

**LIST OF PAPERS PUBLISHED IN “PHYSICO-CHEMICAL MECHANICS OF MATERIALS” IN 2013**

<i>Marukha V. I.</i> Improvement of serviceability of damaged concrete and iron-concrete constructions by sealing-strengthening injections.....1	7
<i>Ostash O. P., Andreiko I. M., Markashova L. I., Holovatiuk Yu. V., Semenets O. I., and Kovalchuk L. B.</i> The influence of durable exploitation on the structure and physico-mechanical properties of Д16 and B95 aluminium alloys .....1	18
<i>Andreikiv O. Ye., Skalskyi V. R., Matviiv Yu. Ya., and Dolinska I. Ya.</i> Micromechanisms and calculation model of low-temperature creep crack growth in materials .....1	28
<i>Jankowiak A. and Jakubczak H.</i> Modeling of fatigue crack growth in plates under arbitrary Mode I stress .....1	38
<i>Prokopyshyn I. I., Dyyak I. I., and Martynyak R. M.</i> Numerical analysis of the problems of three elastic bodies contact by domain decomposition methods.....1	46
<i>Pokhmurskii V. I., Kopylets V. I., and Korniy S. A.</i> Modelling of corrosive-electrochemical process at the metal–electrolyte interface .....1	56
<i>Shcheretskyi O. A., Starchak V. G., and Gorbunova T. A.</i> Investigation of peculiarities of phase interaction and corrosion resistance of boron-aluminium composites by synchronous thermal analysis.....1	60
<i>Vynogradov D. V., Voyevodin V. M., Tikhonovsky M. A., Kolodiy I. V., and Bovda O. M.</i> The influence of zirconium structural state on the parameters of hydrogen sorption and desorption .....1	66
<i>Yavorskiy V. T., Perekupko T. V., and Mydriy O. O.</i> Physicochemical properties of silver powders obtained by contact magnesium precipitation.....1	72
<i>Markovsky P. Ye. and Ikeda Masahiko.</i> Alloying elements influence on aging of low-cost metastable titanium beta-alloys .....1	78
<i>Mechnyk V. A.</i> Regularities of structure formation in the system diamond–Fe–Cu–Ni–Sn–CrB <sub>2</sub> .....1	85
<i>Kumar R., Kumar A., Singh S., and Pandey O. P.</i> Reduction of WO <sub>3</sub> to WC nanoparticles by reflux reaction .....1	93
<i>Bieloshenko V. O. and Vozniak Yu. V.</i> Microhardness of oriented amorphous polycrystalline polymers .....1	99
<i>Kryzhanivskiy Ye. I., Hrabovskiy R. S., and Mandryk O. M.</i> Assessment of serviceability of long-term operating oil pipelines by the parameters of their defectiveness .....1	105
<i>Hrybovska V. I., and Chepil R. V.</i> Evaluation of durability of elastic terminals of railway fastening КПП-5 .....1	111
<i>Balitskii O. I., Kawiak M., and Kawiak P.</i> Assessment of fatigue damage of the sea ship propeller shaft.....1	116
<i>Vasylyv B. D., Podhurska V. Ya., Ostash O. P., Vasylyev O. D., and Brodnikovskiy Ye. M.</i> The influence of the reducing and oxidizing environments on physicochemical properties of ScCeSZ–NiO and YSZ–NiO ceramics .....2	5
<i>Fedirko V. M., Pohrelyuk I. M., and Kravchyshyn T. M.</i> Kinetics of thermodiffusion saturation of BT22 titanium alloy by nitrogen in a temperature range of 800...950°C.....2	14
<i>Berezovets V. V., Denys R. V., Zavaliiy I. Yu., Paul-Boncour V., and Pecharsky V.</i> Peculiarities of hydrogen sorption-desorption by ternary Mg–M–Ni (M = Al, Mn, Ti) alloys .....2	26
<i>El Abdi R., Rujinski A. D., Boumbimba R. M., and Poulain M.</i> Cetyltrimethyl-ammonium chloride influence on silica optical fiber strength .....2	35

<i>Kharchenko Ye. V., Kychma A. O., Savula R. S., and Chumalo H. V.</i> Effect of local plastic deformations on physicomaterial properties of material and the pipeline stress state.....2	43
<i>Andreikiv O. Ye. and Hembara O. V.</i> The influence of soil corrosion and transported products on lifetime of oil and gas pipelines welded joints.....2	52
<i>Hohman O. P., Volchok N. A., and Fassmann D.</i> Distribution of microdamages of low-carbon steel St1.03 12 sheets under tension with different velocities.....2	59
<i>Moshchenok V. I.</i> Approbation of the methods of materials hardness determination.....2	65
<i>Kotur B., Babizhetskyy V., Bauer E., Kneidinger F., Danner A., Leber L., and Michor H.</i> Metal site doping in the narrow-gap semiconductor FeGa <sub>3</sub> .....2	69
<i>Onishchenko D. V.</i> Mechanochemical synthesis of multi-wall carbon nanotubes from sphagnum moss.....2	76
<i>Toribio J., Lorenzo M., Vergara D., and Kharin V.</i> Hydrogen embrittlement of cold drawn prestressing steels: the role of the die inlet angle.....2	81
<i>Balitskii O. I. and Abramek K. F.</i> Diagnostic parameters of ware of the piston-hob-cylinder system.....2	89
<i>Skalskyi V. R., Rudavskyy D. V., Yarema R. Ya., and Dubytskyy O. S.</i> Residual life time of the elastic element of spring sheet under hydrogen-mechanical factor effect.....2	92
<i>Musii R. S.</i> The stress state of a hollow electric conducting sphere under electric magnetic effect in the conditions of sinusoidal decay.....2	97
<i>Derpenski L. and Seweryn A.</i> Numerical analysis of strain and stress state in cylindrical notched tensile specimens.....2	105
<i>Ihnatovych S. R., Karan Ye. V., and Krasnopolskyi V. S.</i> The fatigue crack length probability distribution in rivet joints of a plane.....2	109
<i>Panchenko O. V.</i> Methods of evaluation of the stress-strain state in reinforced iron-concrete structures.....2	116
<i>Voroniak T. I., Ivanytskii Ya. L., Muravskii L. I., and Semenets O. I.</i> Study of composite material deformation and fracture by means of electronic speckle-pattern interferometry.....2	121
<i>Tatarchenko G. O.</i> Temperature dependence of the ozone recovery kinetics on the platinum surface.....2	126
<i>Pokhmurskii V. I., Bilyi L. M., and Zin Ya. I.</i> Corrosion-resistant inhibited coatings for welded joints of pipelines.....3	7
<i>Glushkova M. O., Ved M. V., and Sakhnenko M. D.</i> Corrosion properties of silver-cobalt alloy coatings.....3	17
<i>Zin I. M., Khlopyk O. P., and Holovchuk M. Ya.</i> Protective action of non-organic inhibitors on mechanically activated aluminium surface.....3	22
<i>Tkalenko D. A., Vyshnevskaya Yu. P., Gerasymenko Yu. S., and Khirch-Yalan I. F.</i> Change of polarization resistance during formation of protective phase layers with organic ligands.....3	28
<i>Slobodian Z. V., Mahlatiuk L. A., and Kupovych R. B.</i> The influence of carbon dioxide and gas condensate on steel 20 corrosion rate in deaerated NACE solutions.....3	34
<i>Chyhyrynets O. E. and Vorobiova V. I.</i> Anticorrosive properties of extract of oil cake rapeseeds as volatile corrosion inhibitors for mild steel.....3	39
<i>Obraztsov V. B., Rubliova Ye. D., and Amirulloyeva N. V.</i> The influence of Zn <sup>2+</sup> -ions on the inhibiting properties of polyhexamethyleneguanidine derivatives.....3	46
<i>Khoma M. S., Chuchman M. R., Ivashkiv V. R., and Sysyn H. M.</i> The influence of cyclic loading on fracture resistance of pipe steels and their weld joints in hydrogen sulphide environments.....3	52
<i>Snizhnoi G. V.</i> Dependence of corrosion behaviour of austenitic chromium-nickel steels on the paramagnetic state of austenite.....3	58
<i>Skrebtsov A. A., Pohrelyuk I. M., Lukyanenko O. H., and Pichuhin A. T.</i> The influence of oxidation on the corrosion resistance of sintered titanium.....3	63
<i>Malyshev V. V. and Shakhmin D. B.</i> Corrosion resistance of nanopowders of IV-VIB group metal borides and carbides in nickel plating electrolytes.....3	70
<i>Duriahina Z. A. and Pidkova V. Ya.</i> Structure of aluminum nitride layers formed under ion-plasma spraying.....3	74

<i>Yavorskyi V. T., Znak Z. O. and Mnykh R. V.</i> The influence of cavitation treatment on physicochemical properties of calcium hydroxide .....	3	80
<i>Vynar V. A. and Dykha M. O.</i> The influence of the stress-strain state on wear-resistance of 40X steel surface after discrete electromechanical treatment .....	3	86
<i>Balitskii O. I., Havryliuk M. R., Deviatkin R. M., and Fedusiv I. R.</i> Application of modified sun flower oil as emulsifier of lubricating-cooling liquids .....	3	92
<i>Stashchuk M. H.</i> Corrosive currents at the cathode and anode areas of circular stress concentrator .....	3	96
<i>Hredil M. I.</i> Express-method of evaluation of the influence of reinforcement corrosion on integrity of reinforced concrete .....	3	102
<i>Voloshyn V. A. and Kosarevych R. Ya.</i> Peculiarities of the analysis of the initial stage of corrosion-erosion fracture of high-strength steel .....	3	105
<i>Chervatyuk V. A. and Kushnir I. M.</i> Corrosion-resistant coatings based on polymer-bitumen composition with high speed of formation .....	3	110
<i>Vankevych P. I.</i> Selection of optimal tribological characteristics of materials in devices for checking temperature of moving objects .....	3	114
<i>Kyryliv V. I.</i> Nitriding of steels under mechanopulse treatment.....	3	118
<i>Onyshchuk O. O. and Rud V. D.</i> Structure and tribological characteristics of TiFe-xC materials obtained by self-propagating high-temperature synthesis .....	3	123
<i>Nazarchuk Z. T., Dzhala V. R., and Syniavskyi A. T.</i> Detection of subsurface heterogeneities in dielectric materials by radio wave super-frequency method .....	4	7
<i>Lobanov L. M. and Pivtorak V. A.</i> Diagnostics of structures using methods of electron shearography and speckle-interferometry .....	4	23
<i>Tsyurulnyk O. T.</i> Use of the electrochemistry methods in diagnostics of the technical state of structural materials .....	4	29
<i>Vdovychenko O. V.</i> Use of mechanical resonance techniques for detection of damage in steam pipeline steels after service .....	4	40
<i>Vorobel R. A., Ivashenko I. B., Mandzii T. S., and Botsian V. V.</i> The influence of primary treatment on segmentation of X-ray images of welded joints .....	4	48
<i>Koshovyi V. V., Mokryi O. M., Gredil M. I., and Romanyshyn I. M.</i> Investigation of space distribution of surface acoustic waves velocity in plastically deformed steel by the laser method.....	4	56
<i>Pokhmurskii V. I., Korniy S. A., and Kosarevych B. P.</i> Investigation of hydrogen adsorption and diffusion in iron clusters by the method of density functional.....	4	62
<i>Konovalenko I. V., Marushchak P. O., and Bishchak R. T.</i> Automated assessing of damages of the main gas pipeline surface by corrosion pittings .....	4	70
<i>Kharchenko Ye. V., Polishchuk L. K., and Zvirko O. I.</i> Evaluation of service degradation of profile steel of edge-forming boom.....	4	77
<i>Voroniak T. I.</i> Determination of the Poisson's ratio by two step phase-shifting interferometry technique .....	4	83
<i>Rusyn B. P., Anufriyeva N. P., Hrabovska N. R., and Ivaniuk V. H.</i> Non-destructive control of the surfaces state damaged by corrosive pits.....	4	90
<i>Arkhyrov O. G., Nikhaienko Yu. Ya., Borysenko V. A., Khoma M. S., and Liubimova-Zinchenko O. V.</i> Exploitation degradation of mechanical properties of ammonia pipeline metal .....	4	97
<i>Shapovalov Ye. V., Galagan R. M., and Klishchar F. S.</i> Development of methodologies for acoustic-emission control of contact spot welding .....	4	103
<i>Skalskyi V. R., Pochapskyi Ye. P., Klym B. P., and Simakovych O. H.</i> Model of emission diagnostic light signal.....	4	109
<i>Matsko I. Yo., Javorskyj I. M., Yuzefovych R. M., and Zakrzewski Z.</i> Stochastic dynamic model of signals of roll bearing vibration and their analysis .....	4	119
<i>Mindiuk V. D., Karpash O. M., and Karpash M. O.</i> Character of the microstructure relation with physico-mechanical properties of continuous service steels .....	4	129
National Academy of Sciences of Ukraine (to the 95-anniversary of foundation) .....	5	5
<i>Panasjuk V. V., Dmytrakh I. M., Tóth L., Bilyy O. L., and Syrotjuk A. M.</i> Method for serviceability and fracture risk assessment of structural elements with crack-like defects .....	5	10

<i>Kravets V. S. and Savruk M. P.</i> Axisymmetric torsion problem for elastic space with smooth and acute-angled cuts .....	5	21
<i>Datsyshyn O. P., Hlazov A. Yu., and Levus A. B.</i> Peculiarities of the edge crack faces contact under moving Hertzian loading .....	5	31
<i>Pasternak Ya. M., Sulym H. T., and Oliyarnyk N. R.</i> Antiplane deformation of anisotropic solids containing periodic sets of thin inhomogeneities .....	5	42
<i>Stashchuk M. H. and Dorosh M. I.</i> Methods of calculation of strength of polyethylene pipes with a cellular wall (A review) .....	5	51
<i>Andreykiv O. Ye. and Sas N. B.</i> Determination of the subcritical creep crack growth period in a steam pipeline pipe .....	5	63
<i>Mirsalimov V. M. and Gasanov F. F.</i> Solution of the periodic problem about cohesive cracks development under longitudinal shear .....	5	68
<i>Ivanytskyi Ya. L., Shtayura S. T., Lenkovskii T. M., and Molkov Yu. V.</i> Determination of crack growth resistance characteristics of 17Г1С steel under transversal shear .....	5	73
<i>Hvozdiuk M. M., Babyak I. P., Hembara T. V., and Kostiv R. B.</i> Static and fatigue strength of basalt reinforcement .....	5	79
<i>Kulchitsky-Zhyhailo R. and Bajkowski A.</i> Elastic coating with inhomogeneous interlayer under normal and shear loading .....	5	84
<i>Sakharuk O. M., Muravskii L. I., Holynskii I. S., and Lychak O. V.</i> Determination of the local displacement field by the digital speckle correlation technique with image adaptive segmentation .....	5	92
<i>Ostash O. P., Voldemarov O. V., and Hladysh P. V.</i> Diagnostics of the structural-mechanical state of steam pipeline steels by coercive-metric method and prediction of their life time .....	5	98
<i>Markashova L. I. and Kushnariova O. S.</i> The influence of structure on the mechanical properties of weld metal in welded joints of Al–Cu–Li aluminium alloys .....	5	112
<i>Matychak Ya. S., Fedirko V. M., Pohrelyuk I. M., Tkachuk O. V.</i> Kinetics of diffusion saturation of BT1-0 titanium alloy by nitrogen and oxygen at a temperature of 950°C .....	5	119
<i>Buketov A. V., Sapronov O. O., Brailo M. V., and Aleksenko V. L.</i> The influence of ultrasonic treatment on the physical, mechanical and thermal properties of epoxy nanocomposites .....	5	126
<i>Kulynych Ya. P. and Tryhub I. I.</i> Detection of subsurface local defects of metallic structures using the method of correlation signal processing .....	5	133
<i>Panasjuk V. V., Savruk M. P., and Kazberuk A.</i> Stress concentration near sharp and rounded V-shaped notches .....	6	7
<i>Rozumek D.</i> Review of formulas to describe the fatigue crack growth rate .....	6	18
<i>Stasyuk B. M.</i> The influence of a gas-filled cavity of complex shape on stresses in the vicinity of neighboring crack .....	6	28
<i>Dovbnia K. M. and Shevtsova N. A.</i> Two collinear cracks with contacting edges in the orthotropic shell of arbitrary curvature under bending .....	6	31
<i>Ivanytskyi Ya. L., Lenkovskii T. M., Boiko V. M., and Shtayura S. T.</i> The method of fatigue fracture kinetic curves plotting of steels under transversal shear taking into account the crack edges friction .....	6	41
<i>Stadnyk M. M.</i> An elastic ellipse-shaped inclusion in a body under temperature effect on the surface of the inclusion and body joint .....	6	46
<i>Hembara N. O.</i> The influence of anticorrosive multilayer coating on thermoelasticity of round plates .....	6	50
<i>Matychak Ya. S., Fedirko V. M., Pohrelyuk I. M., and Tkachuk O. V.</i> One- and two-component diffusion saturation of titanium with interstitial elements .....	6	55
<i>Poshyvalov V. P., Borshchevska D. G., Riabchii V. D., and Telegina I. I.</i> The increase of AMg6M alloy durability due to energy processing in the creep conditions .....	6	62
<i>Nykyforchyn H. M., Kutnyi A. O., Student O. Z., Krechkovska H. V., Zvirko O. I., and Kurnat I. M.</i> Structure and properties of long-term operated steels of hyperboloid mesh Shukhov's towers .....	6	70
<i>Maruschak P. O., Konovalenko I. V., Mocharskyi V. S., Sorochak A. P., and Rabyk B. I.</i> Computer analysis of surface morphology of 15X13MΦ steel		

after laser pulse treatment .....	6	79
<i>Podhurska V. Ya., Vasylyv B. D., Ostash O. P., Vasylyev A. D., and Brodnykovskyi Ye. M.</i> Structural transformations in NiO-containing anode of ceramic fuel cells during its reduction and oxidation .....	6	87
<i>Tor-Swiatek A., Suberliak O., Krasinsky V., and Dulebova L.</i> Distribution and geometrical characteristics of pores and strength properties of the extrudate obtained in the twin screw extruder process.....	6	93
<i>Popovych P. V. and Slobodian Z. V.</i> Corrosion and electrochemical behavior of steel 20 and Ст.3 in ammonium sulphate and nitrophoska environments.....	6	100
<i>Ledovskykh V. M., Levchenko S. V., and Tulainov S. M.</i> Synergic extremes of metal corrosion inhibitor mixtures in aqueous salt solutions.....	6	107
<i>Malyshev V. V., Gab A. I., and Astrelin I. M.</i> Corrosion and electrochemical behaviour of aluminium and high-temperature synthesis of aluminium diboride in halide-oxide melts.....	6	112
<i>Nazarchuk Z. T., Skalskyi V. R., and Stankevych O. M.</i> A method of structural materials macro-fracture types identification by the parameters of acoustic emission signals wavelet transform .....	6	119
<i>Voytko M. V.</i> Determination of resonance frequencies during impedance defect probing by elastic SH-wave on the interface of a rigid joint of the layer and half-space .....	6	127
<i>Teterko A. Ya., Uchanin V. M., and Hutnyk V. I.</i> Improvement of accuracy of Eddy current testing of material electric conductivity and dielectric coating thickness of shells .....	6	133
<b>IN SCIENTIFIC CIRCLES</b>		
<i>Rytsar D. I.</i> Defence of dissertations .....	1	119
<i>Stashchuk M. H.</i> Scientific seminar “Problems of brittle fracture mechanics” .....	1	121
<i>Pichuhin A. T.</i> Scientific seminar “Problems of materials science and metal surface engineering” .....	1	123
<i>Veselyvska H. H.</i> Scientific seminar “Corrosion. Corrosion protection of metals” .....	1	125
<i>Voitko M. V.</i> Scientific-training seminar for young scientists “PhMI Scientific Schools – from generation to generation” .....	1	128
<i>Student O. Z.</i> Theoretical and experimental investigations in technologies of modern materials science and engineering .....	3	129
<i>The phenomenon of thermal stabilization in metal-polymer friction couples .....</i>	3	131
<i>Tóth L. and Nykyforchyn H. M.</i> The 13 <sup>th</sup> Polish-Ukrainian-German Summer School on Fracture Mechanics and Strength of Materials.....	5	138
<i>Nykyforchyn H. M.</i> 140 years of the Scientific T. Shevchenko Society: contribution of O. M. Romaniv into the development of Ukrainian science.....	6	140
<b>JUBILEES</b>		
<b>Vasyl Pokhmurskii</b> (to the 80 <sup>th</sup> birthday) .....	4	134
<b>List of papers published in “Physicochemical Mechanics of Materials” in 2013 .....</b>	6	142
<b>Authors’ index.....</b>	6	147