Table of Contents

Preface

Chapter 1: Advanced Design Technology

Assembly Sequence Planning Including Tool Check Based on Improved Ant-Colony Algorithm	
R. Li, H. Chen and L. Xie	3
Design and Implementation Full Automatic Intelligent Control System Oriented to Vacuum	
Casting H.G. Zhang, Q.X. Hu, Y.Y. Liu, D.L. Liu, J. Huang and Z.F. Chi	10
Design of MK1432/H CNC Precision Cylindrical Grinding Machine X.J. Wang and X.G. Fu	22
$\begin{array}{l} \textbf{Design of the Visualization Automatic Control System on the LPG Shuttle Kiln} \\ X.J.\ Wang\ and\ X.G.\ Fu \end{array}$	26
$\begin{array}{c} \textbf{Design on Tracing of Automatic Handling Robot Car with Six Degrees of Freedom} \\ X.J.\ Wang\ and\ X.G.\ Fu \end{array}$	31
Rotor Combined Design for High-Speed PM Machines T.Y. Wang, J.T. Cheng and C. Zhang	34
Study on Optimal Design of a Drillers' Gear Box Using Method of Grey Classification $X.P.\ Li$	39
Study on the Computer Modeling Technology of Die Design and Engineering C.Y. Huang and X.G. Fu	45
The Influence of the Leading Wheel Structural Change on Stress of Multi-Rope Friction	
Hoist G.L. Zhou and W.J. Chu	48
Chapter 2: Advanced Material and Manufacturing Technologies	
Design and Application of Rapid Manufacturing Domain Ontology to Support Resource Sharing	
Design and Application of Rapid Manufacturing Domain Ontology to Support Resource Sharing D. Wu, Q.X. Hu and Y. Yao	57
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAly Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan	57 65
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAly Cladded Coatings	
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAly Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel	65
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder	65 70
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder B.G. Yang Fitting Ellipse Based on the Dual Conic Model	65 70 76
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder B.G. Yang Fitting Ellipse Based on the Dual Conic Model C. Zhao, M.L. Fu and J.T. Cheng Forming Principle and Error Analysis of Ballscrew Manufactured by Cold Rolling	65 70 76 80
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder B.G. Yang Fitting Ellipse Based on the Dual Conic Model C. Zhao, M.L. Fu and J.T. Cheng Forming Principle and Error Analysis of Ballscrew Manufactured by Cold Rolling X.Q. Wang, F.K. Cui, X.J. He and H.Y. Xu Influence of Air Damping on Nanoelectro-Mechanical Switches in Low Vacuum	65 70 76 80 85
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder B.G. Yang Fitting Ellipse Based on the Dual Conic Model C. Zhao, M.L. Fu and J.T. Cheng Forming Principle and Error Analysis of Ballscrew Manufactured by Cold Rolling X.Q. Wang, F.K. Cui, X.J. He and H.Y. Xu Influence of Air Damping on Nanoelectro-Mechanical Switches in Low Vacuum N. Gong, B.G. Liu and Y.C. Liang Magnetic Test Method Used to Identify Plastic Deformation of Ferromagnetic Material	65 70 76 80 85 91
Sharing D. Wu, Q.X. Hu and Y. Yao Effects of Nano-Al ₂ O ₃ p on Hot Corrosion Resistance of NiCoCrAlY Cladded Coatings H.Y. Wang, D.W. Zuo, X.F. Li, M.D. Wang, Y.P. Yu and X.M. Yuan Experiment Research of Cutter Edge and Cutting Parameters Influence on Machined Surface Roughness for High Speed Milling Hardened Steel W. Zhang, M.L. Zheng, M.M. Cheng and W.T. Wang Finite Element Simulation and Analysis for the Working Process of Working-Roll of Carder B.G. Yang Fitting Ellipse Based on the Dual Conic Model C. Zhao, M.L. Fu and J.T. Cheng Forming Principle and Error Analysis of Ballscrew Manufactured by Cold Rolling X.Q. Wang, F.K. Cui, X.J. He and H.Y. Xu Influence of Air Damping on Nanoelectro-Mechanical Switches in Low Vacuum N. Gong, B.G. Liu and Y.C. Liang Magnetic Test Method Used to Identify Plastic Deformation of Ferromagnetic Material F.Y. Yu and J.C. Zhang Mechanics Study on Leveling Process by a Roller during Selective Laser Forming	65 70 76 80 85 91 97

Monitoring on GBT Series Small Flow Pump Shell Long Position of Computer-Aided	
Process X.J. Wang and X.G. Fu	110
Research on Character of Physical Field Distribution in High Speed Ball-End Milling Hardened Steel	
B. Jiang, X.L. Liu, M.L. Zheng, Y.J. Yang and L. Jiang	114
Research on Five-Axis CNC Machining Simulation and Experiment of Integrated Impeller Based on VERICUT W.G. Du, Y.Y. Guo and C. Zhao	119
Research on Process Parameters of Ballscrew Manufactured by Cold Rolling F.K. Cui, X.Q. Wang, X.J. He, Y. Li and Z.R. Han	123
Research on Self-Propelled High Spray Machine Steel Stamping Forming R.H. Zhang and H. Miao	128
Research on Stability of High Speed Milling System Y.Y. Guo, H. Lei, C. Zhao and C.T. Sun	137
Study on Automatic Hydrological Telemetry System Based on SMS/GPRS X.J. Wang, X.G. Fu and M.X. Zhou	143
Study on Object Function of Milling Insert Adhering Disrepair for Machining the	
Refractory Steel M.Y. Wu, X.L. Liu and Y.N. Cheng	147
Study on Thermal Conductivity of Diffusion Layer of Coated Cutting Tools H.C. Shen, B.G. Yang and J.F. Liang	153
Synthesis of Ca ₃ (VO ₄) ₂ :Eu ³⁺ , Bi ³⁺ Nanophosphors in the Presence of Stearic Acid X.J. Wang and X.G. Fu	160
The Innovation Scheme Research of Cutting Part with Shearer W.D. Wu and S.Y. Yan	164
Tool Life Evaluation Methods of Heavy Forging Hogging Machining Based on Image Processing Technology X.L. Liu, G.H. He, W.D. Li and F.G. Yan	169
Water Jet Shot Peening Strengthening Surface Roughness X. Dong, R.Z. Guo, S.W. Song and C.Y. Zhuo	174
A. Dong, R.Z. Guo, S. w. Song and C. F. Zhuo	1/4
Chapter 3: Other	
Off-Axis Aberration Measurement Based on the Hartmann-Shack Sensor A.C. Xu, J.B. Chen, P.M. Zhang and J.J. Wu	183
Reflection and Refraction of Coupled Transverse and Micro-Rotational Wave at Interface between Two Micropolar Elastic Solid H.Y. Xu, B.B. Xue, F.K. Cui and X.Q. Wang	193
Research and Realization of a New Algorithm for Stereo Matching Based on Binocular	193
Vision J.T. Cheng, C. Zhao, W.L. Zhao and W.H. Wu	202
Research on Model Transformation Method Oriented to Model Driven ERP System Y. Che, G. Wang, M. Lv and B.Y. Ren	208
The Research on Long-Term Financial Early-Warning System of Listed Companies W.M. Mou and S.B. Gu	216
Vacuum Casting Bubble Automatic Elimination System Based on on-Line Machine Vision Detection	222
Y.Y. Liu, Z.F. Chi, Q.X. Hu, Y. Yao and J. Huang Stability Analysis on Milling Processing of Aviation Aluminum Alloy	222
W.H. Wu, Y.Y. Guo and C. Zhao	228