

## CONTENTS

<i>Paimushin V. N.</i> Theory of moderately large deflections of sandwich shells having a transversely soft core and reinforced along their contour .....	3
<i>Casalegno C. and Russo S.</i> Dynamic characterization of an all-FRP bridge .....	27
<i>Kulikov G. M. and Plotnikova S. V.</i> Three-dimensional solution of the free vibration problem for metal-ceramic shells using the method of sampling surfaces.....	47
<i>Varna J. and Zrida H.</i> Analysis of microdamage in thermally aged CF/polyimide laminates.....	65
<i>Kozhamkulov B. A., Kupchishin A. I., Bitibaeva Zh. M., and Tamužs V. P.</i> Radiation-caused defect formation in composite materials and their destruction under electron irradiation .....	89
<i>Fedotov A. F.</i> Homogenization model of the elastic properties of isotropic composites with interpenetrating phases using deformation parameters of a porous material.....	99
<i>Chen W. R. and Chang H.</i> Closed-form solutions for free vibration frequencies of functionally graded Euler–Bernoulli beams .....	119
<i>Sargsyan A. M.</i> Contact problem on the interaction of two straps absolutely rigid in tension and flexible in bending with a thin circular sector .....	143
<i>Pestrenin V. M. and Pestrenina I. V.</i> Restrictions on stress components at the internal singular point of an elastic compound structure .....	155
<i>Bogomolova O. Yu., Biktagirova I. R., Danilaev M. P., Klabukov M. A., Polsky Yu. E., Pillai Saju, and Tsentsevitsky A. A.</i> Effect of adhesion between submicron filler particles and a polymeric matrix on the structure and mechanical properties of epoxy-resin-based composites.....	169
<i>Celik Sola O., Ozyazgan C., and Sayin B.</i> Analysis of cement-based pastes mixed with waste tire rubber.....	177
<i>Ghasemi Ashenai F., Ghorbani A., and Ghasemi I.</i> Mechanical, thermal and dynamic mechanical properties of PP/GF/xGnP nanocomposites.....	187

## CONTENTS

<i>Abrosimov N. A. and Novosel'tseva N. A.</i> Computer modeling of the dynamic strength of metal-plastic cylindrical shells under explosive loading .....	205
<i>Padovec Z., Růžička M., Sedláček R., Král M., and Růžička P.</i> Comparison of the thermo-elastic properties of a randomly reinforced composite computed by the classical lamination theory and by the Monte Carlo simulation .....	219
<i>Bazhenov V. G. and Zhestkov M. N.</i> Applicability of structural-orthotropic models in problems on tension, bending and stability of densely perforated plates and shells.....	231
<i>Wróbel G., Szymiczek M., and Kaczmarczyk J.</i> Influence of the structure and number of reinforcement layers on the stress state in the shells of tanks and pressure pipes .....	241
<i>Kovalovs A., Barkanov E., Rucevskis S., and Wesolowski M.</i> Modeling and design of a full-scale rotor blade with embedded piezocomposite actuators.....	259
<i>Farooqi M. I., Nasir M. A., Ali H. M., and Ali Y.</i> Experimental validation of the transverse shear behavior of a Nomex core for sandwich panels .....	279
<i>Kolupaev B. B., Kolupaev B. S., Levchuk V. V., Maksimsev Yu. R., and Sidletskii V. A.</i> Influence of nanodisperse metal fillers on the viscoelastic properties and processes of mechanical relaxation of polymer systems.....	291
<i>Ferreira L. E. T., Vareda L. V., Hanai J. B., Sousa J. L. A. O., and Silva A. I.</i> An effective modal approach for to dynamic evaluation of fracture toughness of quasi-brittle materials.....	303
<i>Pan'kov A. A.</i> Piezoelectroluminescent optical fiber sensor for diagnostics of the stressed state and defectoscopy of composites.....	325
<i>Yesil U. Babuscu.</i> The effect of own weight on the static analysis of a prestretched plate-strip with a circular hole in bending.....	345
<i>Akhundov V. M.</i> Form changes of a toroidal body with a crossed arrangement of fibers on the basis of the two-level carcass theory.....	359
<i>Shebanov S. M., Novikov I. K., Gumargalieva K. Z., and Pavlikov A. V.</i> Increasing the strength of single filaments and yarns of a paraaramid fiber by their processing with an aqueous suspension of carbon nanoparticles.....	379
<i>Kord B., Malekian B., and Ayrlmis N.</i> Weathering performance of montmorillonite/wood flour-based polypropylene nanocomposites.....	383
Notes for contributors .....	395

## CONTENTS

<i>Paimushin V. N. and Gazizullin R. K.</i> Static and monoharmonic acoustic impact on a laminated plate .....	407
<i>Mieczkowski G.</i> Stress fields and fracture prediction for an adhesively bonded bimaterial structure with a sharp notch located on the interface.....	437
<i>Lagzdins A., Zilaucs A., Beverte I., Andersons J., and Cabulis U.</i> A refined strut model for describing the elastic properties of highly porous cellular polymers reinforced with short fibers .....	459
<i>Klasztorny M., Nycz D. B., Romanowski R. K., Gotowicki P., Kiczko A., and Rudnik D.</i> Effects of operating temperatures and accelerated environmental ageing on the mechanical properties of a glass-vinylester composite .....	477
<i>Chatys R. and Orman Ł. J.</i> Technology and properties of layered composites as coatings for heat transfer enhancement .....	499
<i>Fedotov A. F.</i> Hybrid model for homogenization of the elastoplastic properties of isotropic matrix composites .....	513
<i>Rad A. Sh. and Ebrahimi D.</i> Improving the mechanical performance and thermal stability of PVA-clay nanocomposite by electron beam irradiation .....	531
<i>Filipenkov V. V., Rupeks L. E., Vitins V. M., Knets I. V., and Kasyanov V. A.</i> Characteristics of bone tissue and composite materials on the basis of natural hydroxyapatite and endodontic cement for replacement of the tissue .....	543
<i>Durgesh B. H., Alkheraif A. A., Pavithra D., Hashem M. I., Alkhudhairy F., Elsharawy M., Divakar D. D., Vallittu P. K., and Matinlinna J. P.</i> Evaluation of an experimental adhesive resin for orthodontic bonding .....	555
<i>Maslov L. B.</i> Mathematical model of bone regeneration in a porous implant .....	567
<i>Seyfullayev A. I., Rustamova M. A., and Kerimova Sh. A.</i> A problem of fatigue fracture mechanics on a two-layer material with edge cracks .....	591

## CONTENTS

<i>Paimushin V. N., Firsov V. A., and Shishkin V. M.</i> Modeling the dynamic response of a carbon-fiber-reinforced plate at resonant vibrations considering the internal friction in the material and the external aerodynamic damping .....	609
<i>Chen C. S., Tsai T. C., Chen T. J., and Chen W. R.</i> Vibration and stability of initially stressed hybrid composite plates in hygrothermal environments .....	631
<i>Yankovskii A. P.</i> Study on the unsteady creep of composite beams with an irregular laminar fibrous structure made from nonlinear hereditary materials .....	653
<i>Tulendinov T., Zesers A., and Tamužs V.</i> Behavior of concrete cylinders strengthened with a basalt-FRP and subjected to mechanical loads and elevated temperatures .....	675
<i>Koval T. I.</i> Investigation of the reliability of bridge elements reinforced with basalt plastic fibers .....	685
<i>Sliseris J., Yan L., and Kasal B.</i> Numerical simulation and experimental verification of hollow and foam-filled flax-fabric-reinforced epoxy tubular energy absorbers subjected to crushing .....	695
<i>Zarubin V. S., Kuvyrkin G. N., and Savel'yeva I. Y.</i> Estimates of the elastic characteristics of a composite with short anisotropic fibers .....	711
<i>Popov A. N., Kazachenko V. P., Popova M. A., Shil'ko S. V., and Ryabchenko T. V.</i> Mechanical and antifrictional properties of elastomeric composites based on a rubber for sealing elements .....	723
<i>Liu H., Hu Y., Zhao Y., and Fujii H.</i> Improving the particle distribution and mechanical properties of friction-stir-welded composites by using a smooth pin tool .....	737
<i>Kordestani F., Ghasemi F. Ashenai, and Arab N. B. M.</i> Effect of pin geometry on the mechanical strength of friction-stir-welded polypropylene composite plates .....	753
<i>Bashkov O. V., Protsenko A. E., Bryanskii A. A., and Romashko R. V.</i> Diagnostics of polymer composite materials and analysis of their production technology by using the method of acoustic emission .....	765
<i>Lu Ch. Zh., Li J. Y., Zhou B. Y., and Li Sh.</i> Experimental investigation of stiffness characteristics and damping properties of a metallic rubber material .....	775
<i>Tan Y., Yan Y., Li X., and Guo F.</i> Numerical analysis of the elastic properties of 3D needled carbon/carbon composites .....	787

## " Mechanics of Composite Materials ". —2017. — Vol. 53, № 5.

<i>Romanova T. P.</i> Modeling the dynamic bending of rigid-plastic hybrid composite elliptical plates with a rigid insert .....	809
<i>Shil'ko S. V., Chernous D. A., Ryabchenko T. V., and Hat'ko V. V.</i> Estimation of the friction coefficient of a nanostructured composite coating .....	829
<i>Malachowski J., L'vov G., and Daryazadeh S.</i> Numerical prediction of the parameters of a yield criterion for fibrous composites.....	843
<i>Hakobyan V. N. and Dashtoyan L. L.</i> Discontinuous solutions of a doubly periodic problem for a piecewise homogeneous plate with interphase defects .....	863
<i>Paimushin V. N.</i> Refined models for an analysis of internal and external buckling modes of a monolayer in a layered composite .....	881
<i>Esbati A. H. and Irani S.</i> Failure analysis of carbon nanotubes with a Stone–Wales defect using nonlinear finite-element methods .....	907
<i>Starovoitov E. I. and Leonenko D. V.</i> Variable thermal-force bending of a three-layer bar with a compressible filler.....	927
<i>Ghatee P., Jaafar M. S., Ibrahim A., and Talati H.</i> Modeling the damage characteristics of concrete subjected to cyclic loadings.....	947
<i>Memarianfard H. and Turusov R.</i> A Multiscale analysis of the residual stresses occurring during curing and cooling of thick-wall cross-ply filament-wound cylinders .....	967
<i>Priyanka P., Dixit A., and Mali H. S.</i> High-strength hybrid textile composites with carbon, kevlar, and E-glass fibers for impact-resistant structures. A review.....	981

## CONTENTS

<i>Yankovskii A. P.</i> Refined modeling of flexural deformation of layered plates with a regular structure made of nonlinear hereditary materials.....	1015
<i>Janeliukstis R., Rucevskis S., and Chate A.</i> Classification model for damage localization in a plate structure .....	1043
<i>Paimushin V. N., Kholmogorov S. A., and Gazizullin R. K.</i> Mechanics of unidirectional fiber-reinforced composites: buckling modes and failure under compression along fibers .....	1059
<i>He R., Chang Q., Huang X., and Li J.</i> Mechanical reinforcement of epoxy composites with carbon fibers and HDPE .....	1083
<i>Shokrieh M. M. and Memar M.</i> Characterization of tensile and compressive properties of basalt/epoxy composites under stress corrosion conditions.....	1093
<i>Kasyanenko I. M. and V. Yu. Kramarenko V. Yu.</i> The effect of pigment volume concentration on film formation and mechanical properties of water-based coatings .....	1103
<i>Benzannache N., Bezazi A., Bouchelaghem H., Boumaaza M., Amziane S., and Scarpa F.</i> Statistical analysis of 3-point bending properties of polymer concretes made from marble powder waste, sand grains, and a polyester resin.....	1123
<i>Miskolczi N., Sedlarik V., Kucharczyk P., and Riegel E.</i> Enhancement of the mechanical properties of a polylactic acid/flax fiber biocomposite by WPU, WPU/starch, and TPS polyurethanes using coupling additives.....	1137
<i>Bakulin V. N., Bokov M. A., and Nedbai A. Y.</i> Aeroelastic stability of a cylindrical composite shell at a bilateral flow.....	1153
<i>Zhou N., Wang J. X., Tang S. Z., Tao Q. C., and Wang M. X.</i> Study on the failure and energy absorption mechanism of multilayer explosively welded plates impacted by spherical fragments.....	1165
<i>Ghulghazaryan L. G. and Khachatryan L. V.</i> Forced vibrations of a two-layer orthotropic shell with an incomplete contact between layers .....	1181
<i>Chemi A., Zidour M., Heireche H., Rakrak K., and Bousahla A. A.</i> Critical buckling load of chiral double-walled carbon nanotubes embedded in an elastic medium .....	1191
Contents of the journal <i>Mekhanika Kompozitnykh Materialov</i> in 2017 .....	1205
Author's index for 2017.....	1210