Applied Research and Engineering Solutions in Industry

Selected, peer reviewed papers from the International Conference on Electrical Information and Mechatronics (ICEIM 2012)

Applied Mechanics and Materials Volume 312

Jiaozuo, China 23-25 December 2012

Volume 1 of 2

Editors:

Xudong Wang Baoyu Xu Qingmei Xiao

ISBN: 978-1-62748-718-4

ISSN: 1660-9336

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by Trans Tech Publications Ltd. All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact Trans Tech Publications Ltd. at the address below.

Trans Tech Publications Ltd. Laubisrutisr 24 CH-8712 Stafa-Zuerich Switzerland

Fax: +41 (44) 922 10 33 Fax: +1 (603) 632-5611

e-mail: sales@ttp.net

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2634

Email: curran@proceedings.com Web: www.proceedings.com

Table of Contents

Preface, Committees and Reviewers

Chapter 1: Mechanical Engineering

Rotor Dynamics Analysis of the Flywheel Energy Storage System G.X. Li, Y.S. Zhang, L. He and L. Yang	3
Study on Effect of Spindle on Dynamic Performance and Surface Quality of Whole Machine Tool	
R.C. Wang, T. Zhao, C.L. Yu, H. Zhang and P.Q. Ye	11
Model Analysis of Offset Cylinder Based on Finite Element Method Z. Xin	16
Structural Analysis and Design Optimization of PET Beer Bottles W. Yuan, L.H. Xie, G.M. Zhang, D.Z. Liao and J.D. Lu	21
Analysis of Fatigue of Cylindrical Roller Bearing in Printing Press J.M. Wu, Y. Chen, B. Gao and T.Y. Yi	25
Operation Characteristics Analysis of Gas-Liquid Pressurization of the Die-Cutting Experimental Table Based on Amesim Software N. Guo, S.Y. Zhao and Y.S. Qi	29
Study on the Folding Device of GMS-7 Type Spine Taping Machine C.C. Ren, J.F. Cai and G. Li	33
Optimization on Highway Tunnel Structure W.S. Shen	37
Kinematic Analysis on Series Combined Mechanism of Elliptic Gear and Outer Geneva S.H. Shen and J.F. Cai	42
Force Analysis and Experimental Study of Separator Cam of Feeder X.P. Jiang and Y.M. Wang	47
Design of Longitudinal-Torsional Vibration Stepped Horn with Multiple Diagonal Slits C.S. Liu, H.Q. Wu and A.M. Luo	51
Research on Three-Dimensional Structure Optimization for Fir-Tree Root and Rim of Turbine Blade with Complex Damping Structure M.H. Zhang, Q. Zhang, L. Zheng and D. Zhang	55
Qualitative Analysis of a Competitive Lotka-Volterra System with Stage Structure in Mechanics Engineering H.T. Zhu and H.S. Wang	60
Design of Automobile Driving Trainer Simulated Gearbox S.J. Luo, X.L. Zhang and S.F. Chai	66
Cam Curve Synthesis Method Based on Classical Splines R.M. Fang, J.F. Cai and G. Li	69
Optimization Design of Heterogeneous Metal Sandwich Plate Using Response Surface Method	
Y.Q. Wang, K. Sun, X.B. Kuang, S.G. Guo and X.G. Tian	74
Optimization Design for the Pressure Shell of Autonomous Underwater Glider Based on GDO Method J. Liu, Y.H. Wang, Y.H. Liu and F. Liu	80
Physical Principle of New Style Display Y.Z. Cao and F.Y. Li	85
New Energy Vehicle Air Conditioner Y.H. Wang, S.S. Xiong, B.S. Guo and X.S. Ren	90
Optimization Design of Cylinder Grating Used for Non-Contact Speed Measurement G.S. Zhang and Y. Xu	95
Jaw Crusher Based on Discrete Element Method F.S. Mu. H. Li, X.X. Li and H.Z. Xiong	101

Optimization Design of Feeding Unit of the Forward Type Flute Laminating Machine R. Xie, J.F. Cai and J.C. Chen	106
Design and Application of the Motor Driven Book Lateral Indentation Machine S.Q. Wu and S.K. Ye	110
Characteristic Analysis of Side Impact of MDB and Rigid Column of Automobile X.T. Wang, Y.F. Zhao and X.J. Li	114
Optimization Rules of Hydraulic Absorbers Energy Absorbing Y.L. Wu, H. Zhao, G.G. Zhang and M. Wang	119
Research of Unpowered Cleaning Equipment for Blanket Cylinder C.D. Lv, J.F. Cai and R. Xie	124
Study on Windage Yaw of Ceramic Suspension String D.Q. Zhang, L.B. Jiang, C. Wang, Z.F. Yuan, G.C. Zhang and Y.J. Guan	128
Modeling and Analysis of the ZB39 Glass-Shaped Tangent Tower G.C. Zhang, Z.F. Yuan, B.B. Kong, L.B. Jiang, D.Q. Zhang and Y.J. Guan	133
Design and Simulation Analysis of HTS Wind Generator P. Cheng, G. Wang, P. Qin and F.Y. Li	138
A Prediction Model for Surface Roughness in Milling Based on Projection Pursuit Regression	
X.Q. Pan, N. Zhu, Y.C. Dong, C.X. Liu, M. Lin and X.Y. Wang	143
Effect of Regular Transverse Wave on Ship Turning Maneuverability L.J. Yang and Y.H. Tao	148
Robust Design to Control the Chaos of Fold Mechanism with Clearance Y.C. Yuan, Y. Li and Y.M. Wang	153
Study on Energy Saving of Hybrid Hydraulic Excavator W.H. Wu, J. Ke, H.L. Liu, Y.L. Yang and H. Zheng	158
A Cushioning Performance Comparison between Honeycomb Paperboard and Corrugated Board Based on the Stress-Energy Method J. Wu, S.J. Huang, Y.L. Wang, Y.P. Du and L.Y. Chen	163
Simulation Analysis of Tire Dynamic Model P. Zhang, L.X. Cui, L. He and Q.S. Xia	167
A Liquid Analysis of the Rectangular Wave Input Signals of Hydraulic Mufflers C.J. Shan, L. Li and J. Luo	172
Dimension Optimization of Machine Tools' Components L. Guo, H. Zhang and X.C. Lu	177
Dynamic Response of Eccentric Swinging Sheet Transfer Mechanism with Kinematic Pair Clearances	100
F. Cai, J.Q. Zhang and X.F. Ma Simulation of Flow Field and Calculation of Moment on Valve Plate for Butterfly Valve	182
X.H. Jin, Y. Shen and Q.F. Miao	186
Study on Optimal Design of Case Ejector Mechanism of Tank Autoloader Based on Kinematical Simulation	101
Y.N. Chen Calculation Method on the Cooling Roller of Waterless Offset Press	191
L. Jin, Y. Li, X. Zhang and M. Liu	196
Reverse Design for Wine Cushioning Package of Honeycomb Paper Core J. Wu, Y.L. Wang, L.Y. Chen, Y.P. Du and L. Yang	200
K-Type, Inverse K-Type and X-Type Legs Stability Analysis of Jack-Up Offshore Platform W.X. Tang, J. Cao, J. Zhang and C. Gao	205
Kinematical Analysis of Dismount of Double Salto Backwards Stretched with 2/1 Twists J.H. Zhou	210
Numerical Simulation Analysis on Anchored Shear Test of the Fractured Rock and the Slope Rock Mass Z.Q. Kang, X.Y. Zhang, Z.W. Luo and X.Y. E	215
Study on Extensive Statistical Mechanics by Nonextensivity B. Yang, H.L. Li and Y. Xiong	220
Study on Paper Separating Mechanism of Counting Machine Y. Li, Y. Tang, X. Zhang and N. Liu	226

Applied Mechanics	and	Materials	Vol.	312
--------------------------	-----	-----------	------	-----

С

Research of Flow Coefficient of New Throttling/Sealing Valve Based on CFD	221
Y.B. Jin, S.P. Zhou, H. Zhang and R. Yang Numerical Study on Thrust Generation Performance of Plunging Airfoils	231
J. Gao, R.S. Yuan, M.H. Zhang and Y.H. Xie	235
Chapter 2: Mechanical Transmission, Vibration and Friction	
Study of High-Speed Ball Screw Vibration and Noise D.X. Hao, K.S. Wang, C.L. Zha, Y. Zhang and H.F. Yan	241
Research on Balance Testing of Die-Cutting Pressure Based on Pulse System J.G. Li, Y.M. Wang, X.D. Shi and L. Zhang	245
Testing Technology of Dynamic Road Friction Coefficient P. Zhang, L.L. Cui, L. He and Q.S. Xia	249
ADAMS Dynamics Simulating and Analysis of Vibration Signal for Deep-Groove Ball Bearings	
Z.Z. Yang, J.G. Wu, B. Qin and Y.Z. Li Research on Vibration Bench of Vehicle Suspension by Finite Element	254
X.Y. Liu	258
Active-Adaptive Vibration Absorbers and its Vibration Attenuation Performance C. Peng and X.L. Gong	262
The Vibration Characteristics of Steam Turbine Blades with New Friction Damping	
Structures J. Wu, R.S. Yuan, P.F. Zhao and Y.H. Xie	268
Vibration of Press Based on Operational Modal Analysis M.M. Zhao, Y.M. Wang, X.D. Shi and J.G. Li	273
Optimal Design of NW Planetary Gear Reducer X.J. Hui	277
Modal Analysis of Airborne Equipment Mounting Rack J.D. Zhang, X.M. Qi and R. Tang	282
Analysis of Steel Rope Shock Absorber Amplitude Frequency Characteristics under the Basic Excitation	207
Y.P. Zhao, Z.L. Zhao and G.Y. Lu Modeling and Analyzing for Rotor System with Imbalance-Misalignment Coupling Faults	287
Based on Nonlinear Finite Element Method F.Z. Xu, X.J. Li, G.B. Wang and Y.L. He	292
Sound Intensity Test Analysis of the Acoustic Enclosure for the Refrigeration Compressor L. Zhang, S. Zhang and Y.M. Ma	296
Coupled Thermoelastic Vibration of the Axially Moving Sandwich Beam J.M. Wang, Y.H. Li and E.C. Yang	301
Analysis of Statics and Transient Responses on Automotive Gearbox Casing G.Y. Zhao, L.Y. Xie, Y.F. Zhao and K.Y. Wang	307
Chapter 3: Materials Engineering	
In Situ TiB ₂ and Al ₂ (Y, Gd) Particles Reinforced Magnesium Matrix Composite with Al-Ti-B Addition	
C.F. Fang, L.G. Meng, N.N. Wu and X.G. Zhang	315
Influences of Raw Materials and Concentration on Properties of Natural Cellulose Films D.N. Li, X.J. Ma and H. Qiao	319
Preparation Processes of Filter Aids Using Diatomite Concentrate Z.J. Ren, H.M. Gao, J.F. Guan and X. Liu	323
Preparation of Mesophase Asphalt-Based Carbon Fiber J.B. Hu, S.S. Zhou and C.Q. Fang	328
Preparation and Characterization of Homogeneous Grafted Cellulose in DMAc/LiCl System	
F.S. Chen and Z.H. Sun	332

Effect of Packaging Material on the Non-Enzymatic Browning of Litchi Juice M. Wu, Z.Y. Hu and P. Zheng	337
Statistical Optimization of Synthesis of β-Methylhydrogen Itaconate J. Zhao	341
Study on a Type of Low-Leakage Brush Seal Porous Media Model S.Q. Huang, S.F. Suo, K.B. Du, Y.J. Li and Y.M. Wang	345
Fabrication of a Superhydrophobic Aluminum Alloy Surface by Phosphoric Acid- Dichromate Method	
R.M. Wu, G.H. Chao and H.Y. Jiang	350
Research on Key Electromagnetic Model for Microwave Hot Recycling of Asphalt Mixtures T.S. Sun	354
Estimations of Optical Property for TP Film with Different Layers Coating Y.J. Chen, D.J. Huang, C.Y. Chen, C.Y. Chang, R.C. Hwang and H.C. Huang	358
Analysis of Acoustic Wave Property on AlN/Diamond/Si Thin Film Substrates S.T. Wang, S.W. Chen, B.Y. Chen, C.Y. Cheng, R.C. Hwang and M.H. Chung	363
UV Ink Photoinitiators Migration to Food Simulants Behavior Using Spectroscopy T. Chen, W. Li and X.W. Zhou	368
Up-Conversion Mechanisms and Application of Rare Earth-Doped ZnO X.L. Wu, Y.Z. Yuan, H.F. Liu and Y.Y. Liu	373
An Experimental Study on Reasonable Content of Slag in Concrete C30	5,5
Q.F. Zhang	377
Safety and Evaluation of the Nano-Materials L.L. Qi	382
Synthesis of Flame Retardant of Melamine Phosphate K.M. Xie	387
Durability Analysis of Concrete Structure Y. Pan	392
Effects of Grain Refining and Modification on Mechanical Properties and Microstructures of Multielement Al-7.5Si Cast Alloy	
G.L. Liu and N.C. Si	396
Experimental Study of Magnetic Field Variation Induced in Ferromagnetic Materials Y. Yong, D. Sun and J. Ji	402
Study on Preparation Process and Properties of Polyethylene Terephthalate (PET) L.N. Ji	406
Effect of Gd on the Microstructure and Mechanical Properties of Mg-Sn-Zn-Al Alloy C.F. Fang, L.G. Meng, Y.F. Wu, L.H. Wang and X.G. Zhang	411
Study on Friction and Wear Performance of Plasma-Sprayed Metal Oxide Ceramic Coatings	
Z.Y. Shi, G. Li and J.F. Cai	415
Interference Character Analysis of Multi-Ring Composite Flywheel Rotor G.X. Li, Z. Ding, L. He and L. Yang	421
Fourier Transform Infrared Spectroscopy (FTIR) Study of ACQ-D Treated Chinese Fir with Different Post-Treatments	425
L.L. Yu, X.J. Ma and L.Z. Zhu Discussion and Analysis on Thermal Decomposition Laws of Oxysalt	425
Y. Ding A Brief Discussion on Nucleophilic Substitution Reaction on Saturated Carbon Atom	429
Y. Ding	433
Multiscale Modeling Techniques Based on Molecular Structure and Elastic Properties J. Li	438
Chapter 4: Manufacturing Technologies	
Finite Element Simulation of Enhanced Cooling Cutting of Stainless Steel Y. Su	445
Study of Cyclical Fluctuation during the Paper Transmission of Inkjet Printing System	773
Y.M. Liang, C.X. Cheng and Z.X. Wang	450

Research and Application of Integrated Electronic Commerce Platform in the Steel Industry Chain H. Zhang, P. Wu, Z. Li and D. Zhang	455
Study on Intelligent Reconfigurable Automobile Manufacturing System Model J.B. Wang and W. He	460
System Development in Integration of DNC-Based Manufacturing Information X.H. Ni and Z.Q. Gao	464
Study on Cold Expansion Process of High Pressure Components S.J. Zhang, Y.L. Wang and F.L. Yang	469
Study on Local Extrusions' Effects on Improvement of Die Casting Prismatic Parts' Forming Quality	47.5
W.G. Zheng, C.H. Yin, Y.H. Yuan, Z.M. Pan and C. Tang Analysis of Paper Vertical Inverting Accuracy in the Packing Paper Production Line C. Cheng and J.F. Cai	475 480
Analysis on Design and Mechanical Fabrication Process for Inkjet CTP Electromechanical Transmission Structure	
Y.X. Li, X.H. Wang, Y.S. Qi, S.Y. Zhao and Y.Q. Zhang New Algorithm for Ink Trapping Ratio Based on Transmittance Y.C. Xu, S.S. Zhou and J.L. Xu	484 489
Study of Powder Removing Technique for Film Laminating Y. Zhang, J.F. Cai and K.L. Zou	494
Framework and Key Enabling Technologies for Social Manufacturing J.W. Leng, P.Y. Jiang, F.Q. Zhang and W. Cao	498
Research on Wildcard Character of Appoximate Matching in Manufacturing Engineering X.H. Wu	502
Research on Printed Wiring Boards Manufacture Based on Optimization J.Z. Hu, A.N. Peng and X.Z. Lu	506
Design of Tropical Fruit Quality Safety Traceability System Based on 2-Dimensional Bar Code in Manufacturing Environment J.H. Sun and M. Meng	511
PS Plate Cuttolength Cutting Based on Flying Cutter H.Y. Zhao and J.B. Zhang	516
Experimental Research on Air Cushion Lamination Process B. Gao, J.F. Cai and X.G. Zhang	520
Development of Modularized Inline Coating System of Multi-Color Offset Printing Press J.B. Zhao, C.N. Tong, Z.H. Wang and F. Wu	525
Moistureproof and Waterproof Paperboard for Frozen Food Packaging M. Wu, P. Zheng, L. Zhang and J.F. Zhao	529
Design of Drop Test Machine for Transport Package Y. Yuan and Y.Y. Cao	533
Study on Storage of Gradient Temperature Cold Store J.Z. Yu and Z.L. Li	538
Study of Spot-Color-Matching in Gravure Y. Zhang, S.S. Zhou, C.J. Cao and B. Feng	542
Study on Plate Washer Sewage Treatment N. Liu, Y. Li and W.J. Sun	546
Printed Electronics Based on Precision Coating S.B. Xu and W.C. Xu	550
Study on Photoelectric Detection Technology of Full-Automatic Flute Laminating Machine L.M. Ye, J.F. Xin and J.F. Cai	554
Study on Key Technology of Flatbed Inkjet Process and Equipment Y.Q. Zhang, Y.S. Qi, S.Y. Zhao, X.H. Wang and J.Z. Guo	558
Chapter 5: Devices and Instruments for Detection and Diagnosis	

Solution of Mackling Rails Detection Using Testing H.K. Yang, Y.M. Wang, S.Q. Wu and M.M. Zhao

Study on the Measurement of the Feeder Cam Based on CMM Y. Tang, Y. Li, X. Zhang and T. Jin	570
Evaluation of Fracture Toughness of Structural Ceramic by Instrumented Indentation Z.K. Song, D.J. Ma, W. Chen and J.H. Guo	575
Research on the Compensation of Gradient Method of Buried Metal Pipe Detector Q.S. Zhu, F.Y. Lin, C.G. Jiang and Y.F. Zhang	579
Design of Comprehensive Test Instrument Based on FPGA and Cortex-M0 L.J. Yu, L.H. Sun and C.C. Huang	583
HIRFL-CSR Water Leakage Detection System Design and Research Y.J. Li, Y.Y. Wang, D.T. Zhou, J. Yin, W.X. Zhou, L.L. Li, F.Y. Lin and X.L. Ma	588
Fault Diagnosis of Rolling Bearing Based on Kernel Independent Component Analysis by Using Mixed Kernel Function B. Zeng, A.H. Chen and L.L. Jiang	593
Double-Position Positioning Test and Analysis on Holographic / Protruding Lettering of Cigarette Packet Based on Machine Vision J.F. Xing, Y. Chen and L.J. He	597
Research on Measurement System of Print Image on Line	
Y.Q. Sun, H. Chen, J.X. Sun and J.F. Cai Research on Fault Diagnosis Strategy of Belt Conveyor	603
W. Hu and O. Li	607
Study of Plateau Lakes Chlorophyll-A Content Based on Remote Sensing Technology Q.Y. Chu	611
Study on Efficient Central Fatigue Detection Scheme Y. Xiong and W.T. Su	615
Valve Leakage Simulation and Fault Diagnosis of Diesel Engine S. Li, L.H. Guo, D.H. Wang and H.Q. Yuan	620
Research on Relationship of Polarization and Rayleigh Backscatter in Bidirectional Fiber Communication Systems Y.H. Wang, G. Wang and J. Liu	625
Concentration Measuring Method in PM2.5 Monitoring Scheme D.N. Li	631
Reflection Property of the Two-Dimensional High Impedance Surface S.L. Wang, X.B. Yang and Y.N. Liu	635
Distributed Optical Fiber in High RCC Arch Dam Project D.S. Cai, H. Tang and Y.S. Guo	639
A Hybrid Algorithm for Electromagnetic Wave Transmission of Rough Surface of Layered Medium	
W. Tian and X.C. Ren	644
Study of Fault Diagnosis Based on Manifold Learning Y.L. He, G.B. Wang and F.Z. Xu	650
Chapter 6: Mechatronics, Controland Information Technologies	
Research for Sliminess Ratio Control System Based on High Speed On-Off Valve J.S. Gao and J. Han	657
Rollback and Compensation for an Easy Control Hydraulic Servo Joint X.H. Jin, X.B. Xiang, L. Jiang and Q.F. Miao	662
Empirical Comparative Study of Boosting and its Relatives F.J. Wu	667
Modeling and Kinematics Simulation Analyze of Conventional Suspension with Double Trailing Arms for Light Off-Road Vehicles R.L. Wang, J.Z. Zhao, G.Y. Wang, X.K. Chen and L. Li	673
Research on an Electric Power Steering System with Active Steering Ability J.W. Qiao, J.F. Xie and Z.W. Yang	679
Research on Intelligent Wheelchair Obstacle Avoidance Based on AdaBoost J. Chen, J.L. Niu and D.H. Chen	685

Design of the Temperature Control System for Tobacco Leaf Redrying Y.M. Liao	690
Research of Application Mode of Manufacturing Grid in Pervasive Environment X.L. Xie and G.Y. Cai	694
Research on CNC Milling Based on Subprograms X.H. Chen, J.J. Chen and B.C. Yan	699
Robot Visual Design with the Panorama Synthesis Function with Manufacturing Technology	705
W.M. Wang and Y.P. Yu Analysis of Machining Error in Numerical Control Milling J.J. Cui	705 710
K-Anonymity Algorithm Based on CLIQUE for Green Manufacturing Z.O. Zhao, X.J. Ye and C.P. Li	710
Development of Open CNC System of Constant Linear Speed Quenching Machine G.H. Li and C. Wu	719
Remote Control of Wireless Intelligent Home Network Based on S3C2440 in Manufacturing Engineering	
X. Chen and J. Chen Personal and Personal of Hama Cataway Passad on ZigPas Technology in Manufacturing	723
Research and Designed of Home Gateway Based on ZigBee Technology in Manufacturing Engineering L. Zhu, L. Zhang and X.C. Cui	728
Room Temperature Detection Properties of a Surface Acoustic Wave Gas Sensor with	128
Cu ²⁺ /PANI/SnO ₂ Nanocomposite Thin Film to Nitric Oxide C.Y. Shen, H.M. Huang, S.H. Wang and Y.C. Chiu	732
Study of Fiber Bragg Grating Sensor in Dam Safety Monitoring Y.X. Luo	736
The Design of Two Pendulums Spherical Robot S.J. Ma	741
Cycle Bases Structure of out Planar Graphs on the Projective Plane in Mechanics Engineering	
M. Xu Design of Sustainable Energy Supply for Mechanical Exoskeleton Based on Fuel Cell	745
S.J. Ma	749
Design of Carbon Monoxide Monitor System Based on Lonworks Technology A.X. Zha	753
New Portable Chain Safety Protection Device G.C. Song and Z. Xin	757
Control and Regulation of Following Pressure Regulating Device in Offset Press J.Z. Guo, T.T. Cai and S.Y. Zhao	762
Design of Optical Fiber MEMS Displacement Sensor X.L. Li, J.G. Wang and Y.M. Wu	766
Large-Scale Data Classification Based on Ball Vector Machine M.J. Zheng, G.J. Cheng and F. Zhao	771
Application of PLC Technology in the Control System of Plate Shearing Machine L.P. Liu	777
Design of Universal Control System Development Platform for Small and Medium-Sized Packaging Machinery and Equipment Y.J. Tang and W.Q. Luo	782
Modeling and Simulation of Sensorless Control of BLDC Motor Based on Submersible	
Pump Z.K. Zhang	786
Research and Implementation of Improved Real-Time Crawler Modeling X.L. Zuo, W.B. Wang, Y. Wang and W.L. Zuo	791
Analysis of Platen Die-Cutting Mechanism Based on the Axiomatic Design Theory X.D. Shi, Y. Li and H.D. Li	796
Parametric Modeling Method For Globoidal Indexing Cam Z.H. Ge. W. Huang, Z.P. Ma and Y. Bie	800

An Intelligent Modeling Method for Welding Deviation of Rotating Arc NGW W.H. Li, Q. Li, F. Yang, D.D. Sun and J.Y. Wang	805
Digitized Decision-Making System Research for Warehouse Planning Based on CAD H. Yao and Y. Cao	810
Chapter 7: Environment Engineering	
Research of Vehicle Emissions Based on Catalyst Heating Function S.F. Jia	817
Research on Comfort Performance of Green Building and Conventional Building $N.\ Li$	822
Highway Landscaping and Irrigation Systems of the Semiarid Area Y.Y. Qian and Z.H. Song	826
Influence Mechanism of Complex Admixtures on Chloride Diffusion Coefficient of C50 Self-Compacting Concrete for Marine Environment P.P. Li, Z.H. Fan and J.B. Xiong	830
Research on Cooperation Mechanism of Multiple Expert Systems for Oil-Gas Reservoir Protection Based on Agent L. Yang and H.D. Liao	835
Research on the New Rural Green Building Design J. Dong	840
Study on Space-Time Relationship of Tungsten and Uranium Mineralization Y.T. Zhang, B. Yu and P.K. Peng	844
Research on the Application of VR in the Model of Grading and Evaluating of Farmland Based on GIS	-
Q.J. Sun and J.Z. Zhou Research on Urban Green Roof Technology	849
Y. Wang and Y. Chen Identification and Biological Characteristics of Strawberry Root Rot Pathogen	853
W.Z. Fan	857
Study on the Plant Tissue Culture of Dormant Bud of Cloth Hebron F. Ye and D.F. Jian	862
Study on <i>Zostera marina</i> L. Seed Germination Ecological Characteristics in Variable Environmental Y.Z. Tang, B.C. Du and H. Zhou	866
Even and Odd Carbon Predominance Coexisting N-Alkanes in Paleogene Dark Shale in	800
Jinhu Sag of Subei Basin N. Song, M.J. Li and J.C. Zhang	871
Study of Uptake and Accumulation Characteristic of U and Cd Combined Stress for Wheat Y. Zhang and D. Wang	876
Study of Gold Mine Exploration and Metallogenic Regularities Y.P. Wang	881
Laboratory Simulation Study of Photo-Degradation Process of Fenvalerate in Aqueous Solution	
Y.R. Liang, Y.Y. Wen, X.Y. Hong, Z.B. Gong and W.Q. Li	886
Study on Garden Landscaping Engineering Based on Anti-Season Planting Technology Q.P. Dai and T.Z. Lu	893
Chapter 8: Engineering Management and Product Design	
Study on Simulation of the Engine Assembly System S.F. Chai, S.J. Luo and X.L. Zhang	899
Anti-Counterfeiting Ability Analysis of Color Koch Curve in Package Printing L.J. Zhang and L. Chen	904
Research on Green Technology System of Oriented LCA Electromechanical Products C.Y. Yuan, Y.X. Yang and L.L. Chen	909

Project Portfolio Optimization Study of Project-Oriented New Energy Power Enterprise	
Engineering Analysis Y.N. Wu, M. Gao and X.Y. Li	914
Study on Collecting and Reusing Collaborative Contexts for Cross-Culture Communication	
in Engineering Z. Liu	919
Predictive-Modeling Technologies in Web Power Engineering G.L. Rong	923
Research on Multi-Level Fuzzy Evaluation for Safety of Floating Bridge in Complicated Engineering Environment Y.Z. Zhou and J.P. Wang	928
The Impact of the New Material and Technology on Modern Architectural Design and the Role of Promotion	
Y.L. Zhang and Q. Sun	934
Control of the Tender Stage for the Quality of Engineering Materials L.J. Yin	939
Flash Type Fabric Lit Modern Fashion Design with Active Materials M.L. Tian	944
Study on Transmiting Path of Financial Risk in Manufacturing Supply Chain L.H. Fan and G.H. Shi	950
Study of Impact of Material on Three-Dimensional Design X. Jiang	955
Study on Bionic Design Based on Aesthetical Form of DNA Curve X.Y. Chen and W.H. Qi	958
Study of Integrity Systems Engineering F.L. Fang, C.L. Zhang and X. Li	963
Research on Ceramic Art Design Based on Rhetorical Devices F.B. Yu and Y. Gao	968
Research on Derivative Products Design of Pottery and Cartoon M. Fang and F. Zhou	972
Profit Optimization of Steel Shot Blasting Processes V.N. Pi, P.H. Thai and T.Q. Hung	976
Cost Optimization of External Cylindrical Grinding V.N. Pi, P.Q. The, V.H. Khiem and N.N. Huong	982
SIPM: Stock Index Prediction Model for Engineering Management Y.Y. Chen, L.X. Shuo and Z.X. Zhang	990
Al Transmittance Estimator for Multi-Layer Coating TP Film Y.J. Chen, J.C. Chien, C.Y. Chang, S.M.T. Wang, Y.C. Chiang and R.C. Hwang	996
Quality Control Measures of the 400-Meter Standard Runway Plastic Surface L.J. Yin	1001