

*Scientific Research Centre
"MachineStructure"*

Amazon Kindle Direct Publishing



ISSN 2474-5901

Journal of Advanced Research in Technical Science

Issue 38

Seattle, USA, 2023

Journal of Advanced Research in Technical Science. –
Seattle, USA: SRC MS, AmazonKDP. –
2023. – Issue 38. – 96 p.

ISSN 2474-5901

Themes of journal: 1) Mechanical engineering and engineering science; 2) Mathematics and mechanics; 3) Mechatronics and robotics; 4) Transport, mining and construction machinery; 5) Power, metallurgical and chemical engineering; 6) Instrument making, metrology and information-measuring devices and systems; 7) Electrical and Electronics; 8) Informatics, computer engineering and management; 9) Engineering geometry and computer graphics; 10) Materials science; 11) Technology, machinery and equipment of Agroengineering systems; 12) Transport; 13) Construction and architecture; 14) Problems of personnel training in mechanical engineering.

Editor in Chief:

Ivan A. Zhukov – Saint-Petersburg mining university. Department of mechanical engineering. Doctor of sciences

Editorial Board:

Elvira R. Zvereva – Kazan state power engineering university. Departments of technology in energy and oil and gas processing. Doctor of sciences

Daba N. Radnaev – Buryat state academy of agriculture. Department of mechanization of agricultural processes. Doctor of sciences

Vladimir I. Sarbaev – Moscow polytechnic university. Department of Land Vehicles. Doctor of sciences

Lev A. Saruev – Tomsk polytechnic university. Department of Oil and Gas Business. Doctor of sciences

Aleksandr B. Filimonov – MIREA – Russian technological university. Department of automatic systems. Doctor of sciences

Elena S. Gebel – Omsk state technical university. Department of automation and robotics. Candidate of sciences

Azamat K. Djamankulov – Kyrgyz-Russian Slavic university. Department of mechanics. Candidate of sciences

Oleg S. Krol – Volodymyr Dahl East-Ukrainian National University. Department of engineering, machines and tools. Candidate of sciences

Nikita V. Martyushev – Tomsk polytechnic university. Department of Materials Science. Candidate of sciences

Copyright © 2023 Authors, SRC MS

All rights reserved.

ISBN: 979-8868194528

CONTENTS

Mechanical engineering and engineering science

- Lepeshinsky I.A., Zotikova P.V.** Application of two-phase flow dispersion for the formation of two-phase long-range jets 5
- Garanikov V.V.** The research of the influence temperature on micro-creep construction alloys 10
- Eliseev A.V., Kopylov Yu.R., Mironov A.S.** Frequency relations in the formation of modes with multiple tossing in the elastic interaction of a material particle with a vibrating surface, taking into account unilateral ties 15
- Roshchin M.N.** Change in the coefficient of friction of the Carbon fiber material in sliding bearings from load and temperature..... 24

Mathematics and mechanics

- Skiba N.V.** Dependence of flow stress on plastic deformation in bimodal materials with nanotwinned structure 28

Mechatronics and robotics

- Kozlov V.V.** Anthropomorphism of robots..... 36

Instrument making, metrology and information-measuring devices and systems

- Moiseev A.A.** About the special interpretation of base location equation 40

Electrical and Electronics

- Klimenko B.M., Pecheykina M.A., Mitryaeva O.E.** The possibility of morphological approach applying by value engineering 46

Engineering geometry and computer graphics

- Grigorieva E.V., Shamray-Lemeshko E.V.** The role of engineering tasks in teaching students of marine specialties in the process of graphic training 50
- Mitsik M.F., Volovik Yu.M.** Design and visualization of cylindrical shells..... 54

Materials science

Alisin V.V. Tribological properties of supports "on stones" for precision mechanics devices 58

Alisin V.V. Comparative tests of zirconium ceramics by kinetic indentation 62

Stashenko V.I., Skvortsov O.B. The effect on metals of mechanical vibrations created by the electroimpulse effect..... 66

Roshchin M.N. Temperature distribution in the coating during laser reflow on the surface of steel and titanium parts 71

Transport

Astrakhansky A.Yu. Effect of air pollution on diesel engine operation..... 75

Byshevoy M.E., Lyubskaya O.G. Advantages of using river transport for passenger transportation in Moscow 79

Construction and architecture

Zenkov E.V. Internet platforms for organizing collaborative work on digital information models in the construction field 85

Problems of personnel training in mechanical engineering

Urban V.E., Lyubskaya O.G. Working conditions as a factor of production risk..... 90

Scientific periodical issue

ISSN 2474-5901

Journal of Advanced Research in Technical Science

Issue 38

ISBN: 979-8868194528

Founder: Elena V. Zhukova.

Editorial: Scientific Research Centre «MachineStructure».

Editor in chief: Ivan A. Zhukov.

Printed by AmazonKDP, Seattle WA.

Publication Date: 17.11.2023.

Title ID: 23-22.

Trim Size: 7" x 10" (17.78 x 25.4 cm).

Number of copies: 50 min.

Seattle, USA:

Scientific Research Centre «MachineStructure», Amazon Kindle Direct Publishing
2023