

# CHINESE JOURNAL OF MECHANICAL ENGINEERING

Vol. 28, No. 2, 2015

## Contents

- 217 **Review on Stress Corrosion and Corrosion Fatigue Failure of Centrifugal Compressor Impeller**  
SUN Jiao, CHEN Songying, QU Yanpeng, and LI Jianfeng
- 226 **Kinematics and Dynamics Hessian Matrices of Manipulators Based on Screw Theory**  
ZHAO Tieshi, GENG Mingchao, CHEN Yuhang, LI Erwei, and YANG Jiantao
- 236 **Optimization and Mechanical Accuracy Reliability of a New Type of Forging Manipulator**  
CHEN Kang, MA Chunxiang, ZHENG Maoqi, and GAO Feng
- 249 **Operation and Force Analysis of the Guide Wire in a Minimally Invasive Vascular Interventional Surgery Robot System**  
YANG Xue, WANG Hongbo, SUN Li, and YU Hongnian
- 258 **Complete Real Solution of the Five-orientation Motion Generation Problem for a Spherical Four-bar Linkage**  
ZHUANG Yufeng, ZHANG Ying, and DUAN Xuechao
- 267 **Controller Parameter Tuning of Delta Robot Based on Servo Identification**  
ZHAO Qing, WANG Panfeng, and MEI Jiangping
- 276 **Dynamic Flow Control Strategies of Vehicle SCR Urea Dosing System**  
LIN Wei, ZHANG Youtong, and ASIF Malik
- 285 **Generalized Internal Model Robust Control for Active Front Steering Intervention**  
WU Jian, ZHAO Youqun, JI Xuewu, LIU Yahui, and ZHANG Lipeng
- 294 **Elimination of Fuel Pressure Fluctuation and Multi-injection Fuel Mass Deviation of High Pressure Common-rail Fuel Injection System**  
LI Pimao, ZHANG Youtong, LI Tieshuan, and XIE Lizhe
- 307 **Markov Chain Modelling of Reliability Analysis and Prediction under Mixed Mode Loading**  
SINGH Salvinder, ABDULLAH Shahrum, NIK MOHAMED Nik Abdullah, and MOHD NOORANI Mohd Salmi
- 315 **Comprehensive Reliability Allocation Method for CNC Lathes Based on Cubic Transformed Functions of Failure Mode and Effects Analysis**  
YANG Zhou, ZHU Yunpeng, REN Hongrui, and ZHANG Yimin
- 325 **Analysis on Pseudo Excitation of Random Vibration for Structure of Time Flight Counter**  
WU Qiong and LI Dapeng
- 331 **Force Characteristics in Continuous Path Controlled Crankpin Grinding**  
ZHANG Manchao and YAO Zhenqiang



- 338 **In-situ Fabricated TiB<sub>2</sub> Particle-whisker Synergistically Toughened Ti(C, N)-based Ceramic Cutting Tool Material**  
LIU Hanlian, SHI Qiang, HUANG Chuanzhen, ZOU Bin, XU Liang, and WANG Jun
- 343 **Large Chip Production Mechanism under the Extreme Load Cutting Conditions**  
LIU Xianli, HE Genghuang, YAN Fugang, CHENG Yaonan, and LIU Li
- 353 **Tandem Strip Mill's Multi-parameter Coupling Dynamic Modeling Based on the Thickness Control**  
PENG Yan, ZHANG Yang, SUN Jianliang, and ZANG Yong
- 363 **Influence of Friction Drive Lift Gears Construction on the Length of Braking Distance**  
LONKWIC Poul
- 369 **Development of a Novel Parallel-spool Pilot Operated High-pressure Solenoid Valve with High Flow Rate and High Speed**  
DONG Dai and LI Xiaoning
- 379 **Analytical Higher-Order Model for Flexible and Stretchable Sensors**  
ZHANG Yongfang, ZHU Hongbin, LIU Cheng, LIU Xu, LIU Fuxi, and LÜ Yanjun
- 387 **Experimental Investigation on Cavitating Flow Shedding over an Axisymmetric Blunt Body**  
HU Changli, WANG Guoyu, and HUANG Biao
- 394 **Measurements of Non-reacting and Reacting Flow Fields of a Liquid Swirl Flame Burner**  
CHONG Cheng Tung and HOCHGREB Simone
- 402 **Investigation and Improvement of the Staggered Labyrinth Seal**  
LIN Zhirong, WANG Xudong, YUAN Xin, SHIBUKAWA Naoki, and NOGUCHI Taro
- 409 **Fatigue Crack Growth Rate of Ti-6Al-4V Considering the Effects of Fracture Toughness and Crack Closure**  
ZHANG Junhong, YANG Shuo, and LIN Jiewei
- 416 **Overall Evaluation of the Effect of Residual Stress Induced by Shot Peening in the Improvement of Fatigue Fracture Resistance for Metallic Materials**  
WANG Renzhi and RU Jilai
- 422 **High-precision Thickness Setting Models for Titanium Alloy Plate Cold Rolling without Tension**  
WANG Xiaochen, YANG Quan, HE Fei, SUN Youzhao, and XIAO Huifang
- 430 **Variations in the Microstructure and Properties of Mn-Ti Multiple-phase Steel with High Strength under Different Tempering Temperatures**  
LI Dazhao, LI Xiaonan, CUI Tianxie, LI Jianmin, WANG Yutian, and FU Peimao
- A1 **Contents of Journal of Mechanical Engineering, Vol. 51, No. 2, 2015**

Rev

3 Key Lab

**Abstract:** C  
impeller fail  
fatigue and  
dissolution  
mechanism  
frequency, a  
and the me  
carbonate, a  
stress corro  
compressor  
play an inc  
aerodynami

**Keywords:****1 Intro**

Stress c  
forms of  
uniform  
selecting  
corrosion  
steel and  
corrosion  
usually o  
long peri  
corrosion  
industrial  
loss.

A ce

\* Corres  
Supporte  
Grant No.  
Scholarship  
Project of  
Quarantine  
Innovation  
of China(C

© Chinese