

Table of Contents

Committees and Preface

Full-Field Modelling of Crack Tip Shielding via the ‘Plastic Inclusion’ Concept M.N. James, Y.W. Lu, C.J. Christopher and E.A. Patterson	1
Design for Lifecycle Cost and Preventive Maintenance Using Time-Dependent Reliability A. Singh, Z.P. Mourelatos and J. Li	10
Fatigue Reliability Analysis Including Super Long Life Regime Y.X. Zhao	17
Distribution of Fatigue Lives for the Diecast Magnesium Alloy S. Ishihara, S. Yoshifuji, T. Namito and T. Goshima	27
Crack Propagation of CCT Foam Specimen under Impact Fatigue J.U. Cho, L.Y. Xie, C.D. Cho and S.K. Lee	32
A Mixed-Effect Multi-Failure-Mechanism Fatigue Reliability Model L.Y. Xie, W.Q. Lin and F. Lu	37
The Fracture and Fatigue Behaviour of Nano-Modified SAN K.C. Zuo, B. Blackman, J.G. Williams and H. Steininger	43
Finite Element Analysis of a Compressor Disk W.X. Qian, L.Y. Xie and X.W. Yin	49
Experimental Observations of Dominant Effective Short Fatigue Crack Behavior for Railway LZ50 Axle Steel B. Yang and Y.X. Zhao	54
Scale-Induced Effects on Fatigue Properties of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames Y.X. Zhao and B. Yang	59
Bending Ratcheting Tests of Z2CND18.12 Stainless Steel J.B. Zhu, X. Chen, F. Xue and W.W. Yu	65
Deformation Analysis for Welding Assembly Processes of Automobile Panels Y. Liu, J.X. Liu, S.Y. Yan, Z.M. Wang and B. Zhang	70
Surface Rolling Effect on Effective Short Fatigue Cracks Density for Railway LZ50 Axle Steel B. Yang and Y.X. Zhao	75
Damage Modes and Strength Reliability Strategies of Railway Wheel Set Y.X. Zhao and B. Zhang	80
Mechanical and Physical Characters of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames Y.X. Zhao and B. Yang	90
Cyclic Deformation Characters and Description of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames Y.X. Zhao and B. Yang	95
Measurement on Fracture Roughness Values of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames W.D. Shao and Y.X. Zhao	100
Modeling to the Fatigue Crack Growth Rates of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames Y.X. Zhao and B. Yang	105
Measurement on Fatigue Cracking Thresholds of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames H.B. Hu and Y.X. Zhao	111
3D Visual Parametric Reliability Design System Development of Flange Based on ProEngineer X.W. Yin, W.X. Qian and L.Y. Xie	116
Fatigue Limit Measurement of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames L.Y. Yu and Y.X. Zhao	121
Anti-Ratcheting Design Software for Primary Auxiliary Pipeline in Nuclear Power Plant Z.G. Zhang, X. Chen, F. Xue and W.W. Yu	126

Ratcheting Boundary Analysis of Straight and Elbow Piping T. Liang, G. Chen, Q. Zhang and X. Chen	131
Corrosion Fatigue of Aircraft Aluminum Alloy Structure in the Coastal Environment and Improvements L.C. Huang, B. Pan, T.M. Jiang and M.J. Li	136
The Integrated Application Based on Order Moment Method and Improved Monte-Carlo Method in Mechanical Reliability Simulation Y.F. Yin and J.G. Zhang	141
Load Transfer Analysis of Cracked Bolted Joints D.Z. Yu, Y.L. Chen, Y. Gao, W.L. Liu and Z.H. Jia	147
Study on Rolling Contact Behaviors of Three Kinds of Railway Wheel Treads W.J. Wang, Q.F. Zeng, J. Guo and Q.Y. Liu	151
Life Prediction of High Temperature Welded Component by Skeletal Point Rupture Stress G.D. Zhang, Y.F. Zhao, F. Xue, Z.X. Wang and C.Y. Zhou	156
Studies on Fatigue Properties of Steel with Co-Based Alloy Hardfacing Coating H.X. Deng, H.J. Shi, S. Tsuruoka, H.C. Yu and B. Zhong	161
Thermo-Mechanical Fatigue Behavior Investigation and Fracture Analysis on Austenitic Stainless Steel of Surge Line in Nuclear Power Plant F. Xue, Z.F. Luo, W.W. Yu, Y. Liu, X. Chen and G.D. Zhang	166
Study on Dynamics Mechanics of Generation for Rail Oblique Crack G.Y. Xiong, P. Hu and G.W. Yang	171
The Safety Study on Corrosion Damage of LC4 Aluminum Alloys by Finite Element Method Z.G. Wang, S.L. Lv, C.L. Xu and W. Zhang	176
Fatigue S-N Relations of the Cast Steel for Chinese Railway Rolling Wagon Bogie Frames L. Chen, Y.X. Zhao and Y. Bing	181
Determination of the Expansion Parameters for the Combined Welding and Expanding Connection of Tube-to-Tubesheet H.F. Li, C.F. Qian and L. Wang	186
Fatigue Life Prediction of Spot-Welded Structure under Different Finite Element Models of Spot-Weld T. Zhu, S.N. Xiao, G.W. Yang and B.R. Miao	191
Numerical Simulation and Experimental Research on Fatigue Strength of the Injector Guide Pillar under Complex Loads J.G. Li, X.G. Wang and Z.L. Gao	196
Reliability Analysis of Interval Parameters Bar Structures with Affine Arithmetic G.L. Liu, J.J. Chen and Z.Q. Zhu	201
Investigation of the Hydrogen Embrittlement on the 65Mn Steel from the Nuclear Power Plant with Small Punch Method Z.X. Wang, H.J. Shi, G.D. Zhang, B.P. Qu, J. Lu and X.B. Zhao	206
Reliability Analysis Methods for Mixed Uncertainties in Structural System with Multiple Modes C.C. Zhou, Z.Z. Lu and Q. Wang	211
Acoustic Emission Analysis of Composite Laminates under Low Velocity Impact H. Chen, X.Y. Tong, X. Zheng and L.J. Yao	216
Predicting Fatigue Life of Pre-Corroded LC4 Aluminum Alloy by Artificial Neural Network C.L. Xu, S.L. Lv, Z.G. Wang and W. Zhang	221
A Study on Low-Velocity Impact Characteristics and Compression Strength after Impact of Ceramic/Resin Matrix Composites X. Zheng, X.Y. Tong, H. Chen and L.J. Yao	226
Experimental Study of the Electrical Potential Technique for Crack Monitoring of LY12-CZ Plate Specimen R.H. Cui, Y.T. He, Z.M. Yu and J.Q. Du	231
Discussion of Reliability Analysis for Aircraft Wing Box Structural System W.T. Zhao and D.Q. Zhang	236
Progressive Damage Approach to Simulating Low Velocity Impact Response of Plain Weave C/SiC Composites L.D. Chen, X.Y. Tong, X. Zheng and L.J. Yao	241

Mechanical System Design of Large Span Retractable Roof Y. Yu, Y. Xi and M.R. Li	246
Infrared Thermography and Acoustic Emission in 2D Plain Woven C/Sic Composites under Tensile-Tensile Fatigue Loading B. Li, X.Y. Tong, Z.Y. Feng and L.J. Yao	251
Validity Evaluation of AE Technique on Damage Monitoring of Different Woven C/SiC Composites under Mechanical Loading J. Zheng, L.J. Yao and X. Zheng	256
The Strength Analysis of Tower Vacuum Dryer Structural Z.J. Zhang, S.W. Zhang, B. Zhang and C.H. Xu	261
Research on Remote Data Acquisition System Reliability Simulation S. Yu, C.L. Ao and F.F. Liu	264
Modified Analytical Method for Stress Intensity Factor Calculation of Infinite MSD Plate Containing Multiple Holes J.F. Zhao, L.Y. Xie, J.Z. Liu and Q. Zhao	269
The Mechanism Design of the Upper Air Crawling Robot G.Z. Liu, Y.Z. Chen, Y. Liu and B.C. Wen	274
Fatigue Crack Growth Rate of 16mnr Steel with Effect of Stress Ratio D.H. Yin, X.G. Wang, B.X. Qiu and Z.L. Gao	278
Review of Multiaxial Fatigue Life Prediction Technology under Complex Loading L. Wang, W.Z. Li and T.Z. Sui	283
On The Fatigue Short Crack Behaviors of Directionally Solidified Superalloy DZ4 by <i>In Situ</i> SEM Observations X.F. Ma and H.J. Shi	289
Contacting Model Considerations of Interference Fit for Shaft-Hub System H.Y. Luo, C.J. Liu and K. Li	294
An Approach of Robust Reliability Design for Structure System with Multiple Failure Modes H. Lu, Y.M. Zhang and X.F. Tan	299
Optimization of Exponential Distribution Testing Period Based on Reliability Degradation Z. Li, J.C. Zhang, L.J. Yao and X.Y. Tong	304
Effect of Type-II and Type-III PMs on Operational Reliability of Buses R. Jiang and G.F. Zhang	309
A Theoretical Note on Mode I Crack Kinking and Branching Y.J. Xie, X.Z. Hu and X.H. Wang	314
Reliability Modeling for Symmetric Structure Systems Based on Copulas J.Y. Zhou, K.Z. Sun and X.L. Li	319
Research of Modern Railway Vehicle Structure Fatigue Design Method Based on Multibody Dynamic Simulation B.R. Miao, W.H. Zhang, L.M. Zhang, T. Zhu and H.T. Yin	327
Prediction of Hardenability of Gear Steel Using Stepwise Polynomial Regression and Artificial Neural Network X.H. Gao, T.Y. Deng, H.R. Wang, C.L. Qiu, K.M. Qi and P. Zhou	332
The Effect of Random Spectrum on the Fatigue Life of Hybrid Metal Matrix Composites Y.Q. Wang, H.K. Ku, G.B. Nam and J.I. Song	336
Availability Research on <i>K</i>-out-of-<i>N</i>: G Systems with Repair Time Omission Z.Y. Jia, R. Kang, L.C. Wang and N.C. Wang	342
Dynamic Model of Common Cause Failure Based on Shocks C.L. Li, D.D. Jia and Z.L. Sun	348
Reliability Analysis of Shiplift Gear Based on System-Level Load-Strength Interference Model Y. Wu, L.Y. Xie, D.C. Wang and J.Z. Gao	354
Optimizing of Turning Parameters Using Multi-Objective Genetic Algorithm R.A. Mahdavejad	359
Bifurcation of Non-Semi-Simple Zero Eigenvalues at the Critical Point of the Statical Bifurcation of Nonlinear Rotor System Y.D. Chen and C.Y. Pei	364

A Novel Variable Neighborhood Genetic Algorithm for Multi-Objective Flexible Job-Shop Scheduling Problems	
G.H. Zhang, L. Gao and Y. Shi	369
Failure Rate Analysis and Model Consisting of Four Elements for Components	
Z. Wang, L.Y. Xie, H. He and K. Guo	374
Hybrid Genetic Algorithm with Simulated Annealing Based on Best-Fit Strategy for Rectangular Packing Problem	
Y.Y. Zhou, Y.Q. Rao, C.Y. Zhang and L. Gao	379
The Application of MARS on Crashworthiness Improvement	
Y.K. Gao and F. Sun	384
Design of Double-Deck Isolation Systems	
Q. Zhao, C. Zhang and J.F. Zhao	389
Bearing Parameter Optimization of a Compressor Rotor System Based on Orthogonal Experimental Design	
H. Ma, Y.N. Teng, J.S. Dai and B.C. Wen	394
An Approach Based on Enhanced Collaborative Optimization and Kriging Approximation in Multidisciplinary Design Optimization	
M. Xiao, L. Gao, H.B. Qiu, X.Y. Shao and X.Z. Chu	399
Planning of Step-Stress Accelerated Degradation Test with Stress Optimization	
Z.Z. Ge, X.Y. Li, J.R. Zhang and T.M. Jiang	404
General Particle Swarm Optimization Algorithm for Integration of Process Planning and Scheduling	
S.T. Xu, X.Y. Li, L. Gao and Y. Sun	409
Theoretical Research and Experiment of Vibration Friction on Vibratory Compaction Experiment System	
X.P. Li, C.S. Liu, J. Huang and B.C. Wen	414
Challenges in Reliability Assessment for Electronics	
Q.C. He, W.H. Chen, J. Pan and S.J. Wang	419
Reliability Analysis of Structure with Local Sunken Plate	
W.G. An, M. Liu and W.T. Zhao	424
Nonlinear Analysis on Rigidly Attached Structure of the Luffing Jib Tower Crane	
X.X. Zhang, J.H. Zhu, C.S. Sun and X.F. Yang	429
Residual Stress Analysis in Curing Process of COG Module	
L.B. Wang, H. Gao, J. Ma and X. Chen	434
Aging Change Point of Lognormal Distribution and its Implications	
R. Jiang	439
Lifetime Prediction of Product Based on Proportional Hazards-Proportional Odds Model in Accelerated Life Testing	
T.T. Huang, T.M. Jiang and R.J. Huo	444
Failure of Flip-Chip Circuit Interconnects under High Current Density	
Y.D. Lu, X.Q. He, Y.F. En, X. Wang and Z.Q. Zhuang	449
Automobile Modeling Evaluations Based on Electrophysiology	
H. Wang, J. Wang, N.N. Zhang, G.B. Sun, H.L. Huang and H.B. Zhao	454
Development and Application of Vehicle Health Index	
R. Jiang and G.C. Shi	459
Failure Analysis and Reliability Evaluation of a Planetary Gear Box	
Y.N. Teng, F. Feng, Y.Z. Chen, L.Y. Xie and B.C. Wen	464
The Effects of One Sided Gold Finish on the Reliability of Electrical Contacts under Fretting Conditions	
Y. Lv, Y.L. Zhou and W. Kong	468
Residual Strength Degradation Model for Low-Alloy Steel in High Cycle Fatigue Load	
N. Wang, L.Y. Xie, W.L. Song and C.D. Cho	474
Study on Reliability of the Tower Crane Jib	
G.Y. Lin and W.W. Li	479
Anti-Seismic Reliability Analysis of Quayside Container Crane	
Y.L. Jin, T.X. Wu and Z.G. Li	487
Fatigue Life Reliability Analysis of Belt Conveyor Driving Drums Based on FEM	
J. Li, L. Wang and X. Wang	492

Finite Element Analysis of Sieve Box Structure in Fluidized Bed B. Li, J. Cai, X.W. Kong and Z.F. Song	497
Reliability Analysis for Crane Boom Base on Probabilistic Finite Element Method X.H. He, L.D. Ding and G.Y. Lin	502
The Dynamic Optimization Analysis of High-Speed Hybrid Thrust Bearing K. Sun, L. Wang and X.J. Zhao	507
Finite Element Analysis on Flexible Attachments of Luffing Jib Tower Crane X.X. Zhang, C.S. Sun, J.H. Zhu and X.F. Yang	512
Tolerance Design for Four-Bar Function Generating Mechanisms with Joint Clearances Using Taguchi Method X.Z. Huang, Y.M. Zhang, H. Lu, L. Tang and H. Li	517
Statistical Evaluation on Cumulative Damage Property of Aluminum Alloy Welded Joint under Multi-Stage Loading W. Li, Q. Li and P. Wang	522
Probabilistic Fatigue Property of Aluminium Alloy Welded Joint for High-Speed Train H. Zou, W. Li, Q. Li and P. Wang	527
Reliability Analysis Based on Transverse Distribution of Random Loading P. Gao and L.Y. Xie	532
Research on Mechanical Reliability Growth Model for Complete Failure Data Z.L. Sun, Y. Guo and S. Ji	536
Grey Model Based Particle Swarm Optimization Algorithm for Anticorrosion Reliability Design of Underground Pipelines Q.M. Liu and M. Dong	541
Kinematic Reliability and Sensitivity Analysis of Delta Parallel Mechanism Q. Yang, Z.L. Sun, D.L. Lei and P. Zhou	546
Research Progress on Fracture Mechanism of Mechanical Products J. Shao and C.H. Zeng	551
Study on the Control System of an Automatic Testing Equipment for Diffusion Vacuum Pumps by Fault Tree Analysis S.W. Zhang, W.S. Liang and Z.J. Zhang	556
SPN Based Reliability Analysis in the Process Industry S.Y. Bao, W.P. Wang, J.X. Zhu and Z.L. Gao	561
The Development of Reliability Modeling and Analysis Tool Based on Stochastic Petri Nets W.P. Wang, S.Y. Bao and Z.L. Gao	566
Research of Accelerated Reliability Test on Server X.J. Zhang, T.M. Jiang and D. Wang	571
Research on the Six-Dimension Knowledge Classification System and Model for Modern Product Design X.F. Ma and X.D. Dai	576
Diffuse Response Surface Methodology to Reliable Optimization of Numerical Control Milling P.P. Zhang, H. Tao and Z.D. Yin	581
Optimization of Preventive Maintenance Policies for Aging Equipments in Finite Time Horizon A.Y. Cang, F.S. Kong, Z.D. Xu and P. Liu	586
The Determine Method of Maintenance Strategy for Multi-State System Y.L. Mao, R. Kang, L. Ma and Z.H. Xu	591
Research on Spurious Trip of 1002 Safety Instruments of Petrochemical Installation with Repair Considered J.X. Zhu, X.D. Chen and S.Y. Bao	596
Estimation of Failure Probability and its Applications in Reliability Data Analysis H. Ming	601
Step-Stress Accelerated Random Vibration Life Testing F.Q. Sun, X.Y. Li, J.R. Zhang and T.M. Jiang	606
Effects of Thermal Exposure on Low Cycle Fatigue Behavior of Ti600 Titanium Alloy T. Yu, L. Wang, Y.Q. Zhao and Y. Liu	611

Life Prediction of Constant-Stress Accelerated Degradation Testing Using Time Series Method and Grey Theory	
L. Wang, X.Y. Li, T.M. Jiang and T.T. Huang	616
Modeling for Time-Variant Reliability of Mechanism	
X.J. Zhang, L.Y. Xie, Y. Wu, Y. Zhang, M.Y. Zhao and S.Z. Xu	621
The Current Status of Process Planning for Multi-Material Rapid Prototyping Fabrication	
W.D. Li, G.Q. Jin, L. Gao, C. Page and K. Popplewell	625
Fatigue Life Evaluation of Unstiffened Aluminum Panels with Multiple Site Damage	
N.X. Wu, L.Y. Xie, F. Zhao and B. Chen	630
Coupling Analysis of Heat Transfer in Finned Radiator Based on Numerical Simulation Codes ABAQUS and FLUENT	
J.S. Dong and B.Q. Gu	635
Simulation of Position Control and Flow Rate Match of Integrated Hydraulic Actuator Unit	
J.X. Liu, Y. Liu and P. Tan	640
A Hybrid Method for Determining the Dynamic Stresses of Railway Vehicle	
Z. Tang, P.B. Wu and Z. Yang	645
On the Design Approach of Double-Tubesheets	
H.J. Yu, C.F. Qian and R. Cao	650
Model and Simulation of Fluid Hydrodynamic Pressure at the Cutting Zone Considering the Surface Roughness	
C.H. Li, Y. Zhou and G.Q. Cai	655
Cargo Ride Safety Analysis of Trucks for Four Excitation Cases	
L.Q. Guo and D.F. Wang	660
Design of an Oblique Tool for the Nano Removal Process	
P.S. Pa	665
Design of a Biped Toy Robot with an Automatic Center of Gravity Shifting Mechanism	
P.S. Pa and J.B. Jou	670
Function-Oriented Design and Verification of Point-Contact Tooth Surfaces of Spiral Bevel and Hypoid Gears with the Generated Gear	
X.C. Wu and C. Li	675
Wear Life Prediction Model on 38CrMoAlA Alloy Steel	
Y.T. Yan, Z.L. Sun and F.H. Zhang	681
Shear Strength and Performance of Glass-to-Metal Brazed Joints	
X.H. Shen, C.X. Sun and L.C. Wang	686
Twice-Modeling Approach for Concurrent Process Planning without Forced Decoupling	
X.W. Song and Z.H. Hong	691
Perception of Constraints in Conceptual Design within the Automotive Industry	
S. Kaur, G. Mullineux and J. Matthews	697
Research on Vibration Test Method of the Whole NC Machine Tool	
W. Sun, B. Wang, Y.N. Teng and B.C. Wen	707
A Linear Goal Programming Model for Weight Calculation in Fuzzy AHP and its Application in Product Development	
L.J. Yan, Z.B. Li and X.C. Yang	712
Heterogeneous Knowledge Integrated Management Based on Topic Maps in Collaborative Product Development	
L.Y. Yan, Z.B. Li and X.C. Yang	717
Support Activity Flow Based Forecast Model for the Quantity of the Aircraft's Support Equipments during Design and Development Phase	
J. Wen, R. Kang, Z.Y. Jia and N.C. Wang	722
Lateral Stability Control Design for Tractor Semitrailer Based on Virtual Prototyping	
S.W. Zhou, S.Q. Zhang and G.Y. Zhao	728
Study on Semi-Active Control for Leaf Spring Suspension Based on Virtual Prototyping	
S.Q. Zhang, T.X. Zhang and S.W. Zhou	733
Finite Element Analysis on the Ability of Solder Joints to Resist Thermal Fatigue	
X.X. Yang, Y. Zhang and X.F. Shu	738
Reliability Analysis of Kinematic Accuracy of a Three Degree-of-Freedom Parallel Manipulator	
B. Li, L.Y. Xie, Y.L. Wei, Y. Wu, M.Y. Zhao and S.Z. Xu	743

A Quantitative Method on Formative Elements Optimization of Car Styling Design Z. Li and J.J. Xia	748
Analysis of Thermal Properties of Super-High Speed Hybrid Journal Bearing Based on ANSYS S.C. Xiu, S.Q. Gao and Z.L. Sun	753
Methods for Device Applications Debugging F. Zhao, L.Y. Xie and N.X. Wu	758
Development of a Surface Defect Inspection System for Cold Rolled Strip Based on Bright-Dark Filed Mode Y.L. Wei, Y.H. Yan, B. Li and J.H. Cong	762
The Development of the Sustainable Manufacturing Processes L. Ding, X.L. Qiu, G. Mullineux and J. Matthews	767
Combinatorial Synthesis and Characterization of Thermoelectric Composition-Spread ($\text{La}_{1-x}\text{Ca}_x$)VO₃ ($0 \leq x \leq 1$) Films Q.J. Wang, M. Xu and Y.B. Zhang	775
Combinatorial Pulsed Laser Deposition and Thermoelectricity of $(\text{Ca}_{1-x}\text{A}_x)_3\text{Co}_4\text{O}_9$ (A: Sr, Ba) Composition-Spread Films Q.J. Wang, M. Xu and Y.B. Zhang	780
The Research on <i>Bei Jia Zi</i> of <i>Tujia</i> Minority and its Influence on Modern Product Design L.J. Li, Z.H. Huang and W. Su	785
Product Sustainability and Realization H.X. Liu, G.Z. Cao, R.H. Tan, C.Y. Zhang and S.M. Zhang	790
Modern Product Design Platform in Distributed Resource Environment X.D. Dai and X.F. Ma	795
Product Development Process Integration Using Design Structure Matrix R.M. Zhu and D.B. Tang	800
Comprehensive Evaluation for Generalized Product Quality Based on Fuzzy Entropy Y.Z. Chen, Y. Zhao, Y.N. Teng and B.C. Wen	805
An Extended Monte Carlo Method on Simulating the Development Cost Uncertainties of Aircraft Z.D. Huang, W.B. Chang, Y.Y. Xiao and R. Liu	810
Visualized Analysis and Simulation Research on Dynamic Performance of the Whole NC Machine Tool B. Wang, W. Sun, Y. Chen, L. Tang and B.C. Wen	815
Fatigue Life Prediction of Spring Buffer in GCD-1500 Cable Drill C.G. Bu, B. Long, J.W. Li and L. Wang	820
Research on Web-Based Virtual Grinding Machine Tool P. Guan, H.X. Zhang, T.B. Yu and W.S. Wang	825
Feasible Solution of Profile-Shift Coefficient for Involute Internal Gear Pair in Zero-Tooth-Difference Mechanism S.J. Wang and C. Zhang	830
An Principle and Technology of On-Machine Measurement for Large Gear Hopping J.Q. Jin, X.Y. Jiang, F.H. Li and H. Li	836
The Influence of Following Error of Servo System on Machining Precision for NC Machine Tool X.W. Sun, W.T. Liu, Y.J. Zhang and K. Wang	841
Design of the Inner Helicoids of Screw Motor Stator's Steel Casing and Studying of NC Manufacturing Technology K. Wang, S.Q. Wang and X.W. Sun	846
Study on the Influence of Rolling Technology on the Broadside Feature of Laser Tailor-Welded Blanks with Long Weld Seam C.Z. Hao and D.M. Ma	851
Computational Analysis of Condensed Vaporized Alloying Elements of 5456 Aluminum Alloy J.I. Achebo and O. Ogboore	855
The Optimal Maintenance Period for Repairable Product after Warranty Expiration under Renewing Warranty Z.Y. Hu and L.Y. Xie	860

A Method of Quality Control for Networked Collaborative Product Development X.Y. Jiang, S.J. Wang, J.Q. Jin and W.S. Wang	866
Analysis of Hydraulic Lifting System and Design of Cylinder for the New 450t Schnabel Car Y.H. Li, W.Z. Zhao and C.G. Nie	871
Vibration Effects on Tailstock of a Turning Machine H.S. Bidgoli and R.A. Mahdavinejad	876
Mean Square Error Criteria to Multiple Quality Characteristics Robust Design by the Weighted Tchebycheff Method L.J. Shen, Y. Zhao and J. Yang	881
Theoretical and Experimental Studies of Statistical Evaluation Method for Flatness Error L. Zhang, D.Q. Yu, Y.Q. Yang, D.R. Zheng and M. Hu	886
GSPN Based Reliability Design for Intellectualized System C.Y. Jiang, G.Q. Li and X.H. Bao	891
A Series of New Nonlinear Dynamic Equations of Rolling Element Bearing Systems D. Xu, Y.C. Xu, X. Chen, Y.M. Yang and X.L. Li	896
Study on Lateral Stiffness for Flexicoil Circle Springs with Rubber Pads G.W. Yang and S.N. Xiao	902
The Integrated Performability Analysis Architecture of the Computer Networks J. Shi, S.P. Wang and K. Wang	907
Analysis of Dynamic Behavior of a Large-Sized Vibration Fluidized Bed X.W. Kong, X.H. Kang, B. Li and Z.F. Song	912
Research on Optimization Model Based on House of Quality Fuzzy Theory in Industrial Environment Z.H. Ren, Y.Z. Chen, B.C. Wang and B.C. Wen	916
Numerical Simulation Analysis of Fluid in the Semi-State within the Desulphurization Tower W.L. Guo and C. He	921
Transverse Vibration Analysis of Euler-Bernoulli Beams Carrying Concentrated Masses with Rotatory Inertia at Both Ends Y. Zhang, L.Y. Xie and X.J. Zhang	925
Dynamic Design Method for Magnesium Alloys Wheel of New Energy Vehicles W.H. Zhu, Z.X. Zheng, J.Z. Feng, H.H. Xu, Y.T. Wang and L.L. Lu	930
Multiphase Flow Simulation and the Analysis Method of the Pressure Drop in the Vibrated Fluidized Bed B.C. Li, W.Q. Lin and L.M. Wang	935
Influence Factors Analysis of Hammer Head and Screen Plate Life of CFB Coal Crusher H.O. Lv	940
Research and Application on Product Data Management Technology Y.J. Zhang, S.J. Wang and H. Li	944
Very High Cycle Fatigue Behavior and Thermographic Analysis of High Strength Steel C. Shao, C. Bathias, D. Wagner and H. Tao	948
Spares Utilization Calculation Method Based on Maintenance Support Activity Z.Y. Zhang, R. Kang, R. Liu and Z.H. Xu	952
Product Data Integration and Management Research Based on XML C.G. Guo, Y.X. Liu, S.M. Hou and H.L. Xie	957
Transient Process Response Analysis of Forced Synchronous Elliptical Vibrating Screen L.W. Zhang, Z.J. Yin, X. Sun and Z.C. Tang	962
Novel Approach to Ship Multidisciplinary Design and Optimization Using Genetic Algorithm and Response Surface Method H. Gorshy, X.Z. Chu, L. Gao and H.B. Qiu	967
Modal Analysis on the Truss Structures of Machine Tool S.X. Yuan, X.L. Wen and Y.M. Zhang	972
A Conceptual Design Approach Generated by Integrating AD and TRIZ into the Conceptual Design Phase of SAPB X. Zhang and D.Z. Chen	977