

TABLE OF CONTENTS

NANOMECHANICS SCIENCE and TECHNOLOGY An International Journal

VOLUME 7

ISSUE 1

THERMODYNAMICS WITH ADDITIONAL PARAMETERS FOR POLYCRYSTALS <i>A. G. Knyazeva</i>	1
DEFINITION OF THE TERM "NANOCOMPOSITE" ON THE EXAMPLE OF NANOSTRUCTURED POLYMER/ORGANOCLAY COMPOSITES <i>A. K. Mikitaev, Yu. N. Karnet, & G. V. Kozlov</i>	27
THE ROLE OF MACROPORES IN THE STRUCTURE OF A POROUS ELECTRODE IN THE ELECTROCHEMICAL DOUBLE LAYER CAPACITOR: COMPUTER MODELING AND EXPERIMENTS <i>D. E. Vervikishko, Yu. G. Chirkov, V. I. Rostokin, & E. I. Shkol'nikov</i>	37
A NONSTATIONARY DYNAMIC PROBLEM ON THE EFFECTS OF SURFACE LOADS ON A HALF-SPACE WITH A NANOSIZED STRUCTURE WITHIN THE FRAMEWORK OF THE COSSERAT MEDIUM MODEL <i>A. S. Okonechnikov, L. N. Rabinskiy, D. V. Tarlakovskii, & G. V. Fedotenkov</i>	61
THE MICROSTRUCTURAL MODEL OF MECHANICAL BEHAVIOR OF A SHAPE-MEMORY ALLOY <i>I. V. Mishustin & A. A. Movchan</i>	77

ISSUE 2

OBTAINING NANODISPersed GRAPHITE PREPARATION FOR COATING ULTRATHIN MINERAL FIBERS <i>M. V. Prokofiev, G. E. Vishnevskii, S. Yu. Zhuravlev, & L. N. Rabinskiy</i>	97
--	----

**CALCULATION OF THE INTERGRANULAR ENERGY
IN TWO-LEVEL PHYSICAL MODELS FOR DESCRIBING
THERMOMECHANICAL PROCESSING OF POLYCRYSTALS
WITH ACCOUNT FOR DISCONTINUOUS DYNAMIC
RECRYSTALLIZATION**

N. S. Kondratev & P. V. Trusov

107

**MODELING THE HEALING OF MICRACKS IN METAL
STIMULATED BY A PULSED HIGH-ENERGY
ELECTROMAGNETIC FIELD. PART II**

K. V. Kukudzhanov & A. L. Levitin

123

**INVESTIGATION OF THE PROCESSES OF IGNITION
AND COMBUSTION OF LIQUID HYDROCARBON FUELS
WITH NANOADDITIVES**

*V. V. Bakulin, V. Yu. Velikodny, Yu. K. Levin,
& V. V. Popov*

149

**BIOSAFETY AND EFFECT OF NANOPARTICLES OF CeO₂
ON METABOLIC AND PROLIFERATIVE ACTIVITY
OF HUMAN MESENCHYMAL STEM CELLS IN VITRO**

*A. L. Popov, A. M. Ermakov, I. V. Savintseva, I. I. Selezneva,
R. A. Poltavtseva, E. I. Zaraisky, A. M. Poltavtsev,
I. E. Stepanova, V. K. Ivanov, & G. T. Sukhikh*

165

ISSUE 3

**GEOMETRIC ASPECTS OF THE THEORY OF INCOMPATIBLE
DEFORMATIONS. PART I. UNIFORM CONFIGURATIONS**

S. A. Lychev & K. G. Koifman

177

**CITRATE-STABILIZED NANOPARTICLES OF CeO₂ STIMULATE
PROLIFERATION OF HUMAN MESENCHYMAL STEM
CELLS IN VITRO**

*A. L. Popov, A. M. Ermakov, I. V. Savinstseva, I. I. Selezneva,
R. A. Poltavtseva, E. I. Zaraisky, A. M. Poltavtsev, A. A. Stepanov,
V. K. Ivanov, & G. T. Sukhikh*

235

**STRUCTURE OF CaCO₃ NANOCRYSTALS ON THE HEAT
EXCHANGER WALL AND IN A SUPERSATURATED
AQUEOUS SOLUTION**

S. I. Koshoridze & Yu. K. Levin

247

ISSUE 4

DO NANOSIZED RODS HAVE ABNORMAL MECHANICAL PROPERTIES? ON SOME FALLACIOUS IDEAS AND DIRECT ERRORS RELATED TO THE USE OF THE GRADIENT THEORIES FOR SIMULATION OF SCALE-DEPENDENT RODS <i>S. A. Lurie, D. B. Volkov-Bogorodsky, P. A. Belov, & E. D. Lykosova</i>	261
ON FEM EVALUATION OF STRESS CONCENTRATION IN MICROPOLAR ELASTIC MATERIALS <i>V. A. Eremeyev, A. Skrzat, & F. Stachowicz</i>	297
COMBINED INFLUENCE OF GENERATION AND COAGULATION OF NANOSIZED CRITICAL NUCLEI IN SUPERSATURATED SOLUTIONS <i>S. I. Koshoridze & Yu. K. Levin</i>	305
INFLUENCE OF MODIFYING ADDITIVES ON THE PHASE STABILITY AND RESISTANCE TO OXIDATION OF COATINGS BASED ON STABILIZED ZIRCONIUM DIOXIDE AND A CARBON-CARBON COMPOSITE MATERIAL <i>D. Yu. Sinitsyn, V. N. Anikin, S. A. Eremin, & B. V. Ryabenko</i>	311
A MATHEMATICAL MODEL OF MULTILAYER COATING DEPOSITION FROM PLASMA <i>S. A. Shanin</i>	335
EFFECTIVE LENGTH OF A NANOFILLER AND THE DEGREE OF REINFORCEMENT OF POLYMER/CARBON NANOTUBES (NANOFIBERS) NANOCOMPOSITES <i>A. Ch. Aygubova, Yu. N. Karnet, G. V. Kozlov, & G. M. Magomedov</i>	349
AUTHOR INDEX	355
SUBJECT INDEX	357
TABLE OF CONTENTS	359