

Founder and publisher

Donetsk National Technical University (Donetsk)

Editor-in-chief
Marenych K.N. (Dr. Sci. (Eng.), Prof.)*

Deputy Editor-in-chief
Maleev V.B. (Dr. Sci. (Eng.), Prof.)*

Editorial council:

Artyukh V.G. (Dr. Sci. /Eng./, Prof.)
Belomerya N.I. (Cand. Sci. /Eng./, Assoc. Prof.)*
Bershadsky I.A. (Dr. Sci. /Eng./, Prof.)*
Biryukov A.B. (Dr. Sci. /Eng./, Prof.)*
Gorbatko S.V. (Cand. Sci. /Eng./, Assoc. Prof.)*
Gorbatyuk S.M. (Dr. Sci. /Eng./, Prof.)
Dedovets I.G. (Cand. Sci. /Eng./, Assoc. Prof.)*
Eron'ko S.P. (Dr. Sci. /Eng./, Prof.)*
Zaharov N.I. (Dr. Sci. /Eng./, Assoc. Prof.)*
Kovalev A.P. (Dr. Sci. /Eng./, Prof.)*
Kozhevnikova I.A. (Dr. Sci. /Eng./, Assoc. Prof.)
Kondrahin V.P. (Dr. Sci. /Eng./, Prof.)*
Kononenko A.P. (Dr. Sci. /Eng./, Prof.)*
Kurennyiy E.G. (Dr. Sci. /Eng./, Prof.)*
Sotnikov A.L. (Dr. Sci. (Eng.), Assoc. Prof.)*
Chentsov N.A. (Dr. Sci. /Eng./, Assoc. Prof.)*
Shabayev O.E. (Dr. Sci. /Eng./, Prof.)*
Shapovalov V.V. (Dr. Sci. /Chem./, Prof.)*
Yakovchenko A.V. (Dr. Sci. /Chem./, Prof.)*

* - staff members of the founder

Address: 283001, Donetsk, 58, Artema St.
Phone +380 (62) 301-07-89
E-mail: vestnikdonntu@gmail.com
Internet: vestnik.donntu.org

Vestnik DonNTU
2022. No.1(27)

ISSN 2518-1653 (online)

Published since January, 2016
Publication frequency: 4 times a year

Certificate of State Registration
Series AAA No. 000133
dated 27.05.2017

The content and originality
of the articles is the author's
responsibility. The editorial opinion
may not necessarily represent
the views of the authors.

The content of advertising material
is the advertiser's responsibility.

Subscribed to print
on the recommendation
of the Academic Council
Donetsk National Technical University
Protocol No.1 dated 01.04.2022

Format 60×84^{1/8}. Order 0422
Publishing house
"Donetsk Polytechnic", 2022

CONTENTS

ENGINEERING AND ENGINEERING SCIENCE

D.A. Vlasenko

Experimental study of energy power parameters
of the process of grinding materials
in a rotary gear crusher 3

D.A. Vlasenko, R.S. Melezhyk

Research of dynamics of a finger coupling with an elastic
disk-type element under shock loads 12

METALLURGY AND MATERIALS SCIENCE

A.B. Biryukov

Predictive mathematical modeling of the
temperature state of metal in the production of long products
at the section of CCM - heating device 21

A.B. Biryukov, V.A. Sidorov

New ways of profound energy efficiency analysis of flame furnaces
taking into account the consumption of electrical energy 27

V.E. Goncharov, S.V. Zakarlyuka, E.A. Rudenko

Experimental study of physical modeling of wavy strip
under elastic tension 34

TRANSPORT, MINING AND CONSTRUCTION ENGINEERING

E.N. Boyko, A.P. Kononenko

Coal seam fracture model and
its correspondence to the real process 42

ELECTRICAL ENGINEERING

I.B. Guliaeva, Ye.S. Dubinka, M.K. Marenich

Analysis of the effectiveness of the protective function
of the capacitive current autocompensator in the structure
of the AZUR-1 series protection device 50

I.V. Kovalyova

Justification of the method of power supply disconnection of phase
to phase electrical arcing in the power network of the induction motor 61

INFORMATION

Requirements for the papers submitted to the Editorial office 68

Publication Information

– The journal publishes research papers of fundamental and applied nature, information on conferences, seminars and exhibitions. It covers the activities of the leading research and design institutes, industrial and commercial companies and technology parks.

– The journal provides information support for the marketing of competitive high-tech products, projects, scientific and technical developments and high technologies in various fields of industry.

– The journal is distributed free of charge in electronic format via the Internet. It provides informational support and participates in international scientific conferences and exhibitions.

– The journal is included into the Russian Index of Science Citation (RISC). Internet: elibrary.ru

– The journal is included in the list of peer-reviewed scientific publications of the Higher Attestation Commission (VAK) of the DPR. Internet: vak.mondnr.ru

– The editorial accepts for publication and reviews manuscripts on chemical and technical sciences, and the following groups of specialties: 05.02 – Engineering and engineering science; 05.05 – Transport, mining and construction engineering; 05.09 – Electrical engineering; 05.16 – Metallurgy and materials science; 05.17 – Chemical technology.