

**Name of Journal : Problems of Mechanics**

**Reported period: 01.09.2013 – 10.07.2014**

**Name and position of submitting person:** Founder and Editor -in-Chief Prof. Nodar Davitashvili

### **1. Journal thematic areas**

General Mechanics, Mechanics of Deformed Solids, Mechanics of liquid and oil, Applied Mechanics, Theoretical mechanics, History of Mechanics, Gyromechanics, Vibrations, Control of mechanical systems, Analysis and synthesis of mechanics, Design of mechanisms and machines, Kinematics and Dynamics of mechanisms and multi-body systems, Tribology, Reliability, Biomechanics, Mechatronics, Robots and manipulators, Micro-machines, Mechanical transmissions, Kinetoelastodynamics of machinery, Experimental mechanics, Magneto-/Hidro-/Aero-mechanics, Industrial machinery and applications, Computational kinematics, CAD techniques, New design of machines, Testing of prototypes and machinery. Applications

### **2. Editorial board**

Founder and Editor -in-Chief Prof. Nodar Davitashvili

Deputy Editors-in-Chief: Prof. O. Gelashvili,  
Prof. O. Klyus (Poland)  
Prof. R. Makharoblidze (Georgia)  
Prof. T. Natriashvili (Georgia)

Scientific-editorial board

Professor R. Alizade. Baku. Azerbaijan.  
Professor V. Algin. Minsk. Belarus.  
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Professor S. Tepnadze. Tbilisi. Georgia.  
Professor M. Tsikarishvili. Tbilisi. Georgia.  
Professor Ion Visa. Brasov. Romania.  
Professor K. Zimmermann. Almena. Germany

### 3. Publisher

LTD Bartoni, address: 43, Vazha Pshavela ave., Tbilisi, 0177, Georgia

E-mail: [info@bartoni.ge](mailto:info@bartoni.ge)

Is signed the memorandum (23 December, 2008) between IFToMM, IFToMM Georgian Committee (Editor-in-chief) and publisher (see Memorandum).

### 4. The short characteristics of the paper submissions recorded during reported period, comparison to the previous data

During the reported period were published four issues № 3(52)/2013, № 4(53)/2013, № 1(54)/2014, № 2(55)/2014.

In the journals were published lot of articles in Mechanics and Machine Building, as well as Theory of Machines and Mechanisms, including: Research of operational characteristics of crank-piston mechanism of applied in oil and gas pipe - lines pumps, Dynamical analysis of crank-piston mechanism with consideration of impacts in kinematic pairs with clearances, Definition of deformation rate in the helical piercing of billets, The mathematical modeling of plasma-arc cutting process, Generation of energy from equilibrium environment – the ability relevance and prospects, Control of 3-dof planar parallel robot, Control of mobile robot by means of cell phone, Dynamics of an electrical window regulator system, Research influence of operational characteristics on kinematics and dynamics of crank-piston mechanisms, Dynamics of cutting-grinding and harvesting unit of plant material, On structural analysis and synthesis of transformable systems with regular elements, Methodical framework of vibro-simulators' application and assessment criteria for vibrostimulation parameters' adequacy, On issue of parametric synthesis of vessel course control system, The present and long-term technical problems of exploitation of technologically advanced direct injection diesel systems, Diagrams of stiffness characteristics in cross-sections of deployable pantograph system in transformation process, Method of analysis of three-layered plates with anchor links between layers on stability and deformability, Improvement of technological process of freight cars running parts repair for carriage's assembly workshop continuous operation, Dynamic study of cranks - piston mechanisms with taking into account the clearances in kinematic pairs and elasticity of links, Optimal positioning of a four-bar linkages on a knee external fixator, Mathematical modeling of impact interaction process of agricultural machines working members with farm material, Reduction of unit fuel consumption and toxic emission in fishing fleet engines, Properties of novel hard alloys based on borides of transition metals, Entropy production equation for the open system as a theoretical basis of energy generation from heat energy of environment - physical foundations of tornado type phenomenon, Research of sliding of metal concerning rolls at cross and screw rolling, Development of carrying out of expertise automated information system, 15 year's in serving promotion of science development, Analysis of created by spherical kinematic chains manipulators, an approach to the kinematics and dynamics of a four-wheel mecanum vehicle, The review of researches of mechanisms of parallel structure at A.A. Blagonravov institute of engineering science of the russian academy, Stochastic deterministic calibration of a self balanced hybrid parallel/serial robotic structure, Research of walking robots deviations, Development of methods of calculation the mechanical losses and increase the efficiency of the piston machines, Dynamic of multiloop lever mechanisms with elastic links, Optimization of timing diagram of slay

mechanism of loom STB, Experimental investigation of dynamics characteristic of mobile machine of special purpose, The modern method of learning technical subjects with using computer, Modeling of biomechanical system at external periodic influence, Recommendations for elimination of arise in printing process defects in order of perfection of printing machine sheet transfer and sheet reversing device, The new scheme of the pipe-rolling unit for receiving seamless hot-rolled pipes, Analysis of catalysts application in diesel fuel equipment, Method for reduction of concentrations of nitric oxides and soot in combustion products of diesel, Steady flows of conductive liquid in a rectangular channel at existence of transverse magnetic field, Increase in operational reliability of heavy loaded units of frictions by means of complex technological methods, Application of critical loading determination method on plate with cut for solution of practical tasks, Mesh free models of continuum in nonlinear Hamilton biomechanical system, Determination of experimental factor of unsteady motion hydraulic resistance in main pipelines, Natural gas distribution network service quality, risk analysis and dynamic processes, Design of perspective high-speed asynchronous electric machines, Basic principles of planning transportation process technologies, Influence of contacting surfaces shape at rigid bodies collision with plant material, On issue of optimization synthesis of electromechanical follow-up drives with elastic coupling in mechanical part, Analysis of efficiency of functioning of transportation companies and basic estimation figures, Research on thermodynamic processes within pneumatic systems of high-pressure rubber-cord shells, Functioning mechanism of procurement logistics, The simulation modeling of logistical systems.

## **5. Discussion of journal impact factor (if applicable)**

In 2002-2003 was carried out the discussion on impact-factor conferment for Journal “Problems of Applied Mechanics”. At Journal assessment ISI concentrated on geographical origination of Journal (?) and shortage of citation data that makes impossible its positive assessment.

Repeatedly in 2004-2005 was carried out the discussion on impact-factor conferment for Journal “Problems of Applied Mechanics”: at evaluation of journal by ISI its origination (?) and low citation index that was not satisfied.

The Journal editorship comprehensively is attempting to send Journal on consideration on behalf of IFToMM, because since 22 December of 2008 the Journals is considered as official Journal of IFToMM, for that is necessary promotion and support from IFToMM.

## **6. Efficiency of publishing (submission to publication time)**

For review and consideration of presented in the Editorial Board of Journal articles is necessary approximately three – five months. In the case of positive decision the article will be processed for publishing

## **7. Review procedure**

During the reported period (01.03.2013 – 01.07.2014) were published four issues of Journal: № 3(52)/2013, № 4(53)/2013, № 1(54)/2014, № 2(55)/2014 (Special Issue).

In issue № 3(52)/2013 in editorial board was received 12 papers. By reviewers were evaluated positively 7 papers, which are published in the Journal.

In issue № 4(53)/2013 in editorial board was received 15 papers. By reviewers were evaluated positively 10 papers, which are published in the Journal.

In issue № 1(54)/2014 in editorial board was received 13 papers. By reviewers were evaluated positively 8 papers, which are published in the Journal.

In issue № 2(55)/2015 (Special Issue of Journal) for participation in Conference „Mechanics 2014” were presented 38 papers. For reviewing these papers were sent to leading scientists in according fields. 30 papers were evaluated positively and they are recommended for publishing in Special Issue of Journal „Problems of Mechanics”. Remaining 8 papers were rejected

The reviewing committee of Journal „Problems of Mechanics” includes: Professors O. Berestnev, A. Sharvashidze, V. Gogilashvili, K. Zimmermann, O. Klyus, V. Glazunov, G. Kipiani, PhD. D. Chablat and Assoc. Professor T. Nadiradze and is officially confirmed. The reviewers may resend the paper to other leading specialist of field if this article is not fully corresponding to their scientific activity.

## **8. Other relevant information**

It is necessary to mention that Georgian Committee of IFToMM is maximally attempting to improve the status of IFToMM Journal „Problems of Mechanics”, promote its functioning to reach a high degree of competitiveness with similar type Journals.

Accordingly of agreement and memorandum IFToMM will promote and support the Journal by corresponding rules, provide and stimulate IFToMM members and attending by problems of mechanics persons for articles presentation that actually is not carried out. I wish to more actively providing of this article in Memorandum from IFToMM that promotes to improvement of Journals level.

We consider that IFToMM will more efficient support for presentation of Journal in ISI, for that will be necessary letter and appeal from IFToMM as the Journal is belonging to IFToMM.

Editor-in-Chief

Professor Nodar Davitashvili