

Table of Contents

Preface

Current Problems in Design of Quantum Dots Used in Semiconductors	
A. Banaś and A. Muc	1
Defects in Single Walled Carbon Nanotubes (SWCNT)	
A. Banaś, A. Muc and M. Chwał	7
Molecular Dynamics in Simulation of Magneto-Rheological Fluids Behavior	
M. Barski, M. Chwał and P. Kędziora	11
Carbon Nanotube/Polymer Nanocomposites: A Brief Modeling Overview	
M. Chwał, P. Kędziora and M. Barski	29
Optimisation of Crane Mechanisms – Selected Problems	
S. Chwastek	43
Optimal Design of PZT Actuators and Sensors in Composite Structural Elements	
P. Kędziora	59
Piezoelectric Transducers	
P. Kędziora, M. Barski and M. Chwał	75
Stress Modification in Multi-Layer Walls of Expanded Pressure Vessels	
M. Krasiński, M. Stodulski and A. Trojnacki	81
Hydro-Pneumatic Accumulator Study with the Use of Thermodynamic Model Simulation	
P. Kucybala	97
The Peak Dynamic Loading of a Winch in Term of the Rope Flexibility	
S. Michałowski and W. Cichocki	105
Application of Composite Materials in Modern Constructions	
P.D. Pastuszak and A. Muc	119
Methods of Infrared Non-Destructive Techniques: Review and Experimental Studies	
P.D. Pastuszak, A. Muc and M. Barski	131
Modern Coating Used in High Pressure Water Hydraulic Components	
J. Pobęda and A. Sobczyk	143
Application of Selected Multiaxial High-Cycle Fatigue Criteria to Rolling Contact Problems	
P. Romanowicz	157
Innovative Construction of 3-Component Aerodynamic Balance	
J. Ryś and M. Augustyn	171
Certain Solution of Contact Problem for Spherical Shell	
H. Sanecki and Ł. Wachowicz	179
Damage Detection, Localization and Assessment in Multilayered Composite Structure with Delaminations	
A. Stawiarski, A. Muc and P. Kędziora	193
The Aluminium and the Steel Supporting System for the Horns Assembly in the High Intensity Neutrino Oscillation Project	
B. Szybiński	205
Synthesis of the Active Cab Suspension Mechanism	
G. Tora	219