

CHINESE JOURNAL OF MECHANICAL ENGINEERING

Vol. 28, No. 6, 2015

Contents

Advanced Manufacturing Technology

- 1089 **Influence of Alignment Errors on Contact Pressure during Straight Bevel Gear Meshing Process**
HAN Xinghui, HUA Lin, DENG Song, and LUO Qiuping
- 1100 **Shared and Service-oriented CNC Machining System for Intelligent Manufacturing Process**
LI Yao, LIU Qiang, TONG Ronglei, and CUI Xiaohong
- 1109 **Material Removal Model Considering Influence of Curvature Radius in Bonnet Polishing Convex Surface**
SONG Jianfeng and YAO Yingxue
- 1117 **Additive Manufacturing of Ceramic Structures by Laser Engineered Net Shaping**
NIU Fangyong, WU Dongjiang, MA Guangyi, and ZHANG Bi
- 1123 **Kinematics Analysis and Optimization of the Fast Shearing-extrusion Joining Mechanism for Solid-state Metal**
ZHANG Shuangjie, YAO Yunfeng, LI Lingchong, WANG Lijuan, LI Junxia, and LI Qiang
- 1132 **Springback Prediction and Optimization of Variable Stretch Force Trajectory in Three-dimensional Stretch Bending Process**
TENG Fei, ZHANG Wanxi, LIANG Jicai, and GAO Song

Material Mechanics and Reliability Analysis

- 1141 **Effect of Surface Topography on Stress Concentration Factor**
CHENG Zhengkun and LIAO Ridong
- 1149 **Thermoelastic Analysis of Non-uniform Pressurized Functionally Graded Cylinder with Variable Thickness Using First Order Shear Deformation Theory(FSDT) and Perturbation Method**
KHOSHGOFTAR M J, MIRZAALI M J, and RAHIMI G H
- 1157 **Frequency Dispersion of Love Waves in a Piezoelectric Nanofilm Bonded on a Semi-infinite Elastic Substrate**
ZHANG Sijia, GU Bin, ZHANG Hongbin, PAN Rongying, Alamusi, and FENG Xiqiao
- 1163 **Numerical Analysis of Deteriorated Sub-sea Pipelines under Environmental Loads**
GÜCÜYEN Engin
- 1171 **Influence of Non-smooth Surface on Tribological Properties of Glass Fiber-epoxy Resin Composite Sliding against Stainless Steel under Natural Seawater Lubrication**
WU Shaofeng, GAO Dianrong, LIANG Yingna, and CHEN Bo

Mechanical Transmission and Robotics

- 1177 **Parametric Analysis of the End Face Engagement Worm Gear**
DENG Xingqiao, WANG Jueling, WANG Jinge, CHEN Shouan, and YANG Jie
- 1186 **Optimum Weight Design of Functionally Graded Material Gears**
JING Shikai, ZHANG He, ZHOU Jingtao, and SONG Guohua
- 1194 **Statistical Modification Analysis of Helical Planetary Gears based on Response Surface Method and Monte Carlo Simulation**
ZHANG Jun and GUO Fan
- 1204 **Singularity Analysis of a 3-RPS Parallel Manipulator Using Geometric Algebra**
LI Qinchuan, XIANG Ji'nan, CHAI Xinxue, and WU Chuanyu
- 1213 **Fuzzy Theory Based Control Method for an In-pipe Robot to Move in Variable Resistance Environment**
LI Te, MA Shugen, LI Bin, WANG Minghui, and WANG Yuechao

Measurement, Fault Diagnosis and Signal Processing

- 1222 **Propagation of Electromagnetic Wave in Coaxial Conical Transverse Electromagnetic Wave Cell**
LIU Xingxun, ZHANG Tao, and QI Wangquan
- 1229 **Bayesian Reliability Modeling and Assessment Solution for NC Machine Tools under Small-sample Data**
YANG Zhaojun, KAN Yingnan, CHEN Fei, XU Binbin, CHEN Chuanhai, and YANG Chuanguai
- 1240 **Fault Feature Extraction of Rolling Bearing Based on an Improved Cyclical Spectrum Density Method**
LI Min, YANG Jianhong, and WANG Xiaojing
- 1248 **Feature Selection by Merging Sequential Bidirectional Search into Relevance Vector Machine in Condition Monitoring**
ZHANG Kui, DONG Yu, and BALL Andrew
- 1254 **Quantitative Diagnosis of Fault Severity Trend of Rolling Element Bearings**
CUI Lingli, MA Chunqing, ZHANG Feibin, and WANG Huaqing

Fluid Machinery and Mechanical Dynamics

- 1261 **Fluid-structure Interaction Analysis and Lifetime Estimation of a Natural Gas Pipeline Centrifugal Compressor under Near-choke and Near-surge Conditions**
JU Yaping, LIU Hui, YAO Ziyun, XING Peng, and ZHANG Chuhua
- 1269 **Motion Stability Analysis of Non-sinusoidal Oscillation of Mold Driven by Servomotor**
YAO Yunfeng, LI Junxia, and FANG Yiming
- 1277 **Nonlinear Resonance of the Rotating Circular Plate under Static Loads in Magnetic Field**
HU Yuda and WANG Tong
- 1285 **Optimization Study on a Single-cylinder Compressed Air Engine**
YU Qihui, CAI Maolin, SHI Yan, and XU Qiyue