Table of Contents

Preface

Chapter 1: Mechatronics

Application of Correlation and Coherence Functions in Diagnostic Systems J. Dziurdź	3
Concept of Measurements and Acquisition System for Identification Process of a Synchronous Ship Generator A. Polak	13
Damage and Corrosion Diagnostics of Welded Light Alloys Ship Constructions W. Jurczak	20
Elements of Dynamics Analysis of the Warship Launcher of Anti-Aircraft Short Range Homing Missiles Z. Dziopa	28
Hyperbaric Swimming Simulator R. Kłos	43
Impact Modeling of Underwater Explosion A. Grządziela and B. Szturomski	51
Mechatronics Systems Supported by Vision Techniques P. Kohut	62
Supporting the Empiric Research of Diesel Engines with Multi-Equation Models R. Zadrag	74
The Analysis of Possibility of Using Electromagnetic Drive for Autonomous Biomimetic Underwater Vehicle G. Grzeczka	82
The Fluctuational Model of Small Floating Objects Identification by Means of Passive Radar Reflectors J. Lisowski and A. Szklarski	88
The Radar Data Transmission to Computer Support System of Ship Safety J. Lisowski and A. Lazarowska	95
The System of Visual Assessment of Technical State of Underwater Objects A. Olejnik	102
Chapter 2: Control	
Control-Oriented Modelling of Spatial Motion of Autonomous Underwater Vehicle J. Garus	109
Course Control of Unmanned Surface Vehicle P. Szymak	117
Dynamics and Control of a Gyroscope-Stabilized Platform in a Ship Anti-Aircraft Rocket Missile Launcher Z. Koruba	124
Fuzzy Track-Keeping Steering Design for a Precise Control of the Ship J. Małecki	140
The Study of Distributed Manufacturing Control System Self-Configuration K. Bachula and J. Zajac	148
Trajectory-Tracking Control of Underwater Vehicles A. Zak	156

Chapter 3: Robotics

An Algorithm for Generation of Coordinated Robot Trajectories in Cartesian Space A. Słota	169
Automated Guided Vehicle System for Work-in-Process Movement J. Zajac, G. Chwajoł, T. Wiek, K. Krupa, W. Małopolski and A. Słota	181
Distance Measurement Using a Stereo Vision System B. Żak and S. Hożyń	189
Optoelectronic Systems on Board of Unmanned Surface Vehicle 'Edredon' Z. Kitowski	198
Segmentation Algorithm Using Method of Edge Detection B. Żak and S. Hożyń	206
Sound Silencing Problem of Underwater Vehicles K. Listewnik	212