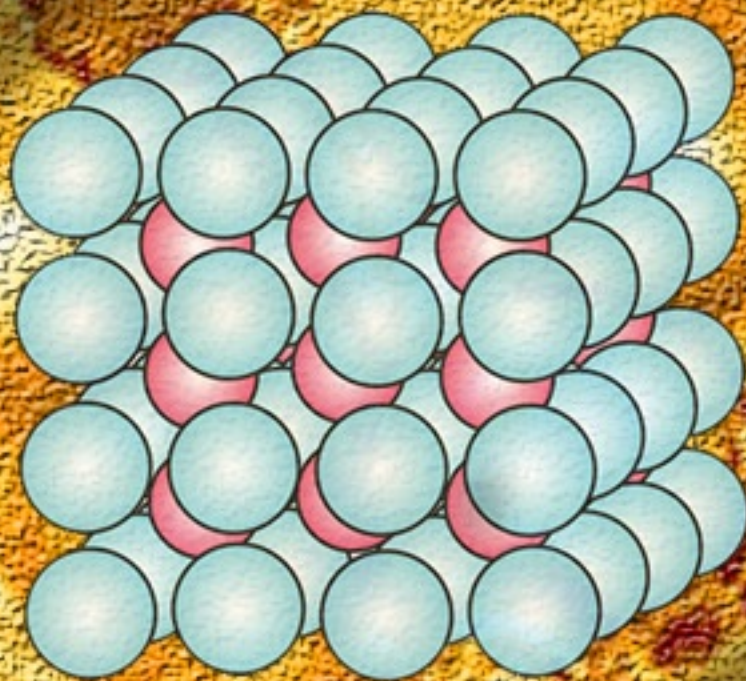


INTERNATIONAL SCIENTIFIC JOURNAL

"MATERIAL SCIENCE"



„NONEQUILIBRIUM PHASE TRANSFORMATIONS“

YEAR IV, ISSUE 2/2018

ISSN PRINT 2367-749X

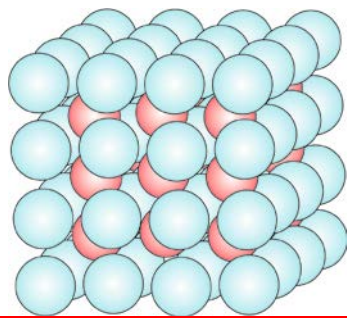
ISSN WEB 2534-8477

PUBLISHER: SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING
INDUSTRY 4.0

108 Rakovski str., 1000 Sofia, Bulgaria

tel./fax (+359 2) 986 22 40, tel. (+359 2) 987 72 90,

office@stumejournals.com, www.stumejournals.com



INTERNATIONAL SCIENTIFIC JOURNAL MATERIALS SCIENCE. NON-EQUILIBRIUM PHASE TRANSFORMATIONS

PUBLISHER:

**SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING
"INDUSTRY 4.0"**

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

**ISSN PRINT 2367-749X, ISSN WEB 2534-8477
YEAR IV, ISSUE 2/ 2018**

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

THE ROLE OF INTERFACES AND CHARGE OF A MOLECULE IN THE PROCESSES OF NONEQUILIBRIUM CRYSTALLIZATION OF PEPTIDE NANOBIO MATERIALS PhD , Ass. Prof., Loskutov A.	37
PECULIARITIES OF THE STRUCTURE FORMATION OF MATERIALS OF AL-CU AND AL-CU-C SYSTEMS UNDER THE CONDITIONS OF SPARK-PLASMA SINTERING Prof., Dr. of Science Syzonenko O., PhD Prystash M., PhD Zaichenko A, Kovalenko O.	41
THE THEORY OF DIRECT MARTENSITIC TRANSFORMATIONS OF STEELS PhD. Tech. Sci. Skoromnaya S.	45
EFFECT OF LOW-FREQUENCY VIBRATION ON THE STRUCTURE AND RESIDUAL STRESSES IN SLM Ti-6Al-4V ALLOY Kazantseva N., Rumyantsev S. Fefelov A., Merkushev A., Ezhov I., Vinogradova N. Davydov D.	49
MANUFACTURING OF IONIZING RADIATION SOURCE OF IRIDIUM-192 FOR GAMMA-DEFECTOSCOPES OF GAMMARID-192/120M Dr. Ashrapov U.T., Dr. Khujaev S.S., Dr. Khalikov U.A., Eng. Isaev Y.A.	52
COMPARATIVE INVESTIGATIONS OF THE MECHANICALLY ALLOYED and PRESSURELESS SINTERED Al-7 wt.% Si COMPOSITES REINFORCED WITH VARIOUS BORIDE PARTICLES M.Sc. Mertdinç S., M.Sc. Tekoğlu, E., Dr. Ağaoğulları, D., Prof. Dr. Öveçoğlu, M.L.	55
EFFECT OF CASE HARDENING PROCESS PARAMETERS OF ALLOY STEELS ON THEIR WEAR CHARACTERISTICS Prof. EL-Hebeary, M.R., MSc. EL-Sawy, E.E.T., Prof. EL-Bahloul, A.M.M.	59
DIRECT OBSERVATION OF THERMAL EFFECT APPEARANCE DURING GRAIN BOUNDARIES COMPLETE WETTING TRANSITION IN COPPER-BISMUTH SYSTEM Ass. Novikov A., PhD Kondratiev A., Prof. Dr. Eng. Bokstein D., Prof. Dr. Eng. Petelin A., PhD Novikova E.	63
ELECTRODEPOSITION OF SILVER AND ITS INFLUENCE ON THE FORMATION OF COATINGS OF MOLYBDENUM CARBIDE IN TUNGSTATE-MOLYBDATE-CARBONATE MELTS Prof., Dr. Sc. Malyshev V., Prof., Dr. Sc. Kushchevska N., Prof., Dr. Sc. Bagliuk G. D.Sc., Ph.Dr. Gab A., Ph. Dr. Lukashenko T., Prof., Dr. Sc. Gaune-Escard M.	66
DEVELOPMENT OF METHODS FOR CALCULATING THE NONEQUILIBRIUM PHASE TRANSFORMATIONS DURING THE CONDENSATION OF SUPERCOOLED STEAM IN THE TURBINE FLOW PATH Member-corresp., Dr., Prof. Shubenko O., PhD., Sen. Res. Babak M., PhD., Sen. Res. Senetskyi O., Eng. Senetskaya D.	69