

# Contents

<b>Frameworks not Restorable from Self Stresses . . . . .</b>	<b>1</b>
Mikhail D. Kovalev	
<b>Structural Modifications Synthesis of Bennett Mechanism . . . . .</b>	<b>9</b>
Munir G. Yarullin and Marat R. Mingazov	
<b>Kinematic Research of Bricard Linkage Modifications . . . . .</b>	<b>17</b>
Munir G. Yarullin and Ilnar A. Galiullin	
<b>Drive Selection of Multidirectional Mechanism with Excess Inputs . . . .</b>	<b>31</b>
Alexander N. Evgrafov and Gennady N. Petrov	
<b>Engineering Calculations of Bolt Connections. . . . .</b>	<b>39</b>
Alexander A. Sukhanov	
<b>Modern Methods of Contact Forces Between Wheelset and Rails Determining. . . . .</b>	<b>57</b>
Kirill V. Eliseev	
<b>A Novel Design of an Electrical Transmission Line Inspection Machine . . . . .</b>	<b>67</b>
Mohammad Reza Bahrani	
<b>One Stable Scheme of Centrifugal Forces Dynamic Balance . . . . .</b>	<b>75</b>
Vladimir I. Karazin, Denis P. Kozlikin, Alexander A. Sukhanov and Igor O. Khlebosolov	
<b>New Effective Data Structure for Multidimensional Optimization Orthogonal Packing Problems . . . . .</b>	<b>87</b>
Vladislav A. Chekanin and Alexander V. Chekanin	
<b>One-Dimensional Models in Turbine Blades Dynamics . . . . .</b>	<b>93</b>
Vladimir V. Eliseev, Artem A. Moskalets and Evgenii A. Oborin	

<b>Stationary Oscillation in Two-Mass Machine Aggregate with Universal-Joint Drive. . . . .</b>	<b>105</b>
Vassil Zlatanov	
<b>The Vibrations of Reservoirs and Cylindrical Supports of Hydro Technical Constructions Partially Submerged into the Liquid . . . . .</b>	<b>115</b>
George V. Filippenko	
<b>Mathematical Modelling of Interaction of the Biped Dinamic Walking Robot with the Ground . . . . .</b>	<b>127</b>
Anastasia Borina and Valerii Tereshin	
<b>Programmable Movement Synthesis for the Mobile Robot with the Orthogonal Walking Drivers . . . . .</b>	<b>135</b>
Victor Zhoga, Vladimir Skakunov, Ilya Shamanov and Andrey Gavrilov	
<b>Processing of Data from the Camera of Structured Light for Algorithms of Image Analysis in Control Systems of Mobile Robots . . .</b>	<b>149</b>
Vladimir Skakunov, Victor Belikov, Victor Zhoga and Ivan Nesmiynov	
<b>Structural and Phase Transformation in Material of Steam Turbines Blades After High-Speed Mechanical Effect . . . . .</b>	<b>159</b>
Margarita A. Skotnikova, Nikolay A. Krylov, Evgeniy K. Ivanov and Galina V. Tsvetkova	
<b>Stress Corrosion Cracking and Electrochemical Potential of Titanium Alloys . . . . .</b>	<b>169</b>
Vladimir A. Zhukov	
<b>Metal Flow Control at Processes of Cold Axial Rotary Forging. . . . .</b>	<b>175</b>
Leonid B. Aksenov and Sergey N. Kunkin	
<b>Use of the Capabilities of Acoustic-Emission Technique for Diagnostics of Separate Heat Exchanger Elements . . . . .</b>	<b>183</b>
Evgeniy J. Nefedev, Victor P. Gomera and Anatoly D. Smirnov	
<b>Author Index . . . . .</b>	<b>195</b>

Advances in Mechanical Engineering  
Selected Contributions from the Conference "Modern  
Engineering: Science and Education", Saint  
Petersburg, Russia, June 2014  
Evgrafov, A.N. (Ed.)  
2016, VIII, 195 p. 126 illus. in color., Softcover  
ISBN: 978-3-319-29578-7