

**LIST OF PAPERS PUBLISHED IN “PHYSICOCHEMICAL MECHANICS
OF MATERIALS” IN 2010**

<i>Kushnir R. M. and Protsyuk Yu. B.</i> Thermoelastic state of layered thermosensitive bodies of revolution with quadratic dependence of heat conductivity coefficients	1	7
<i>Bozhydarnik V. V. and Maksymovych O. V.</i> Determination of the stressed state at the edge cracks in a plate with a complex-shape hole	1	19
<i>Stadnyk M. M.</i> An elastic problem for a space with inclusions of arbitrary rigidity under shear	1	27
<i>Zhuravchak L. M. and Zabrodska N. V.</i> Non-stationary heat field in inhomogeneous materials with non-linear behaviour of their components	1	33
<i>Hachkevych O. R., Terletskyi R. F., Sosnovyi Yu. R., and Brukhail M. B.</i> Mechanical behaviour of cooled bodies with account of heat energy emission	1	42
<i>Shvabiuk V. I., Pasternak Ya. M., and Rotko S. V.</i> Refined solution of S. P. Tymoshenko's problem for an orthotropic beam on a rigid base	1	51
<i>Marchenko H. P.</i> The residual stresses effect on stress intensity factors for a surface crack in a rail head	1	57
<i>Sylvaniuk V. P., Marukha V. I., Yukhym R. Ya., and Onyshchak N. V.</i> Concrete strengthening as a result of pores and cavities filling	1	62
<i>Mirzamohammadi S., Aliov M. Kh., Sabur A. R., Hassanzadeh-Tabrizi A.</i> Study of wear resistance and nanostructure of tertiary Al ₂ O ₃ /Y ₂ O ₃ /CNT pulsed electrodeposited Ni-based nanocomposite	1	67
<i>Pokhmurskyi V. I. and Dovhunyk V. M.</i> Tribocorrosion of stainless steels (Review)	1	76
<i>Marynin V. H.</i> Cavitation resistance of modified surface layers of alloyed steels	1	86
<i>Marushchak P. O., Hladio V. B., Bishchak R. T., and Pylypenko A. P.</i> The influence of thermal cycles work on degradation of heat-resistant steel properties	1	90
<i>Kralia V. O., Moliar O. H., Trofimov V. A., and Khimko A. M.</i> Fretting-corrosion damage of steel units of a plane wing flap	1	96
<i>Skalskyi V. R. and Liasota I. M.</i> Estimation of the heat-affected zone with electron-beam welding of plates	1	103
<i>Bajic N., Sijacki-Zeravcic V., Rakin M., Kovacevic K.</i> Effect of welding regime and filler content on structure of microalloyed Nb/Ti steel weldments	1	110
<i>Dzhafarov V. A., Agaiev N. M., Alieva S. S., and Nadzhafova A. A.</i> Aminothiocarbamide-containing polyelectrolytes as inhibitors of acid corrosion of steel	1	118
<i>Slobodian Z. V., Mahlatiuk L. A., and Kupovych R. B.</i> The influence of polyacrylic acid on the protective properties of KORSOL inhibitor	1	123
Heorhii Volodymyrovych Karpenko (To the 100 th birthday)	2	5
<i>Panasyuk V. V.</i> Formation of a new scientific direction – physicochemical mechanics of materials	2	9
<i>Pokhmurskyi V. I.</i> Adsorption-electrochemical theory of corrosion fatigue of metals	2	21
<i>Dmytrakh I. M.</i> Physicochemical fracture mechanics of cracked bodies: achievements and prospects	2	31

<i>Nykyforchyn H. M., Student O. Z., Krechkovska H. V., and Markov A. D.</i>	
Assessment of technological process shut-downs on the change	
of technical state of HPP main steam pipeline metal	2 42
<i>Khoma M. S. Problems of metals fracture in hydrogen sulphide environments</i>	2 55
<i>Fedorov V. V. The influence of hydrogen on phase composition and physico-</i>	
<i>mechanical properties of structural materials.....</i>	2 67
<i>Ivanytskyi Ya. L., Kun P. S., Shtaiura S. T., and Mochulskyi V. M. Theoretical-</i>	
<i>experimental approach to estimation of fatigue crack growth</i>	
<i>in hydrogenated materials</i>	2 77
<i>Balitskii O. I., Vytytskyi V. I., Ivaskevych L. M., Mochulskyi V. M.,</i>	
<i>and Hrebeniuk S. O. High-temperature hydrogen resistance of stainless steels ..</i>	2 83
<i>Kravets V. S. A method of singular integro-differential equations</i>	
<i>for two-dimensional dynamic problems of fracture mechanics</i>	2 95
<i>Morachkovsky O. K. and Romashov Yu. V. Continual model of stress corrosion</i>	
<i>cracking crack growth for calculation of structural elements life time.</i>	2 111
<i>Vasyliv B. D. Improvement of electric conductivity of the anode fuel cell</i>	
<i>material with cyclic redox heat treatment</i>	2 117
<i>Kyazimova R. A. The alternative method of derivation of Yu. N. Rabotnov's</i>	
<i>formula for time to corrosion failure of metals</i>	2 121
<i>Hertsyk O. M., Borysiuk A. K., Kovbuz M. O., Bednarska L. M., Mitina N. Ye.,</i>	
<i>and Ponedilok H. V. The influence of dispersion and polymer coating</i>	
<i>on magnetic properties of Fe_{73,1}Cu_{1,0}Nb_{3,0}Si_{15,5}B_{7,4} amorphous alloy</i>	2 125
<i>Skoneczny W. Analysis of Al₂O₃ layers morphology and microstructure.....</i>	2 130
<i>Savruk M. P. and Tomczyk A. Pressure with friction of an absolutely rigid</i>	
<i>punch on an elastic half-space with cracks</i>	3 5
<i>Andreikiv O. Ye. and Sas N. B. Assessment of the period of subcritical growth</i>	
<i>of a high-temperature creep crack in a steam turbine wheel</i>	3 16
<i>Sakara A. O. and Banakheyvych Yu. V. Calculation model of subcritical</i>	
<i>corrosion-mechanical crack growth in metal plates</i>	3 23
<i>Kit H. S. and Cherniak M. S. The stress state of bodies with thermal cylindrical</i>	
<i>inclusions and cracks (plane deformation).....</i>	3 30
<i>Stadnyk M. M. An elliptical crack in a semi-space under effect of heat flow</i>	
<i>at infinity.....</i>	3 38
<i>Revenko V. P. Investigation of the stress-strain state of a finite cylinder</i>	
<i>under compression forces effect.....</i>	3 42
<i>Monastyrskyi B. and Kaczyński A. Contact interaction of two elastic</i>	
<i>half-spaces with a circular recess</i>	3 47
<i>Pohreliuk I. M., Vasyliv Kh. B., Fedirko V. M., and Samborskyi O. V.</i>	
<i>Structure and topography of titanium alloys surface after thermal-</i>	
<i>diffusion saturation from boron carbide in vacuum</i>	3 57
<i>Dzioba I. R. Properties of 13XMФ steel after operation and degradation</i>	
<i>in laboratory conditions</i>	3 65
<i>Hubenko S. I. Melting and crystallization of non-metallic inclusions</i>	
<i>and steel matrix under laser treatment.....</i>	3 73
<i>Shyrokov V. V. and Khlopyk O. P. Tribological properties and structural</i>	
<i>peculiarities of aluminium-tin pseudo alloys</i>	3 80
<i>Ivanytskyi Ya. L., Muravskyi L. I., Hembara O. V., Hvozdiuk M. M.,</i>	
<i>and Polovynko T. I. Evaluation of fracture energy of a composite</i>	
<i>by the method of digital speckl-correlation.....</i>	3 85
<i>Khoma M. S. and Sysyn H. M. The influence of corrosion in environments</i>	
<i>with different pH on local electrode potentials of steels</i>	3 92
<i>Kozlova I., Koptieva Zh., Zanina V., and Purish L. Microbial corrosion</i>	
<i>as technogenesis manifestation in biofilm, forming on the surface</i>	
<i>of underground constructions.....</i>	3 98

<i>Vrublevska T., Rydchuk M., Bonishko O., and Mykhalyna H.</i> Simple titrimetric method for the determination of osmium(IV) in chloride standard solutions and intermetallic alloys	3	108
<i>Chumalo H. V.</i> Service ability of 35XФ steel in hydrogen sulphide environments	3	116
<i>Hromadskyi D. H., Faticiev Yu. F., Stryzhakova N. H., and Malietin Yu. A.</i>		
Anodic processes on aluminium in aprotonic electrolytes based on tetraethylammonium tetrafluoroborates in acetonitrile	3	120
<i>Ostash O. P., Voldemarov O. V., Hladysh P. V., and Ivasyshyn A. D.</i> Assessment of degradation of the steel of pipelines by their structural, mechanical and electromechanical characteristics	4	5
<i>Shyrokov V. V., Vasyliv Kh. B., Arendar L. A., and Rudkovskyi Ye. M.</i>		
Peculiarities of formation and properties of boron-chromium coatings, obtained on steels in lithium melt	4	13
<i>Hubenko S. I.</i> Contact interaction zones in a steel matrix near inclusions under laser effect.....	4	21
<i>Stukhliak P. D. and Moroz K. M.</i> The influence of porosity in an epoxy matrix-polyvinyl alcohol-disperse filler system on impact toughness	4	27
<i>Mudryi S. I., Shtablavyi I. I., Skliarchuk V. M., Plevachuk Yu. O., Korolyshyn A. V., Yakymovych A. S., Shevernoga I. M., and Sidorov V. Ye.</i> Structure and electric resistance of Sn–Cu(Ag) solders within pre-crystallization temperature region	4	35
<i>Balytskii O. O.</i> The influence of hydrogen-charging on the properties of layered crystals of gallium and indium monoselenides	4	42
<i>Ünlü B. S.</i> Determination of tribological and mechanical properties of SnPbCuSb (white metal) bearings	4	47
<i>Liutyi P. Ya., Tokaichuk Ya. O., and Fedorchuk A. O.</i> Triple Cr–Ga–Si system at 870 K.....	4	53
<i>Stashchuk M. H.</i> Stress-initiated cathode and anode regions at the interface of elliptical hole and environment.....	4	60
<i>Monastyrskyi B. and Kaczyński A.</i> Contact strength of two elastic half-spaces with a circular recess.....	4	69
<i>Prokopovych I. B. and Osadchuk V. A.</i> Construction of the relation of stresses influence on magnetic permeability by the method of free deformation	4	78
<i>Khapko B. S.</i> Bending of a circular plate by heat sources distributed along the curve.....	4	84
<i>Hachkevych O. R. and Musii R. S.</i> Carrying ability of electric conductive elements of canonic form under effect of electromagnetic pulses	4	92
<i>Malanchuk N. I.</i> Local slip of bodies caused by a heterogeneous friction coefficient	4	98
<i>Yevtushenko O. O. and Pyriev S. Yu.</i> Main stresses in a semi-space caused by action of moving friction loading on its surface.....	4	106
<i>Pokhmurskyi V. I., Marukha V. I., Zin I. M., Hnyp I. P., and Bilyi L. M.</i> Inhibitor protection of iron-concrete steel reinforcement damaged by cracks.....	5	5
<i>Kornii S. A. and Kopylets V. I.</i> Quantum-chemical calculation of adhesion energy of contacting heterogeneous metals in environment	5	15
<i>Lampke T., Meyer D., Alisch G., Wielage B., Pokhmurska H., Klapkiv M., and Student M.</i> Corrosion and wear behaviour of alumina coatings obtained by various methods.....	5	23
<i>Boichyshyn L., Kubisztal J., Budniok A., and Kovbuz M.</i> The influence of iron additives on corrosion-resistance of Al ₈₇ Gd ₅ Ni ₈ amorphous metal alloy	5	30
<i>Kryzhanivskyi Ye. I., Yakym R. S., Shmandrovskyi L. Ye., and Petryna Yu. D.</i>		
Contact fracture of rolling bodies of three-cone rock bits opened bearings in water environments.....	5	37
<i>Morachkovsky O. K. and Romashov Yu. V.</i> Prediction of stress corrosion cracking of structures subjected to high-temperature creep	5	43

<i>Ziliukas A. K., Januteniene J., Nykyforchyn H. M., and Bereisa M.</i> Evaluation of corrosion defects in oil pipe-lines using fracture mechanics approaches	5	48
<i>Tsyrulnyk O. T., Voloshyn V. A., Petryna D. Yu., Hredil M. I., and Zvirko O. I.</i> Degradation of welded joint metal of the exploited main gas pipeline.....	5	55
<i>Vynar V. A., Dovhunyk V. M., and Student M. M.</i> Methodical peculiarities of tribocorrosion investigations	5	59
<i>Arkhypov O. H., Khoma M. S., Borysenko V. A., Lipko H. V., Zinchenko O. V., Boyarchuk O. H., and Kovaliov D. O.</i> Degradation of 09Г2С steel in the conditions of oil-refining	5	65
<i>Gordienko V. O., Protsenko V. S., Kwon S. C., Lee J.-Y., and Danilov F. I.</i> Electrodeposition of chromium coatings from sulfate-carbamide electrolytes on the base of Cr(III) compounds.....	5	71
<i>Ostash O. P., Vasyliv B. D., Podhurska V. Ya., Vasyliev O. D., Brodnikovskyi Ye. M., Ushkalov L. M.</i> Optimization of 10Sc1CeSZ–NiO composite properties by redux processing	5	76
<i>Matychak Ya. S., Pohreliuk I. M., and Fedirkо V. M.</i> Kinetic peculiarities of ($\alpha+\beta$)-titanium alloys nitriding.....	5	82
<i>Suberliak O. V., Krasinskyi V. V., Shapoval Yo. M., and Hrytsenko O. M.</i> The influence of mechanism and parameters of hardening of modified new laquer phenolformaldehyde resins on composite physicomechanical properties	5	89
<i>Kovalik M.</i> The influence of deformation on material structure and properties under longitudinal cold rolling of stepped shafts	5	97
<i>Rozumek D. and Marcinia k Z.</i> Fatigue crack growth in AlCu4Mg1 under non-proportional bending with torsion loading.....	5	102
<i>Pashechko M. I.</i> Wear resistance of Fe–Mn–C–B eutectic coatings alloyed with Si, Ni and Cr	5	109
<i>Havrysh V. I., Fedasiuk D. V., and Kosach A. I.</i> Boundary problem of heat conductivity for a layer with foreign cylindrical inclusions.....	5	115
<i>Savruk M. P. and Kazberuk A.</i> Antisymmetric stress distribution in an elastic solid with a sharp or rounded V-shaped notch.....	6	5
<i>Bohdanov V. R. and Sulym H. T.</i> Crack growth resistance evaluation based on the numerical modeling of the plane strain state.....	6	16
<i>Kulchytsky-Zhyhalo R. and Bajkowski A.</i> An elastic half-space with a heterogeneous coating under tangential forces effect	6	25
<i>Shevchuk V. A. and Kalyniak B. M.</i> Stress state of cylindrical bodies with multilayer inhomogeneous coatings.....	6	35
<i>Sylvaniuk V. P., Yukhym R. Ya., and Horbach P. V.</i> Deformation and fracture of materials near spheroidal inclusions	6	42
<i>Stashchuk M. H. and Dorosh M. I.</i> Calculation of the deformed state of cellular pipes in inhomogeneous soil.....	6	47
<i>Ivanytskyi Ya. L., Hembara O. V., Smiyan O. D., and Kovalik M.</i> Evaluation of hydrogen concentration in the process zone at the crack tip.....	6	51
<i>Drobenko B. D.</i> Computer modeling of deformation of the elements of operating power equipment elements with damages	6	56
<i>Ostash O. P., Muravskyi L. I., Voroniak T. I., Kmet A. B., Andreiko I. M., and Vira V. V.</i> Determination of fatigue process zone size by the method of phase-shear interferometry	6	61
<i>Nazarchuk Z. T., Kulynych Ya. P., and Koval O. S.</i> The influence of a circular crack on electromagnetic field in a conductor	6	68
<i>Andreikiv O. Ye., Skalskyi V. R., Rudavskyi D. V., Serhiienko O. M., and Matviiv Yu. Ya.</i> Magneto-acoustic diagnostics of thin-wall ferromagnetics containing plane cracks	6	72
<i>Musii R. S.</i> The stress state of an electric-conducting sphere under electro-magnetic effect with a pulse modulation signal	6	76

<i>Filshynskii L. A., Shramko Yu. V., and Kovalenko D. S.</i> The averaging of magnetic properties of fibrous ferromagnetic composites	6	82
<i>Toribio J., Kharin V., Vergara D., and Lorenzo M.</i> Optimization of the simulation of stress-assisted hydrogen diffusion for studies of hydrogen embrittlement of notched bars.....	6	91
<i>Pohreliuk I. M., Tkachuk O. V., and Samborskyi O. V.</i> The influence of oxynitriding on wear-resistance of BT14 titanium alloy	6	106
<i>Yanjun Xi, Yongjun Liu, Zhixin Wang, and Jinbin Lu.</i> Oxidation behavior and electrochemical corrosion performance of Ti ₃ Al alloy with TiAl coating	6	113

SCIENCE FOR PRODUCTION

<i>Kirilov K. I. and Kraievskyi V. M.</i> Evaluation of residual life of chemico- technological equipment of Odesa near-port plant.....	4	112
<i>Marushchak P. O., Bishchak R. T., Hlikha V., and Sorochak A. P.</i> The influence of temperature on impact toughness and dynamic crack growth resistance of 25X1M1Ф steel	4	118

SHORT REPORTS

<i>Zhuravel I. M. and Svirskaya L. M.</i> Measuring of the averaged size of a metal grain, using fractal dimension	3	126
<i>Podhurska V. Ya.</i> Structural changes in ScCeSZ–NiO ceramics in high-temperature hydrogen environment.....	3	129
<i>Yasnii P. V., Marushchak P. O., Nikiforov Yu. M., Hladio V. B., and Kovaliuk B. P.</i> The influence of laser-impact treatment on impact toughness of heat-resistant steels	3	132

IN SCIENTIFIC CIRCLES

<i>Stashchuk M. H.</i> Problems of brittle fracture mechanics	1	126
<i>Pichuhin A. T.</i> Problems of materials science and surface engineering of metals	1	129
<i>Veselivska H. H.</i> Corrosion. Corrosion protection of metals	1	131
<i>Rytsar D. I.</i> Defence of dissertations	1	135
<i>Krutsan H. M.</i> To the 100-birthday of academician H. V. Karpenko	4	122
<i>Datsyshyn O. P.</i> International scientific-technical conference “Modern problems of tribology”	4	126
<i>Dmytrakh I. M. and Student O. Z.</i> The Eighteenth European Conference on Fracture Mechanics, ECF-18	5	121
<i>Dietzel W., Gabetta G., Nykyforchyn H. M.</i> 20 years of ESIS TC10 on environmentally assisted cracking	5	126
<i>Dmytrakh I. M. and Student O. Z.</i> The First Greek-Ukrainian Symposium on Fracture Mechanics of Materials and Structures	6	118
<i>List of papers published in “Physicochemical Mechanics of Materials” in 2010</i>	6	122
<i>Authors’ index</i>	6	127