



MACHINES, TECHNOLOGIES, MATERIALS 2014

11th INTERNATIONAL CONGRESS

1

PROCEEDINGS

**VOLUME 1 :
PLENARY SESSION
SECTION “MACHINES”**

ISBN 978-954-310-394-6



Organized by
**SCIENTIFIC-TECHNICAL UNION OF
MECHANICAL ENGINEERING**

17 - 20 SEPTEMBER 2014
VARNA, BULGARIA

CONTENTS

PLENARY SESSION

THERMOMECHANICAL STRENGTHENING AND STABILITY OF AUSTENITIC Cr18Ni10N STEEL D.Sc. Kaputkina L.M., D.Sc. Svyazhin A.G., D.Sc. Kaputkin D.E., PhD Smarygina I.V., PhD Kindop V.E.	3
THERMAL STRESSES IN THE BLADES WITH AND WITHOUT TBC BASED ON THE TEMPERATURE DISTRIBUTIONS MEASURED USING THERMAL IMAGING CAMERA M.Sc., Eng. Maś K., M.Sc. Woźny M., PhD. Eng. Dudek S., PhD. Marchewka M., PhD. Płoch D., PhD. Bochnowski W. Prof. Sheregii E. M.	6
USER EVALUATIONS: APPLYING A COST-BENEFIT APPROACH TO HUMAN COMPUTER INTERACTIONS Dr. Katz A.	9
SOCIAL RESPONSIVENESS OF RUSSIAN BIG INDUSTRIAL BUSINESS AGAINST THE BACKDROP OF A GLOBAL FINANCIAL CRISIS Prof. Dr. of Economics Kuznetsova O., Associate Prof. Ph.D. in Engineering Kuznetsov V., Associate Prof. Ph.D. in Engineering Makarov V.	13
PULSED DISCHARGE TECHNOLOGIES OF PROCESSING AND OBTAINMENT OF NEW MATERIALS (Review) Prof., Doctor of Science Sizonenko O., Prof., Doctor of Science Vovchenko A.	16
SESSION “MACHINES”	
SATELLITE PUMP AND MOTOR PhD. Eng. Śliwinski P.	20
COMPACT SATELLITE HYDRAULIC UNIT M.Sc. Patrosz P., PhD. Śliwinski. P.	24
COMPLEX ANALYSIS OF PERFORMANCE CHARACTERISTICS OF SINGLE PHASE SHADED POLE MOTOR Doc. d-r Vasilija Sarac	28
APPLICATION OF NUMERICAL METHODS IN CALCULATION OF ELECTROMAGNETIC FIELDS IN ELECTRICAL MACHINES Doc. d-r Vasilija Sarac, Goran Galvincic	33
УСТАНОВКА ДЛЯ АВТОМАТИЗИРОВАННОГО ОПРЕДЕЛЕНИЯ ГЕОМЕТРИЧЕСКИХ ПАРАМЕТРОВ ЯИЦ НА БАЗЕ СИСТЕМЫ ТЕХНИЧЕСКОГО ЗРЕНИЯ. К.Т.Н., доцент Алиханов Д.М. , магистр Молдажанов А.К.	37
PLATE HEAT EXCHANGER WITH POROUS STRUCTURE FOR POTENTIAL USE IN ORC SYSTEM Dr.Eng. Wajs J., Prof. Mikielewicz D., Dr.Eng. Fornalik-Wajs E.	41
INFLUENCE OF THE POSITION OF THE SWASH PLATE ROTATION AXIS ON THE VOLUMETRIC EFFICIENCY OF THE AXIAL PISTONS PUMPS MSc. Eng. Zaluski P.	45
BELT CONVEYOR DESIGN AND ANALYSIS İ.Gerdemeli, S. Kurt, E. T. Dayan	49
DAMAGE QUANTIFICATION RELIABILITY IN BEAMS USING INCOMPLETE STATIC INFORMATION Ass. Prof. Dr. Eng. Štimac Grandić I., Ass. Prof. Dr. Eng. Grandić D.	53
LATTICE (CAGE) BEAM DESIGN AND FINITE ELEMENT ANALYSIS OF GANTRY CRANE İ. Gerdemeli , S. Kurt, B. Bige	58
GEOMETRICAL SYNTHESIS OF FINE-MODULE RATCHET TOOTHING Assoc. Prof., Dr.Sc.(Eng.) Sharkov O.	61
DETERMINATION OF THE ENERGY NECESSARY FOR CARS BODY DEFORMATION BY APPLICATION OF THE NHTSA STIFFNESS COEFFICIENT Ph.D. Eng. Kubiak P., Ph.D. Eng. Wozniak M., Prof. M.Sc. Ozuna G.	65
PROBABILITY STRESS CONDITIONS IN MACHINE ELEMENTS Assoc. Prof. PhD Popov A.	68
DYNAMIC PARAMETERS OF A CHAIN TRANSMISSION IN METAL AND POLYMER DESIGN Dr. Sc. Pilipenko O., Phd Student Eng. Poluyan A.	70
UMT COMPANY PRESENTATION	74



SCIENTIFIC PROCEEDINGS

*OF THE SCIENTIFIC-TECHNICAL UNION
OF MECHANICAL ENGINEERING*

Year XXII

Volume 11/160

SEPTEMBER 2014

XI INTERNATIONAL CONGRESS MACHINES, TECHNOLOGIES, MATERIALS 2014

September 17 – 20 2014 VARNA, BULGARIA

XI МЕЖДУНАРОДЕН КОНГРЕС "МАШИНИ, ТЕХНОЛОГИИ, МАТЕРИАЛИ" 2014

17– 20 СЕПТЕМВИ 2014, ВАРНА, БЪЛГАРИЯ

VOLUME 1 ТОМ

PLENARY SESSION
ПЛЕНАРНА СЕСИЯ
SECTION „MACHINES”
СЕКЦИЯ „МАШИНИ”

ISSN 1310-3946