

Table of Contents

Guest Editorial

| | |
|---|-----|
| Research of Dynamic Temperature Field of Spur Gear Based on ANSYS C.N. Ri and H.Q. Yuan | 1 |
| Research on Hardware-in-the-Loop Missile Weapon System Simulation Based on HLA and Modelica J.S. Bao, H.K. Feng, D.L. Wu and J. Ye | 6 |
| Study on Nonlinear Vibration in Dynamic Turning Long-Thin Axis Process J. Feng and J.L. Zhang | 10 |
| Modal Analysis on Fluid–Structure Interaction System of a Large-Scale Gas Control Valve F. Cao and Y. Wang | 15 |
| High-Precision Positioning and Speed Smooth Transition Control Algorithm for Terminal Point of Micro-Line Segment Z.L. Huang, S.W. Lin and D.Y. Jiang | 19 |
| Study on High Speed Cutting Technology for Green Manufacturing X.J. Wang, W.H. Yue and Z.Q. Han | 25 |
| The Image Process Technology of Micro-Detection for Jet-Pan Based on CCD D.X. Shao, J. Li, R. Lin and G.L. Wang | 31 |
| Design Consideration for Precise Cable Drive Y.F. Lu, D.P. Fan, D.J. Sheng and Z.Y. Zhang | 37 |
| Research Progress of Green Manufacturing and its Uncertainty Analysis Z.Q. Han, W.H. Yue and X.J. Wang | 42 |
| Influences of Cutting Edge Radius on Cutting Deformation in High-Speed Machining Ti6Al4V S.C. Yang, M.L. Zheng, Y.H. Fan, D.Q. Zhang and Y.B. Li | 47 |
| Non-Contact Vision Inspection System of Geometric Dimension Based on LabVIEW and IMAQ Vision B. Wang, K. Zhang, M. Liang and W. Luo | 53 |
| Function Simulation Analysis for Conical Spring of DANA Axis-Fixed Transmission D.L. Li, Y.F. Yin and F.F. Ding | 57 |
| Visual Detection Model of Gauge between High Signals and Contact Net Y. Yu, X.L. Zhu, C.S. Xue and A.F. Hui | 61 |
| A Novel Small Mobile Robot System for Polishing Freeform Surface of Large Mold G.L. Chen and J. Zhao | 65 |
| Gross Error Detection in Pneumatic Measurement of Form Tolerance Based on Fuzzy Assessment J. Liu, G.L. Wang, J. Wang and X.D. Pan | 69 |
| Hierarchical Structure Model of High Speed Milling Hardened Steel B. Jiang, H.J. Yao, D.H. Xia, Y. Li and H. Xu | 75 |
| A Multi-Objective Coordinated Control Oriented New Algorithm for NURBS Curve Interpolation Z.H. Hu, Y.R. Zhan and M.K. Gao | 80 |
| Principle Experiment of Electroactive Polymer Wind-Driven Generator W.L. Xu, J.B. Cao, S.J. E, J. Ji, J. Jiang, J. Yu and R.Y. Wang | 88 |
| A Study into Spin-Forming Process of Internal Spline L.Y. Sun, Q.X. Xia, X.Q. Cheng and B.Y. Ye | 92 |
| A Fractal Model of the Semi-Fixed Abrasive Plate Surface Topography Z.Z. Zhou and J.L. Yuan | 96 |
| Number Study of the Formation Process of Shaped Charge Metal Jet for Quarry Mining Z.Q. Liu and X. Wang | 101 |
| Numerical Simulation for the Interaction of the Semi-Fixed Abrasive Plate with the Workpiece Y. Zhang, Z.Z. Zhou, J.L. Yuan and C.D. Lu | 107 |
| Kinematics Analysis of the Greenhouse Robot J. Liu, S. Wang, X.L. Wang and W.K. Ma | 112 |

| | |
|---|-----|
| Designing of Armature Components' Composite Stiffness Measuring Device Structure H.F. Wang, G.L. Wang, Q.W. Zeng and Z.S. Lu | 117 |
| Static and Dynamic Characteristic of Cutting Force when High-Efficiency Cutting Ti-6Al-4V Y.H. Fan, M.L. Zheng, D.Q. Zhang, S.C. Yang and M.M. Cheng | 122 |
| Cutting Parameters Optimization of Turning Titanium Alloy Diaphragm Disk Based on Surface Topography Simulation W. Zhang, M.L. Zheng and M.M. Cheng | 129 |
| What are Virtual Enterprises Virtualize D.X. Huang and S.X. Zhu | 134 |
| Quantitative Analysis of Primary Phase Morphology in Semi-Solid Alloys Based on LabVIEW and IMAQ Vision B. Wang, Y.B. Wei and J.D. Chen | 140 |
| Finite Element Modeling of Polymer Flow during Hot Embossing with Different Mold Structures and Embossing Conditions T. Zhang, Y. He and J.Z. Fu | 144 |
| Design of Interface Circuit of CPLD-Based Photoelectric Encoder H.B. Liao, X.Y. Zhou, L.C. Zhang and D.P. Fan | 149 |
| Monte Carlo Simulation and Applications in Design and Manufacture of Nanostructures X.L. Hu, J.X. Chen and Y.C. Liang | 154 |
| The Formation of Virtual Enterprise: A Resource Based Perspective D.X. Huang and S.X. Zhu | 159 |
| Study on Urban Expressway Lane Mark Detection in Special Conditions X.S. He, S.S. Wang, Z.Y. Cai and D.Y. Wang | 164 |
| Influence of Shear and Gyroscopic Effect of Grinder Spindle on Critical Speed C.H. Li, H.Y. Zhao and Y.C. Ding | 168 |
| Study on Control of Brushless DC Motor for Electric Vehicle J.B. Cao, M.Q. Mao, W.L. Xu, J. Ji, J. Jiang and J. Yu | 173 |
| Design Method of Turbine Fir-Tree Blade Root Tenon Slot Broach B. Wang, N.J. Wang, S.L. Sun and D.Q. Zhu | 177 |
| The Characteristics of the Fatigue Failure in the Disposable Machinery Y.F. Li, X.D. Pan, G.L. Wang, Z. Lin and X. Kang | 181 |
| Study on Uniform Magnetorheological Finishing Technology with Changeable Removal Rate Model Based on Rheological Effect X.S. He, C.F. Gao, B. Wang and Z.Y. Luo | 186 |
| Dynamics Characteristic Analysis of Deliberate Mistuned Bladed-Disk System in Compressor Based on CMS Method H.Q. Yuan and L. Zhang | 192 |
| Experiment Study of Adiabatic Shear Critical Conditions in Orthogonal Cutting of Fe-36Ni Invar Alloy G.H. Li, H.J. Qi and B. Yan | 198 |
| Research on High Efficient Virtual Measuring Method for Globoidal Cam Machining Error Z.H. Hu, J.M. Liu, Z. Kuang and L. Tang | 202 |
| Fatigue Source Analysis of Dynamic Mold Temperature Injection Mold for Large Plastic Parts X.P. Li and N.N. Gong | 210 |
| Design of Blocking Software Based on DSPF2812 Servo Control System X.Y. Gao, Z.Q. Li and D.P. Fan | 214 |
| Mechanical Behavior of the Amorphous/Nanocrystal Ni-Mo Alloy W.Z. Chen, H. Xu, B.D. Jing and N. Li | 220 |
| Surface Morphology Simulation of High Speed Milled of Face Milling Cutters A.Q. Lin, M.L. Zheng, C.G. Fan and L. Yang | 225 |
| A New Control Algorithm for Maximum Power Point Tracking of Photovoltaic Generation System X.S. He, C.F. Gao, B. Wang and Z.Y. Luo | 230 |
| Simulation Analysis of Fluid-Structure Interactions with Moving Mesh M.L. Sun, D. Wu, M.Q. Wang, S.F. Jin and K.Z. Wang | 235 |

| | |
|---|-----|
| Research on CAD Data Format Conversion for Transport Infrastructure Information H.W. Wang, H.L. Kui, S.W. Li and G. Li | 239 |
| Research on the Fault Diagnosis Knowledge Representation and Application Method Based on Ontology J.L. Deng, Y.H. Chen and G.R. Chen | 243 |
| Concentration Polarization BP Model of Nanofiltration Separation Q. Yang, X. Qiu and X. Shen | 247 |
| Based on LS-DYNA Dynamic Simulation Analysis in Electroplated CBN Hard Gear-Honing Processing M.D. Zhang and M. Lv | 251 |
| The Research Trends and Comprehensive Evaluation of Hybrid Excavator D.Y. Wang and Y. Zhang | 255 |
| Study on Desalination Characteristics of Nanofiltration Separation Q. Yang, X. Qiu and X. Shen | 261 |
| Temperature Field Measurement of Turning Tool with Thermal Infrared Imager Y.M. Quan, H. Xu and Z.Y. Ke | 265 |
| Study on Automatic Production Line for Coating Shell Making of Refined Casting Mould X.L. Zhu, J.B. Cao, Y. Yu, A.F. Hui and J.J. Chen | 269 |
| Three Dimensional Modeling and Aerodynamic Analysis of MW Wind Turbine Blade H. Pan, W.L. Sun and L.Y. He | 274 |
| Study on Safe Behavior of Electric Bicycle Braking Process X. Qiu, Q. Yang, S.H. Wang and A. Yusuph | 279 |
| Development of Software System for NC Dressing Form Grinding Wheel X.Z. Ren, F.K. Xie and J.X. Su | 283 |
| Simulation of Tracking the Fluid-Fluid Interface with the Level Set Method M.L. Sun, M.Q. Wang, D. Wu, Q. Chen and G. Zhang | 287 |
| Monte Carlo Simulation of Morphology Evolution of Machined Surface Y.C. Liang, X.L. Hu and J.X. Chen | 291 |
| Design and FEM Analysis for Crankshaft in Truck Mounted Petroleum Compressor S.Z. Zhou, X.B. Hu, C. Li and X.W. Wang | 296 |
| The Design and Simulation of Gear-Shaped Profile Chamfering Structure N.J. Wang, Y. Tang and P. Wang | 300 |
| Research on Man-Machine Coordinated Manufacturing Mode Based on Wireless Communication and Internet of Things L. Xia, J. Han and N.E. Zhu | 306 |
| Study on Rainwater Fast Drain-Collection System in Campus Main-Road N. Fu, Q. Yang, D.X. Cai, S.H. Wang and S. Shi | 311 |
| Research on the Condom Image Detection Algorithm for Automatic Sorting Z. Ying, C.H. Li and W.P. Gao | 315 |
| The Parameter Design and Experiment of Active Valve with Piezoelectric Pump J.M. Wen, J.J. Ma, Z.H. Zhang, G.M. Cheng and J.W. Kan | 320 |
| A Wireless Temperature Measuring System for Rotating Spindle Based on ZigBee W.J. Huo, X.H. Yao and J.Z. Fu | 325 |
| Dynamical Research on a Micro-Displacement Actuator Based on V-Type Guide-Way J.J. Ma, J.M. Wen, P. Zeng, J.W. Kan and Z.H. Zhang | 330 |
| The Application of Fuzzy PID on Hydraulic Universal Testing Machine L. Yang, D.Y. Wang, W.Y. Chen and Y. Weng | 335 |
| Study on Steady-State Temperature Field and Thermal Deformation for Permanent Magnet Synchronous Motorized Spindle Y. Lu, S.D. Gao and Z.P. Hao | 340 |
| Shear and Squeeze Rheometry of Magnetorheological Fluids H.Y. Wang and H.Q. Zheng | 344 |
| The Influence of Multiple Piezoelectric Effects on Elastic Coefficient of Piezoelectric Ceramics Z.H. Zhang, G.M. Cheng, J.W. Kan, P. Zeng and J.M. Wen | 348 |
| Research on Modeling Mapping Relationship between Cutting Load and Spindle Motor Current X. Li and D.F. Feng | 353 |

| | |
|---|-----|
| Optimization of Axis Tilt Machining with Five-Axis Ball-End Cutter K.H. Zhang, L. Min and D.H. Wen | 357 |
| A Minimum Cost and Maximum Flow Model of Hazardous Materials Transportation Q.P. Gao | 363 |
| Microstructure and Electrochemical Properties of Amorphous/Nanocrystal Ni-Mo Deposits N. Li, X.P. Li and G.M. Cheng | 367 |
| A Fast Linear Calibration of Computer Stereo Vision System K. Zhang and H.P. Luo | 372 |
| Microstructure and Electrochemical Properties of Foamed Ni-Mo Alloy by Pulse-Electrodeposition H. Xu, N. Li, W.Z. Chen and B.D. Jing | 378 |
| An Operation Job Time Dispatching Algorithm for Injection Mold Manufacturing L.Z. Zhao, J.H. Yan and Y.B. Wang | 384 |
| Improvement on the Anycast Routing Algorithm Based on Genetic Algorithm M.S. Li and H.W. Liu | 389 |
| Control Research on Construction Excitation Frequency of Resonant Rubblization Machine X. Qiu, Q. Yang and L.Y. Chen | 394 |
| Laboratory Properties Evaluation of Wearing Course Asphalt Mixtures Incorporating RAP Materials L.Y. Chen, X. Qiu, X.K. Wang and Q. Yang | 398 |
| Study on Processing Technology of Waste Tire Crumb Rubber Modified Asphalt L.Y. Chen, Z.H. Cong, Q.L. You and N.X. Zheng | 402 |
| Finite Elements Simulation Analysis and Research on the Mast of Rotary Drilling Rig Y.X. Li, F.J. Yu, Y.L. Chen and L.N. Che | 406 |
| A Research Based on the Deep Self-Balanced Hydraulic Pump B.D. Jing, B.B. Lv, Z.J. Pan, L. Yi, Z.G. Gang and J.Y. Jiang | 411 |
| Theoretical Calculation and Experimental Research on Sequential Turbocharging of a Marine Diesel Engine P.Q. Zhang, Q.L. He and Y.Y. Wang | 416 |
| Analysis Geometric Precision of Workpiece and Geometric Errors Model of 5-Axis Machining Center for Processing Turbo Molecular Pump Rotor W. Zhao and G.J. Wang | 423 |
| Study on Modal Parameters Identification Based on Stratified Sampling and Complex Morlet Wavelet Transform Y.H. Jiang, H. Xu, G.M. Cheng, J.M. Wen and J.J. Ma | 428 |
| Design and Implementation of Engineering Graphics Computer Practice and Examination System that Based on Visual Basic S.Y. Zheng, X.M. Li, X.Y. Feng, C.J. Li and X. Lu | 434 |
| Technique Project and Experimental Study of Gas-Particle Two-Phase Compulsive Circulation Flows Finishing W.H. Li, S.Q. Yang and X.C. Yang | 438 |
| Topology Optimization of Headstock of Heavy Machine Tool F.L. Cheng and F.H. Wu | 442 |