

LIST OF PAPERS PUBLISHED IN ‘PHYSICOCHEMICAL MECHANICS OF MATERIALS’ IN 2018

National Academy of Sciences of Ukraine (to the 100 th anniversary of foundation) ..1	7
<i>Panasyuk V. V.</i> Lviv scientific school on mechanics of materials and materials science: development and achievements.....1	12
<i>Nazarchuk Z. T. and Nykyforchyn H. M.</i> Structural and corrosion fracture mechanics as components of physicochemical mechanics of materials1	7
<i>Student M. M., Pokhmurs'ka H. V., and Zadorozhna Kh. R.</i> Structure and wear resistance of VC–FeCr and VC–FeCrCo coatings obtained by supersonic gas-flame spraying.....1	31
<i>Luk'yanenko O. H., Pohrelyuk I. M., Pobel I. L., Trush V. S., and Lavrys S. M.</i> Improvement BT6 titanium alloy antifriction properties1	38
<i>Hvozdetskyi V. M.</i> Abrasive wear resistance of alloyed electric arc sprayed coatings from powder wires.....1	46
<i>Levytskyi V. Ye., Masiuk A. S., Bialopiotrowicz T., Bilyi L. M., and Humenetskyi T. V.</i> Thermoplastic composites with modified silicate fillers: morphology and properties.....1	53
<i>Stechyshyn M. S., Stechyshyna N. M., Martynyuk A. V., and Luk'yanyuk M. M.</i> Strength and plasticity of metal surface alloys nitrated in glow discharge1	59
<i>Andreikiv O. Ye., Skalskyi V. R., Dolinska I. Ya., and Dzyubyk A. R.</i> Corrosion and hydrogen environment influence on the residual resource of structural elements under maneuvering regime of their operation1	64
<i>Kindrachuk M. V., Volchenko O. I., Volchenko D. O., Zhuravliov D. Yu., and Chufus V. M.</i> Energodynamics of contact-friction interaction in metalpolimeric friction pairs.....1	71
<i>Vakulenko I. O., Bolotova D. M., and Gryshchenko M. A.</i> Influence of electrical discharge shock wave on the fatigue characteristics of thermally strengthened steel.....1	79
<i>Markashova L. I., Pashchyn M. O., Berdnykova O. M., Mikhodui O. L., and Sydorenko Yu. M.</i> Influence of pulsed electric current on thin structure of aluminum AMg6 alloy under electrodynamic treatment1	83
<i>Grushko O. V., Gutsalyuk O. V., Andreiev I. V., Melnichenko V. V., and Studenets S. F.</i> Some mechanical properties of W–Ni–Fe system high-density alloy1	88
<i>Lytvynenko Ia. V. and Maruschak P. O.</i> Application of adaptive mathematical model of cyclic random process and deterministic trend function for the analysis of pipeline fracture1	95
<i>Chang Shu, Hembara O. V., and Chepil O. Ya.</i> Evaluation of heat-power equipment resource under long-term static loading, high temperature and action of hydrogen1	105
<i>Weijie Wu, Yanfei Wang, Limin Shen, and Jianming Gong.</i> Modelling the slow crack growth due to internal hydrogen in metals.....1	112
<i>Posuvailo V. M.</i> Investigations of electrolytic plasma radiation spectrum during synthesis of oxidoceramic coatings on Д16 and АД33 alloys.....1	120
<i>Mykhas'kiv V. V., Kunets Ya. I., Matus V. V., Burchak O. V., and Balalayev O. K.</i> Parameterization of elastic wave propagation in a media with ensembles of disc inclusions	126

<i>Skalskyi V. R., Stankevych O. M., and Kuz I. S.</i> Wavelet transform application for the analysis of acoustic emission signals under material fracture (A review).....	2	7
<i>Panasyuk V. V., Marukha V. I., and Sylovanyuk V. P.</i> Effective injection materials and technologies for renewal of service ability of damaged building constructions of long-term operation	2	22
<i>Novikov A. I. and Tsybanov G. V.</i> Consideration of inelastic deformation kinetics in summing up the fatigue damages of steels	2	30
<i>Konovalenko I. V., Marushchak P. O., and Kuz O. N.</i> The method of processing and analysis of the images of a network of thermal fatigue cracks on the surface of work-pieces continuous casting machine roller	2	41
<i>Bilyy O. L., Alonso-Medina G. M., González-Sánchez J., and Acuña Gonzalez N. A.</i> Durability assessment of bone cement plates with elliptical shape defects: effect of configuration and position of the defect	2	49
<i>Kozachok O. P., Slobodyan B. S., and Martynyak R. M.</i> Contact between two elastic solids with a wavy relief in the presence of a real gas in gaps.....	2	57
<i>Kryven V. A., Valiashek V. B., and Javorska M. I.</i> Plastic exfoliation of a thin rigid inclusion, parallel to the half-space limit under unilateral contact with environment	2	64
<i>Wen Guang Song, Ivanytskyi Ya. L., Kun P. S., and Chyrva V. M.</i> Evaluation of crack growth resistance of structural materials under mixed-mode fracture macromechanisms.....	2	70
<i>Dzyubyk A. R., Voitovich A. A., Dzyubyk L. V., and Babii L. O.</i> Peculiarities of fatigue fracture of welded joints of 34XH2MA steel, formed by electrodes of different phase composition	2	75
<i>Fedorenko L. L., Prudnikov A. M., Evtukh A. A., Medvid A. P., Steblova O. V., Onufriev P. A., Korchovy A. A., and Uvarov V. S.</i> Laser-stimulated phase transformations in thin SiO_x and CN_x -Ni layers	2	82
<i>Balitskii O. I., Kvasnytska Yu. H., Ivaskevych L. M., and Mialnitsa H. P.</i> Corrosion and hydrogen resistance of heatproof blade nickel-cobalt alloys.....	2	89
<i>Torop V. M., Rabkina M. D., Shtofel O. O., Usov V. V., Shkatulyak N. M., and Savchuk O. S.</i> On the causes of failure of reinforcing ropes of the protective cases of nuclear power plant units	2	98
<i>Topczewska K.</i> Influence of the time of contact pressure increase on temperature in the pad-disc tribosystem during braking.....	2	107
<i>Salenko O. F., Shchetynin V. T., Lashko E. E., Gusarova I. O., Solntsev V. P., and Sytnyk O. O.</i> Providing mechanical characteristics of soldered thin-walled structures of heat-resistant Ni–20Cr–6Al–1Ti–1 Y_2O_3 alloy	2	115
<i>Ivashishin O. M., Savvakin D. G., Dekhtyarenko V. A., and Stasiuk O. O.</i> Hydrogen interaction with Ti–Al–V–Fe, Al–V–Fe and Ti–Al–Mo–Fe master alloy powders.....	2	121
<i>Blikharskii Z. Ya. and Obukh Yu. V.</i> The influence of mechanical and corrosion defects on strength of thermally hardened reinforcement bars of 35ГС steel.....	2	128
<i>Pokhmurskii V. I., Khoma M. S., Vynar V. A., Vasyliv Kh. B., and Ratska N. B.</i> The influence of the external polarization potential on tribo-corrosion behavior of 08Х18Н10Т steel	2	134
<i>Matsko I. Yo., Javorskyj I. M., Yuzefovich R. M., and Semenov P. O.</i> Statistical vector-tensor analysis of vibration of a centrifuge with a developed defect of the rotary unit	2	140
<i>Dmytrakh I. M., Syrotyuk A. M., and Leshchak R. L.</i> Peculiarities of deformation and fracture of low-alloyed steels in hydrogen-containing environments: influence of hydrogen concentration in metal.....	3	7
<i>Andreikiv O. Ye., Skalskyi V. R., Dolinska I. Ya., and Raiter O. K.</i> Methods of strength and life time evaluation of fiber reinforced concretes (A review)	3	19

<i>Ogorodnikov V. A., Derevenko I. A., and Sivak R. I.</i> On the effect of curvature of material particles deformation paths under pressure treatment on plasticity in complex-mode loading conditions	3	37
<i>Yasniy O. P., Pastukh O. A., Pyndus Yu. I., Lutsyk N. S., and Didych I. S.</i> Prediction of the fatigue crack growth diagrams of Д16Т aluminum alloy by the methods of machine learning	3	43
<i>Jing-Liang Chen, Hembara N. O., and Hvozdiuk M. M.</i> Non-stationary temperature problem for a cylindrical shell with multilayer thin coatings	3	49
<i>Sylovanyuk V. P., Ivantyshyn N. A., and Kuz O. N.</i> Conditions of a jump of stresses and displacements on thin anisotropic layers and inclusions in a solid environment	3	58
<i>Kozachok O. P.</i> The influence of compressible interfacial liquid on the interaction between an elastic body and a rigid base textured with rectangular grooves.....	3	62
<i>Lenkovskyi T. M., Kun P. S., Dudda V., and Kharchenko Ye. V.</i> Self-similarity conditions of an edge transverse shear crack in a square plate	3	68
<i>Shopa T. V.</i> Lateral vibrations of an orthotropic plate with a set of holes of arbitrary configuration and mixed boundary conditions.....	3	73
<i>Perepliotchikov Ye. F., Vasyliv Kh. B., Vynar V. A., Riabtsev I. O., and Zakiyev V. I.</i> Improvement of wear resistance of low-alloyed structural steel by its plasma-powder overlaying with the alloys based on iron, chromium and nickel	3	81
<i>Mazur K., Stefańska A., and Hebda M.</i> Analysis of chemical nickel plating process	3	89
<i>Stechyshyn M. S., Skyba M. Ye., Student M. M., Oleksandrenko V. P., and Lukyanuk M. V.</i> Residual stresses in the structural steel layers nitrided in decaying discharge	3	96
<i>Zvirko O. I., Kret N. V., Tsyrulnyk O. T., and Venhryniuk T. P.</i> The influence of the operated gas pipeline steels texture on their resistance to brittle fracture	3	101
<i>Iasnii V. P. and Junga R.</i> Phase transformations and mechanical properties of NiTi based shape memory alloy	3	107
<i>Holovatiuk Yu. V., Pokliatskyi A. H., Ostash O. P., and Labur T. M.</i> Improvement of structural strength of welded joints of sheets made of the Al–Cu–Mg alloys	3	112
<i>Knysh V. V., Solovei S. O., Osadchuk S. O., and Nyrkova L. I.</i> The influence of high-frequency mechanical impact strengthening of the butt welded joints of 15ХСНД steel on their atmospheric corrosion and resistance to fatigue fracture	3	120
<i>Kapustian O. Ye., Ovchinnikov O. V., Skrebtssov A. A., Pohreliuk I. M., and Proskurniak R. V.</i> Corrosion resistance of the welded joints of titanium synthesized by the method of powder metallurgy	3	128
<i>Khoma M. S., Ivashkiv V. R., Datsko B. M., and Kuz I. S.</i> The influence of hydrogen sulfide on corrosion-electrochemical properties of 20 steel with zinc and aluminum based coatings	3	136
<i>Pochapskyi Ye. P., Melnyk N. P., and Koblan I. M.</i> The influence of experimental conditions on generation of magneto-elastic acoustic emission signals in ferromagnetic materials	3	142
<i>Pokhmurskii V. I.</i> Development of investigations on corrosion and corrosion- mechanical fracture of metals and their protection methods (A review)	4	7
<i>Andreikiv O. Ye. and Shtayura N. S.</i> Calculation models of fatigue crack growth in metallic materials under action of force and physicochemical factors	4	21
<i>Zin I. M., Karpenko O. V., Pokynbroda T. Ya., Koretska N. I., Tymus M. B., Kwiatkowski L., and Korniy S. A.</i> Mild steel corrosion inhibition by trehalose lipid biosurfactants	4	31

<i>Ledovskykh V. M., Vyshnevska Yu. P., Brazhnyk I. V., and Levchenko S. V.</i>	
Thermodynamic approach to purposeful design of synergistic inhibitive compositions for corrosion protection in aqueous saline medium	4
<i>Slobodian Z. V., Ilnytsky Z. M., Mahlatiuk L. A., Kupovych R. B., and Semenyuk I. V.</i> The influence of eco-inhibitors on lubricating-cooling liquid corrosion activity	48
<i>Khoma M. S., Ratska N. B., Holovey S. A., and Chuchman M. R.</i> Peculiarities of corrosion and microelectrochemical heterogeneity of steels 45 and Y8 in hydrogen sulfide environment	52
<i>Bersirova O. L. and Kublanovsky V. S.</i> Electrolytic nickel–rhenium alloys: synthesis, structure and corrosion properties	57
<i>Shtefan V. V., Smirnov O. O., Bezhenko A. O., Yepifanova A. S., Kanunnikova N. O., Metenkanych M. M., and Knyazyev S. A.</i> Corrosion behavior of cobalt–molybdenum alloys in chloride solutions	62
<i>Maizelis A. O. and Bairachnyi B. I.</i> Corrosion of neodymium magnets in polyligand solutions.....	68
<i>Hertsyk O. M., Pereverzeva T. H., Boichyshyn L. M., Kovbuz M. O., and Pandiak N. L.</i> The influence of heat treatment of oligomer coatings on corrosion resistance and amorphous Al-based alloys	74
<i>Student M. M., Pokhmurska H. V., Zadorozhna Kh. R., Veselivska H. H., Hvozdetskyi V. M., and Sirak Ya. Ya.</i> Corrosion resistance of VC–FeCr and VC–FeCrCo coatings obtained by supersonic gas-flame spraying	82
<i>Tkachuk O. V., Pohrelyuk I. M., Proskurnyak R. V., Guspiel J., Beltowska-Lehman E., and Morgiel J.</i> Electrochemical behaviour of Ti–6Al–4V alloy in Ringer's solution after oxynitration	88
<i>Tepla T. L., Duriagina Z. A., and Kulyk V. V.</i> Effect of the disinfectant solution on corrosion resistance of dental instrument.....	92
<i>Fedirko V. M., Kukhar I. S., and Melnyk Kh. R.</i> The influence of phase-structural state of chromium steels on their corrosion behaviour in lead melts	96
<i>Sachanova Yu. I., Yermolenko I. Yu., Ved M. V., Sakhnenko M. D., Nenastina T. O., and Yar-Mukhamedova G. Sh.</i> The influence of refractory components contenton corrosion resistance of ternary iron- and cobalt-based alloys	100
<i>Nyrkova L. I., Melnychuk S. L., Osadchuk S. O., and Rybakov A. O.</i> Stress-corrosion cracking of X70 pipe steel at a potential approximated to the maximum protection potential	110
<i>Calan-Canche D., García-Hernández R., Dzib-Pérez L., Bilyy O., and González-Sánchez J.</i> Susceptibility to absorption of atomic hydrogen in API 5L X60 steels with unconventional heat treatment	116
<i>Yasnii V. P., Nykyforchyn H. M., Tsyrulnyk O. T., and Student O. Z.</i> Peculiarities of the nitinol alloy deformation after electrolytic hydrogenation	124
<i>Prikhna T. O., Podhurska V. Ya., Ostash O. P., Vasyliv B. D., Sverdun V. B., Karpets M. V., and Serbeniuk T. B.</i> The influence of technology of obtaining composites based on titanium MAX-phases on wear under contact with copper. Part I. Two-step technology	131
<i>Gerasymenko Yu. S., Vasylieva S. M., and Novosad A. A.</i> The influence of ultrasound on anti-corrosion properties of carbonate scale during its thermal formation	137
<i>Kuz I. S., Moroz O. I., and Kuz O. N.</i> Strength of elasto-plastic plates with a square hole (inclusion) and a cut (thin inclusion) under uniaxial tension	144
<i>Zavalii I. Yu., Berezovets V. V., and Denys R. V.</i> Magnesium-based nanocomposites for hydrogen storage: progress and prospects (A review).....	5
<i>Krechkovska H. V., Student O. Z., and Nykyforchyn H. M.</i> Diagnostics of the technical state of steam pipelines at TPP by hardness and crack growth resistance of steel	22

<i>Andreikiv O. Ye. Dolinska I. Ya., Shtoiko I. P., Raiter O. K., and Matviiv Yu. Ya.</i>		
Calculation of residual life of main pipelines with account of environment effect and degradation of their materials.....	5	33
<i>Kryzhanivskyi Ye. I., Hrabovskyi R. S., and Vytiaz O. Yu.</i> Consideration of the geometry of corrosion-fatigue cracks in assessing residual life of long-term operation objects.....	5	40
<i>Savruk M. P., Kazberuk A., and Chornenkyi A. B.</i> Periodic system of closely located holes in a quasi-orthotropic plane.....	5	48
<i>Kushnir R. M. and Zhydyk U. V.</i> Temperature stresses in a functional gradient cylindrical shell.....	5	56
<i>Ivanytskyi Ya. L., Maksymenko O. P., Molkov Yu. V., Klymenko D. V., Varyvoda Yu. Yu., and Kuz O. N.</i> Establishing the stress state of the fuel tank wall of a rocket carrier by the optical-digital method	5	66
<i>Liu H. G., Long W., and Li Y. Y.</i> Fatigue crack growth rates of nickel-based GH4742 superalloy.....	5	72
<i>Pokhodnya I. K., Holovko V. V., Stepanyuk S. M., and Yermolenko D. Yu.</i>		
Effect of titanium carbides on the formation of microstructure and improvement of mechanical characteristics of the weld metal.....	5	76
<i>Stukhlyak D. P., Dobrotvor I. H., Skorokhod O. Z., Marukha V. I., Mytmyk M. M., and Holotenko O. S.</i> Modeling of wear- resistance of epoxy composites by mechanical properties variation	5	82
<i>Shlyakhetka Kh. S., Pohrelyuk I. M., and Lukyanenko O. H.</i>		
Oxidation of sintered BT1-0 titanium alloys	5	88
<i>Nasiłowska B., Bogdanowicz Z., Flądro J., Noga M., Pastuszka P., Sierakowski B., and Zegar K.</i> Microfractography of tensile tests surfaces of welded joints of austenitic and ferritic steels.....	5	98
<i>Balytskii O. I., Kolesnikov V. O., and Havryliuk M. R.</i> The influence of lubricating liquid on formation of cutting products of 38XH3MФA steel	5	103
<i>Capelle J., Dmytrakh I., Schwab F., and Pluvinage G.</i> Specific corrosion behaviour of 316L stainless steel in mineral water.....	5	108
<i>Kopei B. V., Stefanishyn A. B., and Venhryniuk T. P.</i> Fatigue strength of hybride sucker rods	5	117
<i>Nemchuk O. O.</i> The influence of operation loading on corrosion resistance of marine portal crane steel.....	5	121
<i>Ghazvinloo H. R. and Honarbakhsh-Raouf A.</i> The microstructure of weld metal in CK45 carbon steel	5	126
<i>Dzhala R. M. and Yuzevych L. V.</i> Modelling of interrelations of mechanical, electric and chemical parameters of metal surface	5	130
Borys Yevhenovych Paton – President of the National Academy of Sciences of Ukraine (to the 100-th birthday).....	6	7
<i>Bulyk I. I.</i> Application of hydrogen for obtaining sintered anisotropic nanostructured magnets of the alloys of rare-earth and transition metals	6	10
<i>Ostash O. P., Kulyk V. V., Pozniakov V. D., Haivoronskyi O. A., and Vira V. V.</i>		
The influence of thermal treatment conditions on strength and fatigue crack growth resistance of 65Г steel	6	24
<i>Firstov S. O., Kulak L. D., Kuzmenko M. M., and Shevchenko O. M.</i>		
The Ti–Al–Zr–Si alloys for the exploitation at high temperatures	6	30
<i>Pohrelyuk I. M., Proskurnyak R. V., Tkachuk O. V., and Goral A.</i> Effect of parameters of plasma electrolytic oxidation on formation of calcium-phosphate coatings on titanium	6	36
<i>Kaplin P. V. and Gonchar V. A.</i> The influence of ion nitriding modes on fretting-fatigue of 40X steel.....	6	42
<i>Hlotka O. A. and Moroz O. M.</i> The influence of alloying on eutectic carbides nature in high-speed steels.....	6	49

<i>Voyt A. P., Elets D. I., Denisov E. A., and Gabis I. E.</i> Hydrogen release from magnesium hydride under uniaxial pressing	6	55
<i>Kuciej M. and Topczewska K.</i> Maximum temperature of the friction pad in the single-disc clutch	6	62
<i>Sylovanuk V. P., Ivantishyn N. A., and Rybak T. I.</i> Healing of an internal plane crack in a transversely isotropic body.....	6	68
<i>Moravskyi V. S., Levytskyi V. Ye., Masiuk A. S., Bilyi L. M., and Humenetskyi T. V.</i> The influence of modified sealed polystyrene on the morphology and properties of polycaprolactam.....	6	75
<i>Kindrachuk M. V., Volchenko O. I., Volchenko D. O., Skrypnyk V. S., and Voznyi A. V.</i> Energy levels of different types of contacts of friction couples microprotusions	6	81
<i>Dziubyk A. R., Dziubyk L. V., Pokhmurska H. V., and Prokopyshyn I. A.</i> Residual strength of the above-ground section of the main pipeline with circumferential cracks.....	6	93
<i>Kravets V. S. and Savruk M. P.</i> Plane periodic problem of elasticity theory for an isotropic plane with curvilinear holes and edge cracks	6	102
<i>Diveyev B. M., Horbay O. Z., Butyter I. B., and Cherchyk H. T.</i> Determination of dynamic characteristics of beams with magneto-rheological layers.....	6	110
<i>Drobenko B. D., Budz S. F., Budz I. S., and Kuz I. S.</i> The stress state of nozzles with local extraction of defects	6	116
<i>Yaskovets Z. S. and Orynyak I. V.</i> Application of the shooting method for the rapid calculation of the stress state of the underground sections of the pipelines in the areas of mine roadways	6	121
<i>Student M. M., Ivasenko I. B., Posuvailo V. M., Veselivska H. H., Pokhmurskyi A. Yu., Sirak Ya. Ya., and Yusikiv V. M.</i> The influence of porosity of plasma-electrolytic coating on corrosion resistance of D16 alloy	6	130
<i>Yar-Mukhamedova G. Sh., Darisheva A. M., and Yar-Mukhamedov E. Sh.</i> Adsorption of chromium plating electrolyte components on disperse corundum particles.....	6	138
<i>Vasyliev G. S., Novosad A. A., Pidburtniy M. O., and Chihrin O. M.</i> The influence of ultrasonic vibration on corrosion resistance of heat exchanger plates made of AISI 316 steel.....	6	144

IN SCIENTIFIC CIRCLES

<i>Stashchuk M. H.</i> Problems of brittle fracture mechanics	1	133
<i>Kuryliak D. B.</i> Problems of technical diagnostics and remote sensing	1	134
<i>Luk'yanenko O. H.</i> Problems of materials science and surface engineering of metals	1	137
<i>Chervinska N. R.</i> Corrosion. Corrosion protection of metals	1	140
<i>Frankevych L. F.</i> Defence of thesis.....	1	143
<i>Panasyuk V. V.</i> Important scientific-organizing event in the history of the National Academy of Sciences of Ukraine	3	148
<i>Yasnii P. V. and Nykyforchyn H. M.</i> The European Conference on Fracture (ECF-22).....	5	135
<i>Kornii V. V.</i> Celebration of the 100-anniversary of the National Academy of Sciences of Ukraine	6	150
<i>Khoma M. S. and Bulyk I. I.</i> The 10 th International conference: up-to-day materials and technologies	6	153

JUBILEES

Vasyl Ivanovich Pokhmurskii (to the 85 th birthday).....	5	138
<i>List of papers published in “Physicochemical Mechanics of Materials” in 2018</i>	6	156
<i>Authors’ index</i>	6	162