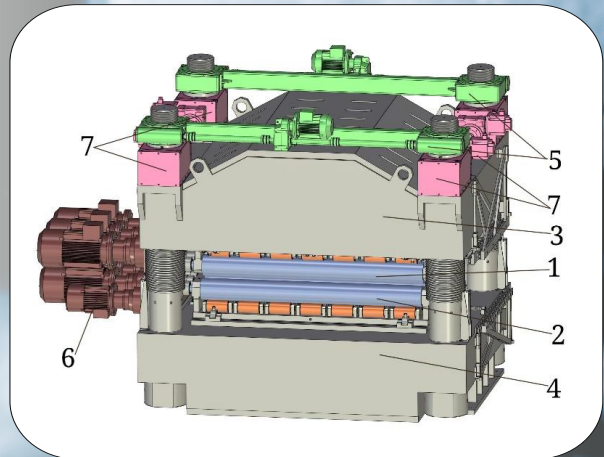


International journal
for science, technics and
innovations for the industry



MACHINES
TECHNOLOGIES
MATERIALS

YEAR XVI **Issue 4 / 2022** **ISSN PRINT 1313-0226**
ISSN WEB 1314-507X



Published by
Scientific technical
Union of Mechanical Engineering



MACHINES. TECHNOLOGIES. MATERIALS

INTERNATIONAL SCIENTIFIC JOURNAL

ISSN PRINT 1313-0226, ISSN WEB 1314-507X, YEAR XVI, ISSUE 4 / 2022

INTERNATIONAL EDITORIAL BOARD

EDITOR IN CHIEF:

Georgi Popov

Technical University of Sofia

BG

MEMBERS:

Abdrakhman Naizabekov

Rudny industrial institute

KZ

Ahmet H. Ertas

Bursa Technical University

TR

Albert Albers

Karlsruhe Institut of Technology

DE

Andrzej Golabczak

Lodz University of Technology

PL

Andrzej Huczko

Warsaw University

PL

Dimitar Karaivanov

University of Chemical Technology and Metallurgy, Sofia

BG

Emilia Abadjieva

Akita University

JP

Erdem Camurlu

Akdeniz University, Antalya

TR

Eugen Sheregii

University of Rzeszow

PL

Franz Haas

Graz University of Technology

AT

Galina Nicolcheva

Technical University of Sofia

BG

Gennadii Bagliuk

Institute for Problems of Materials Science NAS of Ukraine, Kiev

UA

Georgii Raab

Ufa State Aviation Technical University

RU

Gregory Gurevich

Shamoon College of Engineering, Ashdod

IL

Hiroyuki Moriyama

Tokai University, Hiratsuka

JP

Idilia Batchkova

University of Chemical Technology and Metallurgy, Sofia

BG

Ivan Kralov

Technical University of Sofia

BG

Ivan Kuric

University of Zilina

SK

Julieta Kaleicheva

Technical University of Sofia

BG

Katia Vutova

Institute of Electronics, Bulgarian Academy of Sciences

BG

Maria Nikolova

Angel Kanchev University of Ruse

BG

Natasa Naprstkova

Jan Evangelista Purkyne University in Usti nad Labem

CZ

Oana Dodun

Gheorghe Asachi Technical University of Iasi

RO

Ognyan Andreev

Technical University of Sofia

BG

Predrag Dasic

High Technical Mechanical School of Trstenik

RS

Rasa Kandrotaitė

Kaunas University of Technology

LT

Raul Turmanidze

Georgian Technical University, Tbilisi

GE

Roumen Petrov

Ghent University

BE

Sergey Dobatkin

National University of Science and Technology "MISIS", Moscow

RU

Souren Mitra

Jadavpur University, Kolkata

IN

Svetlana Gubenko

National Metallurgical Academy of Ukraine, Dnipro

UA

Vedran Mrzljak

University of Rijeka

HR

Wu Kaiming

Wuhan University of Science and Technology

CN

TECHNICAL EDITORS:

M. Sc. Eng. Radoslav Daskalov, M. Sc. Eng. Oleg Mihailov

Scientific and technical union of mechanical engineering
108 R. S. Rakovski str., Sofia, Bulgaria
www.stumejournals.com, office@stumejournals.com

CONTENTS

MACHINES

Roll leveler for straightening sheet blanks

Tamila V., Klubovich V., Liaukovich V. 114

Development and implementation of closed loop position control concepts on electromechanical linear system using Beckhoff controller

Vito Tič, Darko Lovrec 116

Research of the stress state of a gantry crane track

Kina Kutsarova-Dimitrova 120

TECHNOLOGIES

Possibilities of reducing the degradation of molds for high-pressure of Al alloys

Ján Hašul', Janette Brezinová 123

Study of the defect closure behaviour during forging in a step-wedge strikers

Andrey Volokitin, Abdrakhman Naizabekov, Irina Volokitina, Andrey Tolkushkin, Evgeniy Panin 127

Method for repair and recovery of defected industrial reinforced concrete structures through an effective thin repair overlay

Valeriy Naidenov, Liubomir Zhelezov, Mirona Mironova 130

Testing of nitinol sensor on bending deformed polypropylene tube: comparison of winding methods

Hana Křížová, Vítězslav Kříž, Stanislav Petřík 134

MATERIALS

Investigation of Heat-Treated Steels Using the Magnetic Noise Method

Yonka Ivanova 138

Mesoporous transition metal oxide composites for effective remediation of air from VOCs

Tanya Tsoncheva 142

Strain controlled fatigue of 40X steel

Rumen Krastev, Tatiana Simeonova, Vasil Kavardjikov, Ilian Atanasov, Ludmil Drenchev 146