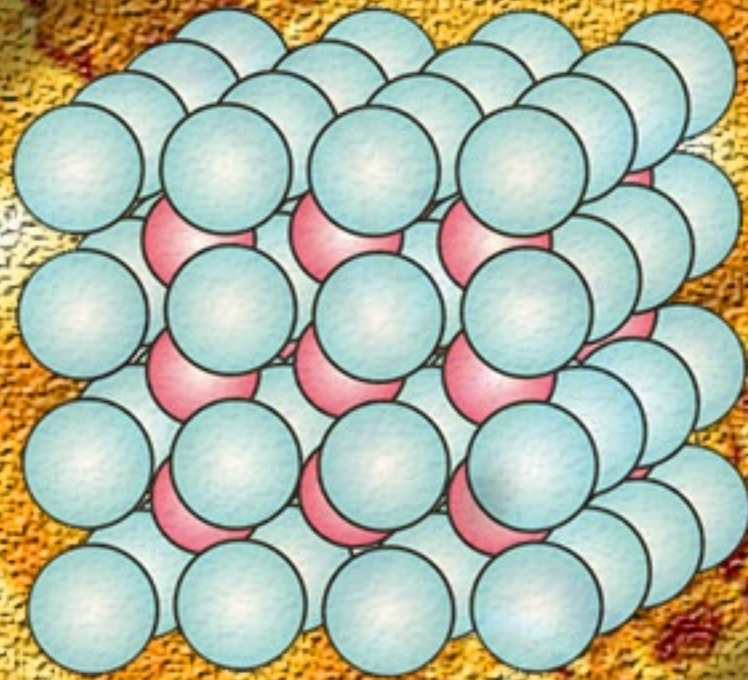


SCIENTIFIC TECHNICAL JOURNAL

"MATERIAL SCIENCE"



„NONEQUILIBRIUM PHASE TRANSFORMATIONS“

ISSUE 2/2016

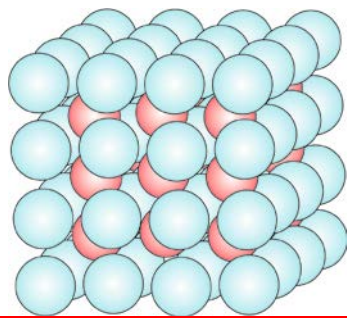
YEAR II, ISSN 2367-749X

PUBLISHER: SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING

108 Rakovski str., 1000 Sofia, Bulgaria

tel./fax (+359 2) 986 22 40, tel. (+359 2) 987 72 90, www.mech-ing.com

office@stumejournals.com, www.stumejournals.com



INTERNATIONAL JOURNAL MATERIALS SCIENCE. NON-EQUILIBRIUM PHASE TRANSFORMATIONS

PUBLISHER:

SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING

108, Rakovski Str., 1000 Sofia, Bulgaria
tel. (+359 2) 987 72 90,
tel./fax (+359 2) 986 22 40,
office@stumejournals.com

ISSN 2367-749X
YEAR II, ISSUE 2 / 2016

EDITORIAL BOARD

CHIEF EDITOR

Prof. Dimitar Stavrev – Bulgaria

DEPUTY EDITOR:

Dr. Alexander Krugljakow, Germany

Prof. Sergey Dobatkin, Russia

Prof. Sergey Nikulin, Russia

Prof. Victor Anchev, Bulgaria

RESPONSIBLE SECRETARY:

Assoc. Prof. Tsanka Dikova, Bulgaria

MEMBERS:

Prof. Adel Mahmud, Iraq
Prof. Anna Proikova, Bulgaria
Prof. Bekir Sami Yilbas, Saudi Arabia
Prof. Dermot Brabazon, Ireland
Prof. Dipten Misra, India
Assoc. Prof. Eugeny Grigoriev, Russia
Prof. F. W. Travis, United Kingdom
Prof. Gennagiy Bagluk, Ukraine
Assoc. Prof. Ibrahim E. Saklakoglu, Turkey
Prof. Iis Sopyan, Malaysia
Prof. Ivan Parshorov, Bulgaria
Prof. Ivanja Markova, Bulgaria
Prof. Janez Grum, Slovenia
Prof. Jens Bergstrom, Sweden
Prof. Leszek Dobrzanski, Poland

Prof. Ludmila Kaputkina, Russia
Prof. Nikolai Dulgerov, Bulgaria
Prof. Omer Keles, Turkey
Prof. Plamen Danev, Bulgaria
Prof. Rui Vilar, Portugal
Prof. Rusko Shishkov, Bulgaria
Prof. Saleem Hashmi, Ireland
Dr. Sefika Kasman, Turkey
Prof. Seiji Katayama, Japan
Prof. Souren Mitra, India
Dr. Sumsun Naher, United Kingdom
Prof. Svetlana Gubenko, Ukraine
Prof. Sveto Cvetkovski, Macedonia
Prof. Ventsislav Toshkov, Bulgaria
Prof. Yovka Dragieva, Bulgaria

CONTENTS

IMPROVING THE CASTING PROCESS OF PERITECTIC STEEL GRADES

Prof. dr. E. Chickarev, Post grad. st. C. Y. Hu, Prof. dr. O. Isayev2, Prof. dr. O. Hress, Prof. dr. K. M. Wu 3

NUMERICAL STUDY OF HEAT AND MASS TRANSFER AT INOCULATIONS FILING TO THE SLAB CC MOLD

Prof. dr. Hress O., Prof. dr. K. Wu, Prof. dr. Isayev O., post grad. st. Chebotaryova O., post grad. st. Cong Zhang, post grad. st. Chengyang Hu 6

METALLOGRAPHIC ANALYZE OF PARTS FOR BREAKING SYSTEM MADE OF NODULAR CAST IRON EN-GJS-500-7

Prof. Dr Cvetkovski. S. PhD., Prof. Nacevski G. PhD. 10

STUDY THE INFLUENCE OF ALLOYING ELEMENTS ON THE STRUCTURE OF IRON-BASED ALLOYS WITH HIGH CONTENT OF CARBON, MANGANESE AND CHROMIUM IN MODES OF HEAT TREATMENT

Assist. Prof. PhD eng. Gavrilova, R. Vl., Assoc. Prof. PhD eng. Petkov R. I., eng.Koleva E.M. 13

MICROSTRUCTURAL CHARACTERISTICS OF AS CAST Ti-Zr ALLOYS

Assist.Prof. Slokar Lj., M.Sc. Šipuš M.1, Prof.Dr. Bermanec V., Assoc.Prof. Štrkalj A., Assoc.Prof. Glavaš Z. 16

ELECTROCHEMICAL PROPERTIES AND CHARACTERISTICS OF BINARY AND TERNARY ALLOYS OF AL-ZN-MG SYSTEM

Prof. Dr. Eng. Kechin V.A. 19

GENESIS OF ELEMENTS AT PRIMARY ALUMINUM PRODUCTION

Prof. Dr. Eng. Kechin V.A., Assoc. Prof. Dr. Prusov E.S. 22

THE TIME FACTOR IN THE SPHEROIDIZING AND GRAPHITIZING MODIFICATION AND CAST IRON CRYSTALLIZATION

Lukianenko I.V., Fesenko M.A., Kosiachkov V.O., Fesenko. E.V. 25

EVALUATION OF FATIGUE LIMIT FOR ALUMINIUM ALLOYS BY ULTRASONIC MEASURING

MSc.Eng..Georgy Dobrev, Ass.Prof,PhD.,Alexander Popov 30