

Advances in Manufacturing Science and Engineering V

Part 5

Edited by
Jingtao Han, Zhengyi Jiang and Xianghua Liu



TRANS TECH PUBLICATIONS

Advances in Manufacturing Science and Engineering V

PART 5

Selected, peer reviewed papers from the
5th International Conference on
Manufacturing Science and Engineering
(ICMSE 2014),
April 19-20, 2014, Shanghai, China

Edited by

Jingtao Han, Zhengyi Jiang and Xianghua Liu



Copyright © 2014 Trans Tech Publications Ltd, Switzerland

All rights reserved. No part of the contents of this publication may be reproduced or transmitted in any form or by any means without the written permission of the publisher.

Trans Tech Publications Ltd
Kreuzstrasse 10
CH-8635 Dürnten-Zürich
Switzerland
<http://www.ttp.net>

Volumes 945-949 of
Advanced Materials Research *5-part-set*
ISSN print 1022-6680
ISSN cd 1022-6680
ISSN web 1662-8985

Full text available online at <http://www.scientific.net>

Distributed worldwide by

Trans Tech Publications Ltd
Kreuzstrasse 10
CH-8635 Dürnten-Zürich
Switzerland

Fax: +41 (44) 922 10 33
e-mail: sales@ttp.net

and in the Americas by

Trans Tech Publications Inc.
PO Box 699, May Street
Enfield, NH 03748
USA

Phone: +1 (603) 632-7377
Fax: +1 (603) 632-5611
e-mail: sales-usa@ttp.net

printed in Germany

Advances in Manufacturing Science and Engineering V

PART 5

Edited by
Jingtao Han
Zhengyi Jiang
Xianghua Liu

Preface

The International Conference on Manufacturing Science and Engineering is the premier forum for the presentation of new advances and research results in the fields of Manufacturing Science and Engineering. The conference brings together leading researchers, engineers and scientists in the domain of interest from around the world. The 1st ICMSE was held in Zhuhai, 2009, the 2nd in Guilin, 2011, the 3rd in Xiamen, 2012, and the 4th in Dalian, 2013. Following the style of the previous four successful congresses, the 5th International Conference on Manufacturing Science and Engineering was held in Shanghai, China, 19-20 April 2014. The program was designed to advance manufacturing technologies to the next generation through discussion of the most recent advances and future perspectives, and to engage the worldwide community in a collective effort to solve problems in manufacturing. Delegates from more than 30 countries or districts attended those conferences.

The present volumes provide up-to-date, comprehensive and worldwide state-of-the art knowledge of the manufacturing science and engineering, including: Computer Aided Design and Engineering, Mechanical Design, Innovative Design Methodology and Product Design, Optimization in Design Processes, Green Design and Green Manufacturing Technology, Kinematic and Dynamic Analysis of Machines and Mechanisms, Analysis and Control of Vibration and Noise, Design and Research of Mechanical Transmission, Fluid Mechanics and Fluid Engineering, Reliability and Fault Diagnosis in Mechanical Engineering and Manufacturing, Mechanical Structural Strength and Reliability, Inspection and Control the Quality of Manufacturing Process, Mechatronics and Robotics, Advanced CNC Technology and Equipment, Embedded Systems, Technologies of Machine Vision and Image Processing, Sensors and Technologies of Measurements, Electronics Technology and Communication, Computational Mathematics and Algorithms of Data Processing and Data Mining, Monitoring, Control Systems and Intelligent Systems, Energy and Power Engineering, Manufacturing Management and Engineering Management, Logistics and Supply Chain, Traffic and Transportation Systems, Applied Information Technologies and Knowledge Processing, Environmental Protection and Environmental Engineering, Advanced Technologies in Area of Education, etc. All papers included in those volumes have already passed the strict peer-reviewing by 2-5 expert referees and been accepted for publication. We hope that those volumes will not only provide the readers a broad overview of the latest advances but also provide the researchers a valuable summary and reference in this field.

The organization of ICMSE2014 and the publication of those volumes were made possible thanks to the tireless dedication of many people. We would like to express our sincere thanks to the session organizers, session chairs, reviewers, presenters, exhibitors and congress attendees for their efforts and enthusiastic participation in this congress.

The Organizing Committee of ICMSE 2014

The 5th International Conference on
Manufacturing Science and Engineering
(ICMSE 2014)

Conference Organization

Chairman

Prof. Jingtao Han, University of Science and Technology Beijing

Co-Chairmen

Prof. Xianghua Liu, Northeastern University, China

Prof. Zhengyi Jiang, University of Wollongong, AU

Technical and Organizing Committee

Prof. Pinqiang Dai, Fujian University of Technology, China

Prof. Wenzhe Chen, Fujian University of Technology, China

Prof. Dingning Chen, Fujian University of Technology, China

Prof. Fei Gao, Dalian Jiaotong University, China

Prof. Tianlong Gu, Guilin University of Electronic Technology, China

Prof. Jianbin Luo, Tsinghua University, China

Prof. Xipeng Xu, Huaqiao University, China

Prof. Xingjun Liu, Xiamen University, China

Prof. Qiang Li, Fuzhou University, China

Prof. Qing Liu, Chongqing University, China

Prof. Shandong Tu, East China University of Science and Technology, China

Prof. Ruxu Du, Chinese University of Hong Kong, HK

Prof. Li Cheng, Hong Kong Polytechnic University, HK

Prof. Kai Tang, Hong Kong University of Science and Technology, HK

Prof. Jun Sun, Xi'an Jiaotong University, China

Prof. Han Huang, The University of Queensland, Australia

Prof. Pinqiang Dai, Fujian University of Technology, China

Prof. Wenzhe Chen, Fujian University of Technology, China

Prof. Dingning Chen, Fujian University of Technology, China

Prof. Fei Gao, Dalian Jiaotong University, China

Prof. Tianlong Gu, Guilin University of Electronic Technology, China

Prof. Xianghua Liu, Northeastern University, China

Prof. Jingtao Han, University of Sci. and Tech. Beijing, China

Prof. Kaiming Wu, Wuhan University of Science and Technology

Prof. Zhengyi Jiang, University of Wollongong, AU

Prof. AKM Nurul Amin, International Islamic University, Malaysia

Prof. Carlos Caceres, The University of Queensland, Australia

Dr. Chunsheng Lu, Curtin University of Technology, Australia

Prof. Lin He, Guizhou University, China

Prof. Jun Wang, Northeastern University, China

Prof. Qiang Wang, University of Jinan, China

Prof. Shao Hui Yin, Hunan University, China

Prof. Wenlei Sun, Xinjiang University, China

Prof. Jinglong Bu, Hebei United University, China

Prof. Xiaoming Jia, Hebei United University, China

Prof. Jianmin Zeng, Guangxi University, China

Prof. Daoguo Yang, Guilin University of Electronic Technology, China

Prof. Huarui Xu, Guilin University of Electronic Technology, China

Prof. Yuan Gao, Guilin University of Electronic Technology, China

Prof. Yun-Hae Kim, Korea Maritime University, Korea

Prof. Junyou Shi, Qingdao University of Science & Technology, China

Prof. Yin Biao Guo, Xiamen University, China

Prof. Ming Dong, Shanghai Jiao Tong University, China

Prof. Wenbo Du, Beijing University of Technology, China

Prof. Hongzhen Guo, Northwestern Polytechnical University, China

Prof. Wenji Xu, Dalian University of Technology, China

Prof. Shiming Ji, Zhejiang University of Technology, China

Dr. Dongbin Wei, University of Wollongong, Australia

Prof. Geun Jo Han, Dong-A University, Korea

Prof. Shanqing Li, Research Institute, Baosteel, China

Dr. Gui Wang, The University of Queensland, Australia

Prof. Jong Kook Lee, Chosun University, Korea

Prof. Ken-ichi Manabe, Tokyo Metropolitan University, Japan

Prof. Jeng-Haur Horng, National Formosa University, Taiwan

Prof. Jianzhong Zhou, Jiangsu University, China

Prof. Xiaoqin Zhou, Jilin University, China

Prof. Wenjun Meng, Taiyuan University of Science and Technology, China

Prof. Haoran Geng, University of Jinan, China

Prof. Shuguang Gong, Xiangtan University, China

Prof. Yijian Huang, Huaqiao University, China

Prof. Changhe Li, Qingdao Technological University, China

Prof. Cheng Li, Zhengzhou University, China

Prof. Jialu Li, Tianjin Polytechnic University, China

Prof. Zhiyi Liu, Central South University, China

Prof. Yongcheng Lin, Central South University, China

Prof. Xiaoping Liao, Guangxi University, China

Prof. Deping Liu, Zhengzhou University, China

Prof. Jia-Horng Lin, Feng Chia University, Taiwan

Prof. Kyung-Man Moon, Korea Maritime University, Korea

Dr. Mark Fong, Hong Kong Industrial Technology Research Centre

Prof. P. S. Pa, National Taipei University of Education, Taiwan

Prof. Sagar Kamarthi, Northeastern University, USA

Prof. Meihong Liu, Kunming University of Science and Technology, China

Prof. Dehong Lu, Kunming University of Science and Technology, China

Prof. Yongjin Chen, KunMing University of Science and Technology., China

Prof. Shaojian Ma, Guangxi University, China

Prof. Qingsen Meng, Taiyuan University of technology, China

Prof. Furen Xiao, Yanshan University, China

Prof. Kailin Pan, Guilin University of Electronic Technology, China

Prof. Jingang Qi, Liaoning University Of Technology, China

Prof. Pengcheng Wang, Inner Mongol University of Technology, China

Prof. Shoujun Wang, Tianjin University of Technology, China

Prof. Shahrum Abdullah, University Kebangsaan Malaysia, Malaysia

Prof. Toshio Haga, Osaka Institute of Technology, Japan

Prof. Walid Mahmoud Shewakh, Beni Suef University, Egypt

Dr. Yuentong Gu, Queensland University of Technology, Australia

Prof. Yu-Shiang Wu, China University of Sci. and Tech., Taiwan

Prof. Jun Xiao, Wuhan University of Technology, China

Prof. Ligang Yao, Fuzhou University, China

Prof. Zhaohui Zhang, Beijing Jiaotong University, China

Prof. Liwen Zhang, Dalian University of Technology, China

Prof. Xiaoping Zhou, Hubei University Of Technology, China

Prof. Jian Gao, Guangdong University of Technology, China

Prof. Changsheng Li, Northeastern University, China

Prof. Xiaoming Sang, Hebei United University, China

Prof. Ping Zou, Northeastern University, China

Prof. Zhihai Han, Xi'an Jiao Tong University, China

Prof. Olaf Diegel, Auckland University of Technology, NTZ

Table of Contents

Preface	v
Conference Organization	vi

PART 1

Chapter 1: Computer Aided Design and Engineering

Finite Element and Modal Analysis for Connecting Rod Used in Piston Type Air Compressor X.X. Liu and M. Chen.....	3
Parameterized Drawing Design of Drum Used in a Transformer Elevated Seat C.H. Fu.....	7
The Modular Design of the Valve Based on Solidworks Y. Xu.....	11
Finite Element Analysis of Coronary Sent with the Presence of Plaque and Vessel by Balloon Expansion W.Y. Yu, J.G. Wang and Z.J. Qin.....	16
Research on Side Detector by the Finite Element Modeling X.H. Zhao, C.L. Meng, Y. Li and T. Liang	21
Cooperation Design of Target Area for ICF Facility Based on Top-Down Mode Y.L. Xu, M.Z. Zhu, G. Chen, W.K. Wu, X.J. Chen, Z. Huang, M.C. Wang, X.H. Que and B.X. Wang	25
Quality Evaluation for Model Based Definition of Aerospace Products K. Mi, Y. Hu and C. Yin.....	30
A Numerical Study on Pedestrian Kinematics and Injury Parameters in Bus Collisions S.J. Zhao, L. Li, F. Wang and J.K. Yang	35
An Optimization Design of Knee Airbag for Driver Protection from Inter-City Coach Frontal Impact H.Y. Wang, J.K. Yang, X.Q. Jiang and L. Li	40
FEM Analysis of Helicopter Gondola for Live Working K. Liu, F. Peng, M. Jiang and D. Ni.....	44
Finite Element Analysis of Spontaneous Burst of PV Modules during Encapsulation Y. Zuo, Z. Zhang and T. Wang.....	48
Full Vehicle Handling Prediction and Correlation X.L. Zhang and R. Guo.....	53
Modal Analysis of School Bus Body Frame Z.W. Tian, Y.G. Wei, H.J. Si, X.M. Mei and Y. Kuang.....	61
Modeling and Simulation of Computerized Glove Machine's Knitting Element Based on SolidWorks Y. Fang, J.B. Liu, G.Q. Wang and F.T. Xia.....	66
Study on Modular Design of Trimming Die Structure for Automotive Panels Y.L. Wang and G.Y. Wang.....	73
The 3D Modeling Design of Cutting Machine Based on Solidworks J.J. Wang and X.J. Wang	77

The Development and Application of Grab Design System Based on Solidworks and CBR Y.T. Sun, L.D. Zhang and X.R. Qin	81
The Study on Dynamic Modeling of Complex Mechanism Based on Multi Software Collaboration C.L. Ma, F. Li, Y.B. Feng and X.G. Yao	87
Analysis and Simulation of Virtual Dense Storage System Y.N. Xue and M.D. Shen	91
Application of Finite Element Analysis Software MSC.Marc in Material Tests Q.L. Sun, Z.R. Liu and L. Yang	95
Design and Modeling of a New Reliable Handcuff Ring J. Zhang, C.R. Liu and H. Liu	99
Modal Analysis of Portable Multifunctional Scooter Based on Solidworks Z.D. Huang, S. Liu, C.L. Wang, X.B. Qi, Z.Q. Yang and Q.Y. Lang	103
Position Tolerance Process Capability Prediction under Maximum Material Condition S. Zhang, J.G. Gao, H. Wang and X.Q. Zhang	107
Algorithm for Tool Path Offsetting Based on NURBS Surface Y. Yue	111
Numerical Simulation on Controlling Factor of Energy Distribution in Coal Bump H.T. Li, C. Jiang and J.X. Liu	115
Simulation Analysis and Structure Optimum Design of the High Speed Conveying Manipulator Based on ADAMS F.W. Xue and J.P. Zhou	121
3D Machining Process Planning Based on Machining Feature Recognition Technique C. Liang, X. Zhang and Q. Zhang	127
Finite Element Analysis of Contact Stress for Herringbone Gear K. Li	137
Kinematic Simulation of Serial Mechanism Based on ADAMS X.Y. Qi, C.X. Pan, G.Q. Chen and X. Li	142
Optimization of the Rotor Chuck Structure Based on Finite Element Analysis X.H. Guo and X.L. Chen	147
Customized Saddle Design Method Based on Cubic B-Spline Surface Q.J. Yang, S.X. Zheng and J. Li	151
Effects of Cont Rail Joint Type on Bus Rollover Crashworthiness H.C. Hong and H.W. Huang	156
Finite Element Analysis of Worm Auger in Meat Grinder S.L. Li and J. Lu	162
Finite Element Analysis and Optimization for the Structure of NC Forming Machine L.M. Liu, Z.D. Shan and F. Liu	166
Mechanical Characteristics Analysis and Design Optimization of the Derrick L.Y. Song, J.W. Wang, P.C. Dong and T.L. Zhuang	174
3D Magnetic Field and Temperature Rise Analysis of Dry-Type Transformer Based on Finite Element Method H. Xu and Z.D. Yin	181
The 3D Finite Element Analysis of Magnetic Controlled Reactor H. Xu, Z.D. Yin and B. Wang	185
Finite Element Analysis of Hydraulic Clipping Machine Shear Platform Based on ANSYS H.L. Wang, Y.H. Sun, M.B. Li, G. Lin, Y.Q. Feng, S.L. Wu, C.H. Huang and J. Chen	190
The Simulation and Design of a Kind of Fitness Ball Testing Machine B. Tong, Y.C. Yin and L. Wu	194

The Numerical Simulation of the Lateral Inhomogeneous Deformation of the Permafrost Subgrade	
Y.S. Fan, X.S. Mao, Q.M. Meng and B.B. Luo	198
The Virtual Assembly Simulation and Optimization Design on Single Screw Pump of Offshore Petroleum Well Cementing LADS Device	
Z.X. Wang.....	203
Research of Armored Anti-Riot Vehicles Repair Based on Virtual Maintenance Technology	
R.J. Zhan, C.Z. Ma and S. Wang	209
Research on Measuring Key Errors of Plane-Generated Enveloping Hourglass Worm	
H. Lu and Z. Liu.....	214
Study on the Reconstruction and Microscopic Contact of Engineering Surfaces	
Q.L. Wang, P.L. Li, W. Wang and X.W. Liu	219
Decoding Algorithm of Circular-Pipes Packing in Multi-Pipe Intersecting Structures	
S.Y. Huang, L. Xu and Z.Z. Ye	223
Optimization Design of Oil-Water Separator Based on Fuzzy Synthetic Evaluation	
Y.D. Zhang and Y. Liu.....	231
Simulation Analysis of Adjustable Movable Blade Axial Flow Fan	
A.H. Zhu	236
Spectrum Analysis of Noise in Low Head Francis Turbine	
L. Lu, L.D. Zhang and X.B. Liu	242
Implementation about Virtual Experiment for Development of Local Shockwave	
X.W. Liu, K. Luo, Y.M. Yang, L.M. Song and J. Jin	246

Chapter 2: Mechanical Design

Research on a New Faucet with the Function of Depressurization and Throttling	
M.J. Tian, Y.H. Guo, Y.Q. Li and H.H. Guo	253
The Main Cleaning System Design of Garbage Sweeper	
C. Xue and Y. Hu.....	257
The RDC Clamped Circuit Research on the High-Speed Flat Sewing Machine	
Y.S. Hu, A. Gao and D.J. Mu	261
Design of Household Multi-Function Vacuum Cleaner	
H.Y. Jin and Z.W. Zhu.....	266
Experimental Investigation into a New Melt-Blowing Die for Dual Rectangular Jets	
Y.D. Wang and X.H. Wang	270
A Study on the Supporting Plate of the Steaming Bucket	
L. Chen, Z.G. Sun, Y.C. Liu, C.N. Yang and W.Q. Huang	274
Design of a Leveling Device	
Q.Y. Lv, Y.S. Mei, Y. Sun and K. Liu.....	278
Design of Low-Rise Escape System	
Y.Q. Feng, C.W. Sun, C. Yang, X.X. Cai, Y.L. Chen and L.Z. Zhang	282
Research on Cotton Stalk Harvester Based on Double Roller Type	
Z.G. Pan	286
The Design and Optimization of Boom of Tunnel Multi-Purpose Installing Truck	
Y. Cheng and Y.Q. Tan.....	290
Design of Maize Picker Device	
X.R. Lü and X.L. Lü	294
Research of Multifunctional Automatic Ground Cutting Machine	
H. Yang	298

Graphic Establishment of Crank-Rocker Mechanism Design Based on Optimum Transmission Angle of Optimization Method	
D.Y. Huang and X.L. Wang.....	301
Mechanics Analysis and Optimized Design of Aircraft Skin Pass Damage Repair	
T.J. Dong, J. Chen and H.P. Ding.....	306
New Low-Speed Motor with Interior Pushrod Harmonic Transmission Device - Theoretical Profile Deduction and Kinematics Analysis	
X.L. Yang, J.F. Liu, H.S. Liu, L. Lin and M.N. Si.....	310
Dynamic Matching Analysis of Engine and Torque Converter in Tracked Coach Car	
W. Sun, B. Ma, J. Ma and J.Y. Wu.....	314
Modeling of Sewing Machine with Independent Rotation Axe	
Z.W. Shi and W.H. Sun.....	319
A New Process for the Tubular Shipload	
Y. Lv, Z.R. Song, F.Y. Yang, C. Gong, R.P. Wang and Z.B. Wang.....	325
Design and Research of the Air-Suction Peanut Precision Dibbler	
X.L. Lü, Z.C. Hu, H.J. Zhang and W. Wang.....	330
Technical Study on Four-Crane Joint Lifting of Large-Sized Structures	
Y. Lv, F.Y. Yang, M.W. Yang, C. Gong, J.H. Liu and F.J. Li.....	335
Heat Transfer Characteristics Analysis of Intermediate Rotating Ring in Mechanical Seal Based on COMSOL	
Z.W. Liu, L. Dong and K. Li.....	339
Analysis on Circumferential Seal Ring in Engine under Different Conditions	
Y.T. Yan, X.L. Qian, G.Y. Hu and L.S. Zheng.....	343
Design Research of Linear Motion Unit Based on Magnetic Suspension Principle	
Y.X. Zhao, M.D. Shen and X.H. Shen.....	347
Development of the Energy Recovery in Construction Machinery	
J. Gong, Q.H. He, D.Q. Zhang, Y.M. Zhao, C.S. Liu and Z.Y. Tang.....	351
Research and Design on Reciprocating Oilless Air Compressors	
Y.F. Zhu.....	358

Chapter 3: Innovative Design Methodology and Product Design

Gannan Native Products Bamboo Packaging Design Research	
Y. Zhang, J.F. Huang and J.X. Cheng.....	365
Innovative Design for Autogenous Medium Cyclone Based on TRIZ	
Y.J. Chen.....	370
Innovative Methods of Wine Packing Based on TRIZ	
K. Qiu.....	374
The Research on the Effectiveness of Brand Triangle Model for Product Life Cycle Design	
X.B. Liu and W. Li.....	378
A Study on Full Life Cycle Based Product Package Design	
S.Y. Zhang, Y. Mei and X. Han.....	384
An Analysis on the Ergonomics in the Design of Automobile Instrument Panels	
J.H. Zhang.....	388
Researches on the Flood Protection and Anti-Seismic Self-Help Bed	
J.B. Lu, H.S. Zhao and X.L. Guo.....	393
Standing Office Furniture Design Based on Human-Machine Interaction Research	
L.L. Liu and L. Zhang.....	397

Application of Integrated Product Development Model Oriented to R&D Projects of the Brazilian Electricity Sector	
J.A. Pereira, O. Canciglieri Junior, A.E. Lazzaretti and P. Moreira de Souza	401
Innovation Development Process for Dog with Two Disabled Hind Legs Wheelchair	
N. Chansangsi and N. Thawesaengskulthai	410
A Semantic Annotation Framework to Assist the Knowledge Interoperability along a Product Life Cycle	
Y.X. Liao, M. Lezoche, E. Rocha Loures, H. Panetto and N. Boudjlida	424
A Tentative Exploration on the Design of Articles for Daily Use and the Life Wisdom of "Putting Down"	
L.S. Guo	430
Integration Definition Methods to Support Product Design for Assistive Technology	
M.L.M. Okumura, O. Canciglieri Junior, T.M. de Souza and R.I.M. Young	434
The Research of Bamboo Design Based on Sustainable Design Concept	
L.Y. Huang and Z. Wang	438
Study on Prototype of Upper Apparel for Young Man Based on Human Anthropometrics	
L.N. Cui	442
Ontology Enabling Information and Knowledge Modeling for Product Design	
A.M. Li, F.R. Kou, Q.Y. Niu and H.B. Tian	446
Mapping the Open Innovation Ecosystem: An Analysis of the Technical and Strategic Level	
M.A. Nerone, O. Canciglieri Junior, M.T.A. Steiner and R.I.M. Young	450
Research on Design of Multi-Bar Raschel Lace	
J.Z. Yao, G.M. Jiang, Y. Zhang and Y. Zhang	461
The Application of Paper Materials in Children Furniture	
W.D. Bai, J. Xu and J.Z. Zhang	465

Chapter 4: Optimization in Design Processes

Multi-Objective Optimization of Internal Combustion Engine Valve Springs Based on NSGA-II	
Y.J. Wang and G. Zhang	473
A Multi-Objective Quality Optimization System for Injection Molding Process Parameters	
W.C. Chen, Y.F. Lin and P.H. Liou	478
Brake Parameter Optimization Design Based on MOEA/D	
Y.J. Zhang, Y. Zhang, X.Y. Wan and X.D. Zheng	484
Development of Naval Ship Synthesis Model in Concept Design	
Y.H. Hou, J.N. Zhang and C.B. Zhen	490
An Improved Real Time AR Method for Double Vessel Motion Prediction	
Q. Yang, C. Wu, J. Zou and H.S. Chen	494
Structure Analysis and Optimization of Hydraulic Tool Turret Cabinet of CNC Lathe	
L.P. Liu, Y.J. Yan, Y. Peng, H.D. Li and Q.Z. Dong	498
The Research and Application on Optimization Design of Lifting Mechanism - The Hydraulic Cylinder Structure Design	
L. Xie and Q. Sun	503
Research on Remaining Driving Range Estimation of Electric Vehicle Based on Dynamic Working Condition	
C.Q. Du, G. Du, K.C. Tan and Y.S. Liu	509

Chapter 5: Green Design and Green Manufacturing Technology

Multiple Views Description and Operation Mechanism to Operation Mode of Green Manufacturing System	
X.K. Tian and Y.Q. Wang.....	519
Application of Green Manufacturing in Automobile Enterprises	
L.L. Wang, Y. Guo and T. Zhang	523
Multi-Functional Product Design Based on Green Design Concept	
J.X. Cheng.....	527
Research and Exploration on Green Design of Household Electrical Appliances	
A.H. Guo.....	531
Research on Suitability Ecological Updating Technology System of Traditional Wooden Residence	
Z. Li and L. Shi	535

Chapter 6: Kinematic and Dynamic Analysis of Machines and Mechanisms

Engineering Kinematic Theory of Ground Contact Pressure in the Annex to the Hydraulic Port Facilities	
D. Tyu and K. Vladimir	541
Fewer Degrees of Freedom Dynamic Analysis of Mechanical Excavator Working Device	
G.Y. Lin, X.K. Zhou, Y. Zhou and Y.M. Zhang.....	549
Stress Attenuation Mechanism of Foam Core Sandwich Panels Subjected to Close-Range Blast Loading	
Z.Q. Fan, H.H. Ma, Z.W. Shen and M.J. Lin.....	561
Research on the Cornering Characteristics of Three-Axle Vehicle	
B. Xu, S.M. Cui and X.Y. Wu	567
Study of the Relationship between the Vibration Response and Milling Instability	
S.L. Nong and S.H. Gao.....	571
Analysis of Vehicle Tire Impact Force Based on Collision Model	
W.J. Ma, X. Guan and P.P. Lu	576
Optimization Analysis on Gyroscope's Three Dimensions Complicated Motion and Lash-Force	
W.L. Yang and X.H. Lu.....	581
Expansion of Baker Transformation and its Dynamics Characteristics	
L.H. Ma, J.K. Li, W.M. Shen and J. Qu.....	587
Dynamic Characteristic Analysis of Irregularity under Turnout by Vehicle-Turnout Rigid-Flexible Coupling Model	
M. Chen, Y.Y. Luo and B. Zhang.....	591
Optimization Design of Vibratory Jaw Crusher with Double Cavities Based on MATLAB	
J.C. Zhang and L.C. Wang.....	596
Dynamic Response Analysis of Wind Turbine with Tuned Mass Damper under Typhoon Conditions	
Q.Y. Zhang and H. Zhou.....	600
Solving Nonlinear Optimization Problems of Steering Trapezoid Mechanism Based on an IPSO	
L. Liu, P. Zhou, J. Luo and Z. Pi.....	607
Synthesis of Timing Diagram of Mechanisms of Machine	
A. Jomartov.....	614

Motion Simulation Analysis and Load Analysis of the Moving Beam System in the Walking Beam	
F.H. Wang and Y.C. Zhu	619
Analysis and Control the Influence Factors on the Dynamic Load Coefficient of the Crawler Crane Working Mechanism	
G.Y. Lin, S.Q. Cao and C.J. Guo	626
Research on Optimal Excavating Trajectory of Large Mining Shovel	
G.Y. Lin, H.Z. Han, J. Zhao and A.F. Li	633
Research of Flow-Induced Vibration of Flexible Plate Based on Fluid-Solid Interaction Method	
R.Q. Xi, X.D. Jiang and Y.S. He	642
Folding-Boom Lorry Crane Dynamic Modeling and Motion Control	
W.Z. Du, F. Lu and T. Liu	646
Analysis and Optimization of Dismantling Machine Shear Head Based on ANSYS Workbench	
W.P. Du, Y.J. Zhang, C.Q. Zhou, A.H. Zhang, J. Yu and P. Liao	653
Simulation of Motion Trajectory of Parachute Inflation Process	
J.L. Tian, Y. He, L. Chen and B. Wang	658
Research on Parameter Optimization Method of an Air Vehicle Gliding Trajectory	
F.P. Wang, Y. Xu and C.Y. Li	662
Kinematics Simulation Based on ADAMS Belt Conveyor Rollers	
J. Yang and X.J. Wang	666
Design and Motion Simulation of the Clamping Mechanism of Micro-Structure Injection Molding Machine	
B.G. Chou, H.Z. Cai, G. Zhou, Y.J. Zhang and J. Zhuang	670
Modal and Strength Analysis of Crankshaft in Piston Compressor	
Z.J. Sun and J.T. Dai	676
Strength Analysis of Crankshaft Interfaces Considering Contact Problem	
L.H. Ouyang, X.T. Deng and Z.F. Yue	680
Kinematic Analysis of Swiss Lever Escapement	
J. Pan, Y. Fu and R.X. Du	684
Analysis of Kinematics and Dynamics of Crank-Rocker Mechanism	
H. Wang, R.R. Zhang, S.L. Xiao and P. Leisner	690
Structure Strength Analysis for Fork Joint of the Universal Coupling Based on FEM	
Y. Xing and P.F. Yao	696

Chapter 7: Analysis and Control of Vibration and Noise

Experiment for Vibration Suppression Based on Particle Damping for Gear Transmission	
W.Q. Xiao and W. Li	703
On the Bifurcation of Periodic Motion of Rotor Ball Bearing System Considering Five Degrees of Freedom	
L. Cui and Q.S. Wang	707
Residential Building Sound Pollution and Control Measures	
N. Xu, C. Zhang and L. Ma	711
Sound Source Identification and Acoustic Contribution Analysis Using Nearfield Acoustic Holography	
J.H. Deng, J.H. Dong and G.D. Meng	717
Modal Test for Response Amplitude Operator of a Deepwater Semi-Submersible Platform	
L.P. Sun, S.L. Cai and Z. Kang	725
A Study on Effects of Gear Backlash on Differential Vibration	
J.L. Xu, P. Wei, F.Y. Huang and H.J. Wang	730