

# CONTENTS

## Mechanics

Sil'chenko P.N., Kudryavtsev I.V., Mikhnev M.M., Gotselyuk O.B. A Refined Solution to the System of Differential Equations in the Problem of Bending in Thin-Shell Waveguide Structures .....	4
Eremichev A. Uniform Tension: the Problem and the Solution .....	22
Fedorov S.V., Veldanov V.A., Perfil'ev A.Yu., Smirnov A.S. Effect of Filling Compressibility on the Variables of State During Projectile Penetration into a Concrete Target .....	28
Naraykin O.S., Sorokin F.D., Kozubnyak S.A., Vakhlyarskiy D.S. Numerical Simulation of Elastic Wave Precession in the Cylindrical Resonator of a Hemispherical Resonator Gyroscope Featuring a Non-Homogeneous Density Distribution .....	41

## Mechanical Engineering and Machine Science

Voronov S.A., Weidong Ma. Effect of Abrasive Grain Geometry on Cutting Forces in Grinding .....	52
Chernyatin A.S., Razumovskiy I.A. Methodological Approach and Software for Assessing Loads, Defects and Degradation of Mechanical Characteristics in Structural Materials, Based on Processing Experimental Data .....	64

## Aviation, Rocket and Space Engineering

Kruchkov S.V., Savel'ev A.M. Thermodynamic Estimation of Fuel Efficiency for a High-Speed Ramjet Running on Hydrocarbon Fuel with Boron and Beryllium Hydride Additives .....	75
Attetkov A.V., Vlasov P.A., Volkov I.K. A Similarity Solution to the Heat Transfer Problem for an Isotropic Half-Space Featuring a Film-Coated Moving Boundary.....	89

## Power, Metallurgical and Chemical Engineering

Demikhov K.E., Ochkov A.A., Tsakadze G.T. A Technique for Computing Optimum Parameters of a Combined Molecular Drag Vacuum Pump .....	98
Sedunin V.A., Shemyakinskiy A.S. Specifics of Designing a Turboexpander Generator for the Fuel Gas System of a Compressor Station .....	105
Burtsev G.N., Run'ko V.V., Shleynikov N.V., Shevelev D.V., Gridchin N.V. Experimental Investigation of the Effect of Water Injection on Low-Power Gas Turbine Plant Parameters .....	122