. **D. Gurgeniidze, G. Badzgaradze, G. Kipiani.** “Problems of Mechanics”. Tbilisi, 2020, № 1(78), pp. 25-33, (Engl.).

In the work is stated the methodology of determination of stability of having holes thin-walled spatial structures based on the wide application of theory of generalized functions. The analytical method of solution of theory of thin depressed shells of double curvature with finite length cut is developed. 1 ill. Bibl. 36. Engl.; sum. in Russian.

ON DEVELOPMENT OF AGROENGINEERING FIELD OF GEORGIA. **R. Makharoblidze.** “Problems of Mechanics”. Tbilisi, 2020, № 1(78), pp. 35-43, (Engl.).

In the paper are considered basic results of agrotechnical researches in Georgia in accordance with worldwide trends. With taking into account the features of agriculture were outlined basic fields of fundamentals and applied in last years, with accent on those fields of science, the application of that significantly increases the scientific level of agrotechnical

researches and are determined the specific measures for stabilization of agrarian sector of engineering-technical development of agriculture. Bibl. 20. Engl.; sum. in Russian.

**SENSORS ON THE BASIS OF ELECTRIC CONDUCTING POLYMER COMPOSITES. J. Aneli, D. Gventsadze, L. Shamanauri.** „Problems of Mechanics”. Tbilisi, 2020, № 1(78), pp. 45-54, (Engl.).

Tenzosensitive properties of the composite materials obtained on the basis of silicon rubbers and epoxy glue, containing carbon black and graphite have been investigated. In result of studies with use of spatially manufactured device experimentally were established: 1) tenzosensitivity of obtained composites increases at decreasing of concentration of electric conducting filler and vice versa; 2) tenzosensitivity of these materials increases also at increasing of their elasticity; 3) relaxation phenomena in the polymer matrixes district the frequency of impulse deformations; 4) tenzosensitivity of obtained materials may be regulated by introduction of some amount of the low molecular plasticizer to the polymer matrix. 6 ill. Bibl. 14. Engl.; sum. in Russian.

**HIGH-TEMPERATURE CERAMIC-PHOSPHATE MULTILAYER COMPOSITE THERMAL INSULATION MATERIALS. L. Robakidze, B. Mazanishvili, D. Gventsadze.** „Problems of Mechanics”. Tbilisi, 2020, № 1(78), pp. 55-60, (Engl.).

The work deals with the highly relevant problem, such as creation of sandwich-type composite high-temperature (1000-1150<sup>0</sup>C) experimental samples, which in turn allows to design and manufacture high-temperature energy-efficient thermal equipment such as stoves, dryers and more. The technology of making sandwich-type high temperature, heat-insulating materials (HTHIM) working at 1150<sup>0</sup>C has been developed, for which the authors used local raw materials based on (foamed perlite and clays), liquid glass, (HTHIM) based on orthophosphoric sandwich panels. The results showed that sandwich type ceramic-perlite-phosphate type of insulation materials can be used to manufacture high-temperature equipment, which are composed of low cost local raw materials, are lighter, more durable, relatively cheap and quite rightly fits into 1000-1150<sup>0</sup>C operational conditions of furnaces and other equipment. 4 ill. Bibl. 6. Engl.; sum. in Russian.