

## CONTENTS

<i>Aghalovyan M. L., Zakaryan T. V.</i> Asymptotic solution of the first 3D dynamic elasticity theory problem on forced vibrations of a three-layer plate with an asymmetric structure	3
<i>Hakobyan V. N., Hakobyan L. V., and Dashtoyan L. L.</i> Discontinuous solutions of axisymmetric elasticity theory for a piecewise homogeneous layered space with periodical interphase disk-shape defects	19
<i>Sliseris J., Korjakins A.</i> Numerical modeling of the casting process and impact loading of a steel-fiber-reinforced high-performance self-compacting concrete	43
<i>Abrosimov N. A., Elesin A. V., and Igumnov L. A.</i> Numerical simulation of the process of loss of stability of composite cylindrical shells under combined quasi-static and dynamic actions	61
<i>Danilaev M. P., Bogoslov E. A., Kuklin V. A., Klabukov M. A., Khamidullin O. L., Pol'sky Yu. E., and Mikhailov S. A.</i> Structure and mechanical properties of a dispersedly filled transparent polycarbonate	77
<i>Ermilov A. S., Nurullaev E., and Lyubimova N. Y.</i> Experimental verification of the theory of structural-mechanical behavior of a filled 3D cross-linked elastomer	91
<i>Zhandarov S., Scheffler C., Müder E., and Gohs U.</i> Three specimen geometries and three methods of data evaluation in single-fiber pull-out tests	99
<i>Khurshudyan As. Zh. and Arakelyan Sh. Kh.</i> Resolving controls for the boundary approximate controllability of sandwich beams with uncertainties. the green's function approach	123
<i>Hong Y., Yan Y., Guo F., Li X., and Tian Z. A.</i> Predicting the elastic properties of 3D <i>n</i> -directional braided composites via a theoretical method	137
<i>Guo Z. S., Hao N., Wang L. M., and Chen J. X.</i> Review of basalt-fiber-reinforced cement-based composites in China: their dynamic mechanical properties and durability	155
<i>Mou H. L., Xie J., Su X., and Feng Z. Y.</i> Crashworthiness experiment and simulation analysis of composite thin-walled circular tubes under axial crushing	173
Notes for contributors	193

## CONTENTS

<i>Paimushin V. N., Kayumov R. A., and Kholmogorov S. A.</i> Deformation features and models of $[\pm 45]_{2s}$ cross-ply fiber-reinforced plastics under tension .....	205
<i>Marchuk A. V. and Putvinskayte Yu. K.</i> Analytical solution of the problem on the thermally stressed state of composite plates with rigid and sliding contacts between layers based on the 3D elasticity theory .....	225
<i>Kayumov R. A., Tazyukov B. F., and Mukhamedova I. Z.</i> Identification of mechanical characteristics of a nonlinear viscoelastic composite by results of tests on shells of revolution .....	247
<i>Benhenni M. A., Adim B., Daouadji T. Hassaine, Abbès B., Abbès F., Li Y., and Bouzidane A.</i> A comparison of closed-form and finite-element solutions for the free vibration of hybrid cross-ply laminated plates.....	259
<i>Khokhlov A. V.</i> Applicability indicators and identification techniques for a nonlinear Maxwell-type elastoviscoplastic model using loading–unloading curves .....	277
<i>Galichyan T. A., Khurshudyan As. Zh., Filippov D. A.</i> Parameter optimization of laminated multiferroic composites .....	303
<i>Fahsi B., Bouiadjra R. Bachir, Mahmoudi A., Benyoucef S., and Tounsi A.</i> Assessing the effects of porosity on the bending, buckling, and vibrations of functionally graded beams resting on an elastic foundation by using a new refined quasi-3D theory.....	313
<i>Sapozhnikov S. B., Kheruvimov A. V., and Bezmel'nitsyn A. V.</i> Design of pseudoplastic unidirectional hybrid composites based on the model of a dry bundle.....	331
<i>Belkaid K.</i> Development of a 2D isoparametric finite-element model based on Reddy's third-order theory for the bending behavior analysis of composite laminated plates .....	345
<i>Kondratiev A. V., Gaidachuk V. E., and Kharchenko M. E.</i> Relationships between the ultimate strengths of polymer composites in static bending, compression, and tension .....	367
<i>Mikheev P. V. and Berlin A. A.</i> Effect of splitting of polymer fibers on the strength of uni-directional composites .....	379
<i>Durgesh B. H., Alkheraif A. A., Altwijry M. K., Asiry M. A., AlShahrani I., Varrel J., and Vallittu P. K.</i> Shear creep behavior of an adhesive resin system at the interface between an orthodontic bracket and enamel .....	389

## CONTENTS

<i>Singh A., Das S., and Craciun E.-M.</i> Effect of thermomechanical loading on an edge crack of finite length in an infinite orthotropic strip .....	409
<i>Romanova T. P.</i> Modeling the dynamic behavior of rigid-plastic thin reinforced curvilinear plates with a hole on a viscous foundation .....	425
<i>Timonin A. M.</i> Finite-layer method: determining the critical size of an interlaminar crack in the curved zone of a composite T-stringer .....	451
<i>Polilov A. N., Tatus N. A., Tian X., and Arutjunova A. S.</i> Equistrong branchy composite beams with a constant total area of variable elliptic cross sections .....	465
<i>Smirnov S. V., Veretennikova I. A., Fomin V. M., Filippov A. A., and Brusentseva T. A.</i> Studying the viscoelastic properties of an epoxy resin strengthened with silicon dioxide nanoparticles by instrumented microindentation .....	483
<i>Bochkarev S. A. and Lekomtsev S. V.</i> Stability of functionally graded circular cylindrical shells under combined loading.....	501
<i>Hajlane A. and Varna J.</i> Identification of a model of transverse viscoplastic deformation for a UD composite from curvature changes of unsymmetric cross-ply specimens .....	519
<i>Yang X., Liang N., Liu X. R., and Zhong Z.</i> An improved constitutive statistical damage model of a multisize polypropylene-fiber-reinforced concrete under compression.....	553
<i>Zeleniakiene D., Griskevicius P., Aniskevich A., Jankauskaite V., and Zukiene K.</i> A numerical and experimental study on the impact behavior of a carbon-fiber-reinforced thermo-plastic poly (methyl methacrylate) composite .....	565
<i>Turusov R. A. and Egorov V. I.</i> Stress state and optimization of the parameters of interrupted and machine surgical sutures of human intestine.....	583
<i>Rupeks L., Filipenkov V., Vitins V., and Knets I.</i> Mechanical properties and biocompatibility of a biomaterial on the basis of natural hydroxyapatite and an endodontic cement.....	595

## CONTENTS

<i>Yankovskii A. P.</i> Steady-state creep of metal-composite sandwich panels with thin reinforced bearing layers.....	613
<i>Paimushin V. N., Firsov V. A., Gazizullin R. K., Kholmogorov S. A., and Shishkin V. M.</i> Theoretical-experimental method for determining the short- and long-term creep parameters of technical rubber in shear .....	635
<i>Zhang J. H., Liu X., and Zhao X.</i> Symplectic method-based analysis of the axisymmetric dynamic thermal buckling of functionally graded circular plates .....	663
<i>Vuong Pham M. and Duc Nguyen Dinh.</i> Nonlinear buckling and postbuckling of a FGM toroidal shell segment under a torsional load in a thermal environment within Reddy's third-order shear-deformation shell theory.....	677
<i>Hayat K., Ha S. K., Sultan T., and Ahmad Z.</i> Fatigue life of megawatt-scale composite wind turbine blades with shallow-angled laminates .....	697
<i>Strizhius V.</i> Fatigue life estimation for layered composites under a plane stress state with the use of a nonlinear fatigue damage accumulation model.....	715
<i>Starovoitov E. I. and Leonenko D. V.</i> Deformation of an elastoplastic circular three-layer plate in a temperature field .....	727
<i>Zarubin V. S., Savelyeva I. Yu., and Sergeeva E. S.</i> Estimates for the thermoelastic properties of a composite with ellipsoidal anisotropic inclusions .....	741
<i>Keykha A. H.</i> Behavior of defective curved steel beams strengthened by a CFRP composite .....	759
<i>Wang Y., Liu H., Xi C., Dou G., and Qian L.</i> Static analysis of properties of a composite slab made from steel fibers and a reinforced foam concrete .....	773
<i>Pan'kov A. A.</i> Resonant piezoelectroluminescent fiber-optical sensor of a temperature field in composite structures .....	791

## CONTENTS

<i>Ghulghazaryan G. R., Ghulghazaryan L. G., and Kudish I. I.</i> Free vibrations of a thin elastic orthotropic cylindrical panel with free edges .....	813
<i>Paimushin V. N. and Polyakova T. V.</i> Analytical solutions to the 3D problem on free vibrations of an orthotropic rectangular cuboid with free edges .....	837
<i>Shershneva I. N., Shershnev V. A., Bubnova M. L., Lesnichaya V. A., Kolesnikova A. M., Rabinskiy L. N., Kydralieva K. A., and Dzhardimalieva G. I.</i> Fiber-matrix-coupling agent interactions in glass-fiber-reinforced polyethylene composites under gamma irradiation.....	871
<i>Ye J. J., Xi J. L., Hong Yu., Li Ya., Chu Ch. Ch., Cai H., and Wang Yo. K.</i> A multiscale approach to studying the high-strain-rate deformations of glass-fiber-reinforced polymer-matrix composites .....	885
<i>Bourchak M., Nahas M. N., Kada B., Khan A. N., Al-Garni A., and Juhany K. A.</i> Tensile properties of graphene-based nanocomposites: a comparative study of their processing by ultrasonication and microcompounding methods.....	899
<i>Mirsalimov V. M. and Hasanov Sh. G.</i> Minimization of the stress state and fracture parameters of a composite in bending .....	911
<i>Kozhamkulov B., Akitay B., Jumadillayev K., Primkulova Zh., and Kyrykbayeva A.</i> Destruction of silicon-organic composites irradiated by high-energy electrons .....	925
<i>Karataş E. E.</i> Buckling delamination of the rectangular orthotropic thick plate with an embedded rectangular crack subjected to axial compressive force.....	935
<i>Beketova G., Shevtsova M., and Symonov V.</i> Static and fatigue characteristics of pinned metal-composite joints .....	951
<i>Svetashkov A. A., Fok S. C., Kupriyanov N. A., Manabaev K. K., Pavlov M. S., and Vakurov A. A.</i> Modification of the time-efficient moduli of viscoelastic bodies .....	969
<i>Yuan Sh., He G. J., and Yi J.</i> Analysis of mechanical properties and a design method of reinforced timber-concrete composite beams .....	997

## CONTENTS

<i>Romanova T. P. and Yankovskii A. P.</i> Yield loci of reinforced plates made from rigid-plastic uniaxially reinforced materials considering the two-dimensional stress state in fibers. I. Unidirectional reinforcement .....	1019
<i>Artamonova N. B., Sheshenin S. V., Frolova Yu. V., Bessonova O. Yu., Novikov P. V.</i> Calculating components of the effective tensors of elastic moduli and Biot's parameter of porous geocomposites .....	1043
<i>Duc N. D., Nam V. H., and Cuong N. H.</i> Nonlinear postbuckling of eccentrically oblique-stiffened functionally graded doubly curved shallow shells based on improved donnell equations .....	1059
<i>Paimushin V. N., Gazizullin R. K., Shishov M. A.</i> Spatial buckling modes of a fiber (fiber bundle) of composites with a $[\pm 45]_{2s}$ stacking sequence under the tension and compression of test specimens.....	1081
<i>Lamea M., Daghigh V., Soroush M., and Nikbin K.</i> The buckling behavior of vacuum-infused open-hole unidirectional basalt-fiber composites. experimental and numerical investigations.....	1107
<i>Pestrenin V. M., Pestrenina I. V., Landik L. V.</i> Characteristics of compositions of unidirectional short boron fibers and metal matrices.....	1125
<i>Liu X., Gong Z., Wang X., Yang J., Liang B., and Cheng J.</i> Effect of interface damage on band structures in a periodic multilayer plate.....	1139
<i>Aylkci F., Akbarov S. D., and Yahnioglu N.</i> 3D fem analysis of buckling delamination of a piezoelectric sandwich rectangular plate with interface edge cracks.....	1155
<i>Kovačovs A., Ručevskis S., Kulakov V., and Wesolowski M.</i> Optimum position of electrodes to detect delaminations in composite materials using the electric resistance change method.....	1173
<i>Novozhenova O. G.</i> Describing the asymmetric relaxation spectra of viscoelastic materials and dielectrics .....	1185
Vitauts Tamužs.....	1203
Contents of the journal <i>Mekhanika Kompozitnykh Materialov</i> in 2019 .....	1205
Author's index for 2019.....	1210