Selected, peer reviewed papers from the 2012 3rd International Conference on Mechanical and Aerospace Engineering (ICMAE 2012)
Applied Mechanics and Materials Volume 232

Paris, France
7 – 8 July 2012

Editors:

Amanda Wu

ISBN: 978-1-62276-616-1
Table of Contents

Preface and Committees

Chapter 1: Advances in Composites Materials

Effect of Process Parameters on Defect Formation in Friction Stir Processed 6082-T6 Aluminium Alloy
A.E. Titilayo and A.S. Akinwale 3

Verification of Accelerated Methods for Determining the S-N Curve
S. Przemyslaw 8

Effects of Atmospheric Conditions on the Mechanical Properties of Tires
Z. Olszewski and K.J. Waluś 14

Hypothesis of Local Zones with Dependent Fatigue Damages Accumulation
A. Urbach, M. Banov and V. Turko 19

Experimental Research on Acoustic Emission of Granite under Uniaxial Compression and Splitting Tensile
Z.Z. Li, J.L. Tao and Y. Li 24

The Characteristic Features of Composite Materials Specimen’s Static Fracture Investigated by the Acoustic Emission Method
A. Urbach, M. Banov, V. Turko and K. Tsaryova 28

Mesoporous Activated Carbon Prepared from Bamboo by One-Step CO₂ Activation Used for Puerarin Separation
J. Guo, Y.Q. Guan, X. Wang, C. Sun and Y. Luo 33

The Microstructure and Hardness of Al₂O₃ Particle Reinforced Composite
Y. Sahin and K.E. Öksüz 39

Overall Mechanical Properties of Particulate Porous Composites Following Two-Step Homogenization Scheme
S. Barboura and S. Ramtani 45

An Empirical Model of Ribbed Cylindrical Glass Reinforced Plastic Tanks
S. Noroozi, J. Vinney, P. Sewell and R. Khandan 51

Surface Quality and Dust Analysis in High Speed Trimming of CFRP
M. Haddad, R. Zitoune, F. Eyma, B. Castanié and H. Bougerara 57

Elastic and Plastic Stress Analysis of Composite Beams under Distributed Load
A.M.A. Saber 63

A Semi-Analytical Model for Buckling of Laminated Plates with the NKQ Method
R. Khandan, S. Noroozi, J. Vinney, P. Sewell and M. Koohgilani 68

Effective Mechanical Properties for Composites with Three-Phase Randomly Distributed Aggregates Predicted by Multi-Step Mori-Tanaka Method
D.M. Luo, W.X. Wang, Q.Y. Chen, H. Yang, Y.L. Zhou and B.D. Li 73

Multiple Nonlinear Regression Analysis for the Prediction of Macroscopic Elastic Properties on Composite Containing Interphase
Y.J. Liu, Y. Yan and H.Q. She 78

Research and Simulation on Strengthening Steel Structure with Carbon Fiber Sheet
Y.H. Chen 82

Reconfiguration of a Milling Machine to Achieve Friction Stir Welds
A.E. Titilayo, M.D. Makundwaneyi and A.S. Akinwale 86

Quasi Static Analysis of Anti-Plane Shear Crack
H. Hentati, R. Abdelmoula, A. Maalej and K. Maalej 92

Quasi Static Fracture – Global Minimizer of the Regularized Energy
H. Hentati, R. Abdelmoula, A. Maalej and K. Maalej 97

Analysis on the Friction Performance of the Bionic Surface with the Convex Domes for Increasing Friction
H. Sun, L.J. Xiao and C.Y. Sun 102

Evaluation of Delamination in Drilling Rice Husk Reinforced Polyester Composites
S.A.S. Azuan, J.M. Juraidi and W.M.W. Muhamad 106
The Element Free Galerkin Method for Fully Developed, Open-Channel Magnetohydrodynamic Flow
X.H. Cai, G.X. Ji, P. Xu, M.L. Zhu and J.R. Lu 111

Chapter 2: Nanomaterials, Functional and Biomedical Materials

Dynamic Response of an Electro-Rheological Sandwich Beam with Different Elastic Layers Subjected to Simultaneous Impact Loads
M. Sepehrinour and M. Nezami 117

Design of a Microstrip Antenna Based on the Magnetolectric Composite Material
H. Yang and Y. Lei 122

Thermophysical Properties of Nanoparticles-Phase Change Material Compositions for Thermal Energy Storage
S.C. Lin and H.H. Al-Kayiem 127

Architectural Application of Smart Materials for Non-Flexible Structures Made by Flexible Formworks
M. Bemanian, M. Mahdavinejad, A. Karam and S.R. Ashtiani 132

Smart Surveillance System Detection Using PCA-Based Feature Extraction

Biomechanical Study of Lumbar Spinal Fixation Device
F. Manek, P. Marcián, Z. Florian, J. Valášek and V. Ebringerová 142

Investigating the Effect of Gripping on Upper Limbs Muscles by Modeling and Electromyography Test
G. Azizpour, M. Sadeghimehr and M. Sharifi 147

Comparative Study of Mechanical Properties of Bone Tissue Based on the CT and the µCT Slices
E. Prášilová, P. Marcián, D. Krpalek, K. Řehák, R. Malina and V. Konečná 152

Studies on Post-Yield Behavior of Cortical Bone

Microstructures and Various Properties of Hot-Extruded Mg-Zr-Ca Alloys for Biomedical Applications
Y.L. Zhou, D.M. Luo, Y.C. Li, C. Wen and P. Hodgson 162

Chapter 3: Aerospace Engineering, Air Vehicles and Navigation System

Design and Development of an Integrated Flight Planning and Rehearsal System Based on GIS and Navigation Database
D.C. Li, N. Cheng, P. Cheng and J.Y. Song 169

Effect of Nose Tip on Wing Rock of Slender Delta Wing
S.R. Bakaul, Y.K. Wang, G.X. Wu and Q. Humayun 178

Research on Airplane BOM Management Based on Single Source of Product Data
L.N. He, X.G. Ming, F.B. Kong, H.L. Zuo and Z.H. Yao 184

A Novel Design in Micro-Air-Vehicle: Flapping Rotary Wings
J.H. Wu, C. Zhou and Y.L. Zhang 189

Nonlinear Hierarchy-Structured Predictive Control System Design for Hypersonic Flight Vehicle
P. Wang, L.H. Liu and J. Wu 194

Friction Stir Spot Welding Technology and its Application in Aerospace Industry
S. Zhang, F.B. Qiao and L.J. Guo 200

Application of Fuzzy Adaptive Fusion Algorithm in INS/BNS/GPS Integrated Navigation System
Y. Ren, D. Xu and W.F. Yue 205

Chapter 4: Aero-, Hydrodynamics and Wind Tunnel
Experimental Investigation on Supersonic Jet Screech Tones
J.M. Li, C.B. Hu and J.H. Bai

Effect of Wind Directions on the Thermal Performance of Three Aligned NDDCT: Parallel and Perpendicular Directions
S. Ghafari-Gousheh and A.A. Golneshan

Influence of Tip Clearance on the Turbulent Aerodynamics of Axial Flow Fan under off Design Conditions
P.K. Akula, B. Singh, M. Manikandan and G. Srinivas

Investigation of Transient Shock Wave in Supersonic Wind Tunnel
B. Ghadimi, M.D. Manshadi and M. Bazazzadeh

Estimation of Skin Friction Drag on a Model in Hypersonic Shock Tunnel
J. Sura, V. Menezes, A. Kirthiyvasan and V. Kulkarni

Numerical Investigation of Hypersonic Double-Cone Flow
W.X. Kong, R. Zhao, J. Yu and C. Yan

Studies on Aerodynamic Characteristics of Dump Diffusers for Modern Aircraft Engines
P. Sathyan, S. Srikanth, I. Dheepan, M. Arun, C. Aswin and V.R. Sanal Kumar

Numerical Wind Tunnel Simulation of Wind Loads on a Solar Photovoltaic Power Generation Station
S.M. Xu, H.G. Huang, S.Q. Yu and P. Wang

Flow Velocity Investigation by Particle Image Velocimetry in Supersonic Air Ejector
A. Bouhanguel, P. Desevaux, Y. Bailly and L. Girardot

Influence of the Curved Ground Surface on the Lift of Flat Plate Airfoil
S.S. Chen, F.F. Xiong, V.A. Frolov and K.Y. Li

Dynamic Impact Behavior of Water Droplet on a Superhydrophobic Surface in the Presence of Stagnation Flow
M. Mohammadi, S. Moghtadernejad, P.J. Graham and A. Dolatabadi

Layer Thickness Variation in Two-Phase Flow of a Third Grade Fluid
M.K. Mitkova, A.M. Siddiqui and A.R. Ansari

A Two-Phase Flow Model with VOF for Free Surface Flow Problems
W. Zhang, Y.H. Tang, C.B. Zhao and C. Zhang

Theoretical and Experimental Study on Oil-Water Two-Phase Flow in a Downhole Venturi Meter
S. Huang, P. Wang and Y.H. Guan

Study of Numerical Evaluation about Kinestate of Mixed Particles in Rectilinear-Flow Pneumatic Conveyance
Y. Li, S.S. Chen and G.Y. Yang

Capillary Force in the Particle-Particle-Substrate System
L. Yang, J.H. Hu, N. Sheng and L.J. Kong

Chapter 5: Advances in Rocket and Space Engineering, Technology

Range Prediction and Trajectory Correction of Long Range Rocket with Attitude Stabilization
K.Y. Li, F.F. Xiong, C. Zhang and S.S. Chen

Research of Pipeline Fault Diagnosis for Liquid Rocket Propulsion System
Y.J. Li, X.H. Peng, Y.Q. Cheng and J.J. Wu

Air Breathing Rocket Engines and Sustainable Launch Systems
S. Amar and R.T. Gowtham Manikanta

Studies on Ignition Delay and Flame Spread in High-Performance Solid Rocket Motors
C. Aswin, S.S. Vishnu, D.A. Kumar, S. Deepthi, S.K. Kumaresh, M. Arun and V.R.S. Kumar

Advanced Space Launching Mechanism
R. Chowdhuri, P.S. Prakash and R.K. Shakya

Making an Outer Space Adventure by Means of the Periodic Return of Halley Comet
Y.F. Zhu

A Fault Isolation Method Based on Analytical Redundancy Relations for Spacecraft Propulsion System
X.H. Peng, Z. Yan, Y.J. Li and J.J. Wu
Discharge Characteristics of a Laser-Electromagnetic Coupling Plasma Thruster for Spacecraft Propulsion
D.X. Zhang, R. Zhang, Z. He, F. Zhang and J.J. Wu 337

Studies on Gravity Influence on Solid Propellant Burn Rate
V. Hariprasad, P. Sankar, P. Shivahari and V.R.S. Kumar 342

Design Algorithm for Upper Stage’s Attitude Control System
M. Delalat, M. Nosratollahi and A. Adami 348

Influence of Electrode Flare Angle on the Performance of Pulsed Plasma Thruster
R. Zhang, D.X. Zhang, Z. He, F. Zhang and J.J. Wu 353

Fault Diagnosis Method Based on Integration Signed Directed Graph with Quantitative Knowledge
Z. Yan, X.H. Peng, Y.Q. Cheng and J.J. Wu 359

Chapter 6: Robotics: Modelling, Simulation etc.

A Kinematic Model for Volumetric Error Estimation of a Special Purpose CNC Machine
M. Simpson and I.A. Gorlach 367

Development of Efficient Tactile Sensing System for Humanoid Robotics
M.I. Khan, A.M. Khan, M.K. Saleem and A. Nouman 372

A New Method for Precision of a Serpentine Snake-Like Robot
S. Sarrafan and A. Akbarzadeh 377

Robot Manipulators: Modeling, Simulation and Optimal Multi-Variable Control
P. Jamali and K.H. Shirazi 383

Autonomous Laser Guided Vehicle for Book Deposition in a Library
N. Mehta, P. Limaye, C. Talnikar and P. Joshi 388

Experimental Study of Non-Contact Robot Gripper for Food Industries
N. Elango, N. Obianuju Onubogu and S. Ragunathan 392

CBR Based Collision Avoidance Approach to Reactive Control for Multi-Robot System
Q. Liu, J.C. Ma and Q. Zhang 398

Performance Optimisation of Mobile Robots for Search-and-Rescue
S.H. Choi and W.K. Zhu 403

Improved Hough Transform Applying in Mobile Robot Vision Navigation
Y.P. Jiang, X.X. Zhang and X.P. Fu 408

A Method for Solving Dynamic Equations of a 3-PRR Parallel Robot
S.N. Nabavi, A. Akbarzadeh and S. Abolghasemi 414

Robustness Compensation Control of Simulation Loading System Based on Secondary Regulation
J. Wang, H. Wang and Z. Xu 419

Chapter 7: Vibration Analysis and Measurement

A. Zerkane, K. El Bikri and R. Benamar 427

Micro-Vibration Analysis and Measurement on High Resolution Remote Sensing Satellites
H. Miao, G.L. Song and Q. Liu 432

Localization and Identification of Vibroacoustic Sources of Gear Transmission Mechanism by Inverse Frequency Response Function
A. Derouiche, N. Hamzaoui and T. Boukharouba 437

Reaction Wheel Disturbance Characterization by Analysis of Micro-Vibration Measurements
F. Liebold, S. Wiegand and R. Käso 445

Vibrations of a Non Jeffcott Rotor with One Non Linear Bearing
A. Vardhan 450

The Study of the Effect of the Blade’s Aspect Ratio and Thickness on Rotating Vibration
H.W. Li, Z.B. Xie and M.M. Jia 456
Model Predict Vibration and Noise of Disc Brake
L.H.T. Huynh, A. Dittrich and O. Dráb 461

Dynamics of Cantilever Beams due to Time-Dependent Excitations and their Suppression
A. Rebei and K. Al-Saif 465

Chapter 8: Simulation Studies of Various Systems

Detailed Investigation of Detached-Eddy Simulation for the Flow Past a Circular Cylinder at Re=3900
R. Zhao and C. Yan 471

Simulating the Granular Materials Flow in Rotary Kilns
S.S. Khamesi, P. Kavandi and M. Mohammadi 477

Hardware-in-the-Loop Simulation and Flight Experimentation of the Control System on a Small Solid Rocket
W.B. Huang, Y.H. Zhang, Z.Y. Jiang and W.H. Zhang 482

Simulation and Optimization Analysis of External Spur-Gear Pump Shell
H. Wang, J. Hou and Y.D. Sha 487

Direct Computational Method for Life Prediction of UD Fibre Reinforced Polymers Based-on Plasticity-Damage Simulation
D. Vasiukov, S. Panier and A. Hachemi 492

Computational Simulation of Small Punch Test
P. Jindrich, H. Jiri and K. Petr 497

Numerical Simulation of Gel Propellant Droplet Breakup in Airflow
Z.J. Liu, Z. He, J.J. Wu and X.P. Hu 502

Dynamic Simulation on Shock Excitation Hydraulic System with Rotary Valve Based on AMEsim
H. Wang and Z.Y. Deng 508

The Constant Pressure Gas Supply Control System and Characteristic Simulation to Air Compressors Based on Fuzzy Self-Tuning of PID Parameters
H. Wang and H.J. Wang 512

Helicopter Maneuver Flight Simulation and Control Law Design
J.Y. Wang 517

Pressure Control Characteristics Simulation Research of Electro-Hydraulic Proportional Variable Pump
H. Wang, Z. Xu and F.L. Meng 521

ADAMS/MATLAB Co-Simulation: Dynamic Systems Analysis and Control Tool
L. Ángel, M.P. Pérez, C. Diaz-Quintero and C. Mendoza 527

An API_m Algorithm to Solve the Scheduling Problem in an FMS with Presence of Breakdowns

Tube Hydroforming Analysis Based on Ansys
X.Y. Yang 537

Chapter 9: Modelling of Systems

Modelling Aerodynamics Unsteady Loads on the Horizontal Tail Plane of a Civil Aircraft
R. Calderon, B. Aupoix, B. Calmels and C. David 543

Modeling of Layering Ceramic Shell Mould
Z. Harun, N.M. Nawi, M.F. Batcha and D. Gethin 548

Modeling Approach of a Near-Space Airship Using Newton-Euler and Lagrangian Formulation
Y.N. Yang, J. Wu and W. Zheng 553

Developing a Dynamic Model for Unmanned Aerial Vehicle Motion on Ground during Takeoff Phase
M. Essuri, K. Alkurmai and A. Ghmmam 561
Modeling of Planar Embedded Cracks of Arbitrary Shape under Non Uniform Mode I Loadings
B.E. Hachi, M. Guesmi and M. Haboussi 568

Algebraic Modeling for Dynamic Gates in Dynamic Fault Trees
B. Wang, Y. Li, W.Y. Xing and D. Liu 573

Dynamic Fault Trees Analysis for Importance Measures Based on Cut Sequence Set Model
D. Liu, X.J. Chen, Y. Li, Z.W. Zhao and X.M. Li 578

Modeling of Urea-Water Solution Injection Spray in SCR System
N.S. Nagaraj, N. Kapilan and P.S. Sadashiva 583

Area Symbol Model for GIS Based on AutoCAD
P. Yang, G.J. Li and X.Z. Zhang 588

The State of the Art in Energy Consumption Model – The Key to Sustainable Machining
P. Tao and X. Xun 592

Chapter 10: Optimization Techniques

Quality Prediction in Complex Industrial Process with Support Vector Machine and Genetic Algorithm Optimization: A Case Study
J.G. Yang, Z.J. Lu and B.Z. Li 603

Thermoeconomic Approach and Optimization of a Solar Thermal Power Plant
A. Baghernejad and M. Yaghoubi 609

Influence of Optimization Algorithm on Airfoil Shape Optimization of Aircraft Wings
R. Mukesh, K. Lingadurai and K. Elamvaluthi 614

On the Optimization of Vent Arrangement in a Subway Station
A. Sojoudi, F. Vakilimoghaddam and R. Neishapouri 620

3-D Path Planning for UAV Based on Chaos Particle Swarm Optimization
Z. Cheng, Y.X. Tang and Y.L. Liu 625

Research and Simulation on Optimization of Phase Noise in Crystal Oscillators
Y. Wang and X.H. Huang 631

The Design and Optimization of Fuzzy Controller Based on Vibrating Mill Granularity
J.H. Zhang 635

A Comprehensive Approach for Thermal Error Model Optimization for ANN-Based Real-Time Error Compensation in CNC Machine Tools
A.E. Ouafi and M. Guillot 639

Optimal Trajectory of Flexible Manipulators Using Genetic Algorithms
A.A. Ata, E.H. Haraz, A.E.A. Rizk and S.N. Hanna 648

Chapter 11: Applications of Neural Network and Finite Element in Materials

Predictions of Scratch Characters for Engineering Material by Using FEM and Abductive Network
T.S. Yang, S.Y. Chang and J.C. Chou 659

Optimize the Satellite Orientation by Using the Inertial Pulse Method, Intelligent Damper, Dynamics, Kinematics and Proper Neural Network
A. Olaru 665

Detection of Mechanical Defects by Neural Networks “Experimental Analysis”
B. Bélaid and N. Hamzaoui 674

Global Stability Properties for Neutral-Type Hopfield Neural Networks
D.H. Hao and L. Wu 682

Modal Stress Intensity Factor Using Extended Finite Element Method
B. Abdelkader, B. Mohamed, H.B. El-Khalil, N.C. Khaira and G. Mohamed 686

Stress of a Rocket Turbine under Different Loads Using Finite Element Modeling
E. Amr and G.Z. Liang 691

Magnesium Alloy Stent Expansion Behavior Simulated by Finite Element Method
M. Iqbal Sabir, E.B. Liu, Z. Li, Y.F. Zheng and L. Li 697

Integrated Thermal Management System Design for Advanced Propulsion System

Study of Induction Heating Process Applied to Internal Gear Using 3D Model
N. Barka, A.E. Ouafi, A. Chebak, P. Bocher and J. Brousseau 730

Sensitivity Study of Temperature Profile of 4340 Spur Gear Heated by Induction Process Using 3D Model
N. Barka, A. Chebak, A.E. Ouafi, P. Bocher and J. Brousseau 736

Numerical Simulation of Phase Change Thermal Storage in Finned Double-Pipe Heat Exchanger
H. Shokouhmand and B. Kamkari 742

A New Approach about Heat Transfer of Hot-Wire Anemometer
M.D. Manshadi and M.K. Esfeh 747

The Design of the Pre-Heater of Gas-Operated Hot-Water Heater
T.S. Yang, M.W. Ke and J.C. Yeh 752

Heat Transfer Study in Oil Channels of a Power Transformer Winding ONAN Cooling System with and without Insulating Paper Based on Numerical Modeling
S. Salari, A. Yousefi, M.R. Nasrollahzadeh and M. Khalilikhah 757

The Interior Ballistic Research for Gas-Steam Launching System with Water Injection in Block
J.H. Bai, C.B. Hu and J.M. Li 765

A Numerical Study on Heat Transfer and Lubricant Depletion on an Anisotropic Multilayer Hard Disk
Y. Zeng, X.Y. Huang, W.D. Zhou and S.K. Yu 770

Application and Research of Feedforward Control in Boiler Control of Supercritical Thermal Power Generating Unit
J. Li, W.W. Li and D.K. Zhang 775

Augmentation of Convective Heat Transfer of Highly Viscous Fluid within Three-Dimensional Internally Finned Tube
C. Zhang, S.J. Gao, X.Y. Song, F. Chen and G.Y. Liao 780

Study of Hydrogen-Air Flame Stability with Different Initial Pressure
X.H. Liu, H. Liang, Z.Q. Fan and D.J. Wang 784

The Features of Microwave Thermal Conversion of Oil Sludge
W.F. Wang, G. Li, X.Y. Yong, P. Liu and X.F. Zhang 788

A Micro Gas Turbine Fuelled by Methane-Hydrogen Blends
F. Reale, R. Calabria, F. Chiariello, R. Pagliara and P. Massoli 792

Hex Turbofan Engine
S. Mahesh and P.S. Prakash 797

Study on Damage of a Floating Roof-Type Oil Storage Tank due to Thermal Stress
Y. Hirokawa, H. Nishi, M. Yamada, S. Zama and K. Hatayama 803

Experimental Study on the Laminar Cooling Process of the Middle and Heavy Plate
M.T. Wang, X.T. Li and F.S. Du 808

Microbial Fuel Cell for Sustainable Electricity Production from Seafood Wastewater
H.L. Sun, H.B. Lv and W.J. Nie 812
Chapter 13: Automotive Engineering and Under-Water Technologies

Analysis of a Roll Cage Design against Various Impact Load and Longitudinal Torsion for Safety
C.D. Naiju, K. Annamalai, P. Nikhil and B. Bevin 819

Knowledge Based Engineering Optimization and Interoperability: An Automotive Case-Study
F. Danesi, N. Gardan and E. Kwassi 823

Experimental Validation and Adjustment of the Semi-Active Suspension Numerical Model Incorporating a MR Damping
S. Boukerroum, N. Hamzaoui and N. Ouali 828

Experimental Determination of Vehicle Lateral Drift Characteristics under Laboratory Conditions
K.J. Waluś 836

Automated Car Seed Limiter for Cars With Electronic Fuel Pedal
M. Khairul Ali Hassan, J. Josip Peranchis, K. Faidi and S.L. Ng 841

Research on Vehicle Longitudinal Following Control Modeling and Collaborative Simulation
L. Zhang, Y.Y. Zhu and K.X. Cao 846

Research on Integrated Assembling Technology of Passenger Vehicle Clutches Cover Assembly
Z.F. Yan and W. Zhang 852

CFD Simulations for Hydrodynamic Derivatives of High Speed Underwater Vehicle
M.S. Akram and P. Guang 857

The Electrochemical Principle of Measuring Underwater Electric Field
X.J. Wang, S. Zhang, Y. Liu and D. Ji 863

Calculation of Friction Coefficients in Journal Bearings to Determine the Turning Gear Motor Power
A.P. Manoj Kumar and N.S. Nagaraj 869

Stresses Induced in Saturated Asphalt Pavement by Moving Vehicles
B.F. Pan and Y. Wang 874

Analysis of All Terrain Vehicle (ATV) for Impact Loading and Roll over Considering the Safety of Occupants
C.D. Naiju, K. Annamalai, B. Bevin and P. Nikhil 878

Chapter 14: Reliability and Reverse Engineering

Structural Damage Detection of Jointed Frame Structures Using Chaotic Excitation and Attractor Analysis
B. Wu, Y. Zheng, Q.H. Qiu and C. Xu 885

Fatigue Reliability of Selective Laser Sintered (SLS) Components Using Weibull Analysis
C.D. Naiju, K. Annamalai, S. Karthik and R. Goutham 891

Reliability of Fused Deposition Modelling (FDM) Components on Fatigue Cycles to Failure Using Weibull Analysis
C.D. Naiju, K. Annamalai, R. Goutham and S. Karthik 895

A Trimming Method of Experiment Based on Reverse Engineering
B. Zang, B.L. Liu and Y.W. Tian 899

Mesh Denoising Based on Spherical Wavelets in Reverse Engineering
J.P. Hu and Q. Xie 904

A New Modified Back-Propagation Algorithm for Forecasting Malaysian Housing Demand
N.M. Nawi, N.A. Hamid and N.Y. Zainun 908

Chapter 15: Miscellaneous Researches of Technical Interest

Analysis of Companding Techniques Applied to Onboard Telemetry Systems
M.B. Lucks and H.A.C. Procópio 915
Adaptive Building Envelope System Using Parametric Camshaft Mechanism for Sustainable Building
F.U. Sjarifudin 919

Mechanics Analyzing of Suspended Formwork Supporting System and Research of Decision System in Constructing Transfer Storey Structure of Steel Reinforced Concrete
Y. Li and J. Cai 925

Design and Analysis of a Ultrasonic Sliding Platform

Influence of pH on Cadmium Removal from Wastewater by SSI
J.G. Li, Y. Shi, N. Bi and Y.P. Feng 935

Tribological Behaviour and Metallographic Study of Al 2014 Alloy Reinforced by SiC Particle
Y. Şahin 939

Application of High-Linearity Analog Optocoupler in DSP Acquisition Circuit
Y.Q. Tan, X.Y. Liu and B.Q. Den 944

Structural Nonlinearity Identification Using Perturbed Eigen Problem and ITD Modal Analysis Method
H. Kashani and A.S. Nobari 949

The Kinematics of Eight-Speed Planetary Gear Hubs for Bicycles
L.C. Hsieh and H.C. Tang 955

Influence of Hole Shape and Pattern on the Prediction of Limiting Strain for Perforated Commercial Pure Aluminium Sheets
G. Venkatachalam, S. Narayanan, S. Patel Nilay, P. Nishant and C. Sathiya Narayanan 961

Cutting Tool Condition Monitoring in Machining Processes - A Comprehensive Approach Using ANN Based Multisensor Fusion Strategy
A.E. Ouafi, M. Guillot and N. Barka 966