

2019 IEEE 8th International Conference on Fluid Power and Mechatronics (FPM 2019)

**Wuhan, China
10-13 April 2019**

Pages 1-746



**IEEE Catalog Number: CFP1999K-POD
ISBN: 978-1-7281-0312-9**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1999K-POD
ISBN (Print-On-Demand):	978-1-7281-0312-9
ISBN (Online):	978-1-7281-0311-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ANALYSIS OF THE MAGNETIC PROPERTIES OF NEW AXIAL PISTON PUMP OR MOTOR MAGNETIC SLIPPER PAIR.....	2
<i>Chunyan Wang ; Shiju He ; Haishun Deng ; Chuanli Wang ; Tao He</i>	
ENERGY-SAVING RESEARCH FOR PNEUMATIC SYSTEM BY OPTIMIZED VALVE SWITCHING CONTROL STRATEGY.....	9
<i>Zhong-Ai Jiang ; Wei Xiong ; Hong-Wang Du ; Wang Lu</i>	
FAULTS SIMULATION AND INTELLIGENT DIAGNOSIS ANALYSIS OF HYDRAULIC SYSTEM OF MULTI-FUNCTIONAL LAYING TROLLEY	15
<i>Zhaoming Chen ; Wei Wang ; Zeyu Xu ; Ying Zhao</i>	
BENCH TEST OF AN ELECTRO-PNEUMATIC AMT SYSTEM	23
<i>Pengfei Qian ; Peng Xia ; Yang Liu ; Meng Lin ; Bing Zhang ; Fangwei Xie</i>	
ADAPTIVE REPETITIVE ASYMPTOTIC MOTION CONTROL OF HYDRAULIC ACTUATORS WITH ADJUSTABLE GAIN RISE FEEDBACK	31
<i>Zhenle Dong ; Zhongli Zhang ; Jianwei Ma</i>	
DESIGN OF A HIGHLY RELIABLE AND MINIATURIZED FLOW REGULATION SERVO SYSTEM.....	37
<i>Huaibing Li ; Aping Wang ; Peng Liu ; Xiangli Cheng ; Qi Li ; Meng Zhang</i>	
STUDY ON AUTOMATIC COMPENSATION VARIABLE CLEARANCE SEALING HYDRAULIC CYLINDER.....	42
<i>Cong-Chang Zhan ; Yuan Guo ; Liang-Cai Zeng ; Lian-Dong Fu ; Lei Zhang ; Qian-Mao Hu</i>	
POSITIONING OF PLANAR OBJECTS ON AN AIR FILM USING A VISCOUS TRACTION PRINCIPLE	50
<i>Yiheng Lin ; Xirui Chen ; Wei Zhong</i>	
EXPERIMENTAL STUDY ON THE PRELOAD AND AFTERLOAD RESPONSES OF A PNEUMATIC MOCK RIGHT VENTRICLE	60
<i>Feng Huang ; Zhuoling Zhu</i>	
STUDY ON PRINCIPLES AND CHARACTERISTICS OF NEW TYPE DIGITAL HYDRAULIC TRANSFORMATION.....	66
<i>Liu Tao ; Zhao Yang ; Sun Renfu ; Li Weijian ; Zhang Xinyu</i>	
3D ORBIT DESIGN FOR OVERCOMING THE DEAD-POINT PROBLEM IN SPHERICAL PUMP BASED ON VIRTUAL PROTOTYPING	72
<i>Dong Guan ; Li Jing ; Zhengwei Yang ; Hui Shen ; Junjie Gong</i>	
SIMULATION AND EXPERIMENTAL STUDY OF THE INFLUENCE OF TOOTH PROFILE ON THE PRESSURE PULSATION OF AN EXTERNAL GEAR MOTOR	83
<i>Hao Tian ; Shuwei Li ; Fan Wu ; Zengmeng Zhang ; Jiaoyi Hou</i>	
STUDY ON THE LOAD-CARRYING CAPACITY OF SURFACE TEXTURED SLIPPER BEARINGS OF AXIAL PISTON PUMP	91
<i>He-Sheng Tang ; Yan Ren ; Jia-Wei Xiang</i>	
RESEARCH ON A BRIDGE-TYPE ENERGY-SAVING CIRCUIT BASED ON PNEUMATIC VERTICAL MOTION SYSTEM.....	101
<i>Chaochun Hu ; Wei Xiong ; Hongwang Du ; Zhong' Ai Jiang</i>	
A DEFOMABLE HANDLING ROBOT BASED ON PNEUMATIC SYSTEM	107
<i>Shihao Jia ; Hong Zhao ; Xiangyi Zhang</i>	
RESEARCH ON ADAPTATIVE ALGORITHM IN FLEXIBLE NOZZLE ELECTRO-HYDRAULIC SERVO SYSTEM	113
<i>Chunqing Liu ; Yufeng Jiang ; Yonghong Li ; Long Pan</i>	
RESEARCH AND ANALYSIS OF OUTLET FLOW OF RELIEF VALVE PILOT VALVE.....	117
<i>Cheng Zhaoyi</i>	
ANALYSIS OF SIMULATE MODEL BASED ON SERVO MECHANISM SIMULATION DEVICE	122
<i>Cheng Zhaoyi ; Chen Anping ; Li Junyan</i>	
PARAMETER IDENTIFICATION OF HYDRAULIC SYSTEM OF ARMORED ENGINEERING VEHICLE.....	127
<i>Xue Dabing ; Chao Zhiqiang ; Guo Hao ; Wang Fei ; Huang Yong</i>	
RESEARCH ON THE EROSION-ABRASION OF THE SLIDING SPOOL OF ELECTRO- HYDRAULIC PROPORTIONAL DIRECTIONAL VALVE	133
<i>Zuti Zhang ; Shuping Cao ; Xin Luo ; Xiaohui Luo ; Huawei Wang ; Qiuping Li</i>	

SIMULATION ON FLOW RATE CHARACTERISTICS OF A NOVEL INTELLIGENT TRACE IRRIGATION SYSTEM BASED ON PNEUMATIC MICROFLUIDIC CHIP	143
<i>Liu Xuling ; Liu Jie ; Pu Zhou ; Li Songjing</i>	
ANALYSIS OF THE INFLUENCE OF OVERFLOW VALVE INLET STRUCTURE ON ITS STABILITY	151
<i>Ma Xiaochen ; Cheng Zhaoyi ; Wei Guanju</i>	
MECHANICAL VENTILATION INTELLIGENT CONTROL TECHNOLOGY BASED ON FUZZY ADAPTIVE PID.....	156
<i>Yan Shi ; Hao Zhang ; Zihao Luo</i>	
FAULT DIAGNOSIS STRATEGY DESIGN AND SIMULATION FOR AN AUTOMATIC GAS SUPPLY SYSTEM	164
<i>Guo Xun ; Fan Lei ; Shao Kai ; Liu Zhaozhi ; Li Chunlin ; Tang Qiang</i>	
SIMULATION AND EXPERIMENTAL RESEARCH ON SLEWING SYSTEM ENERGY SAVING OF HYDRAULIC HYBRID EXCAVATOR.....	177
<i>Liu Chengqiang ; Wang Yong ; Ding Yong ; Sun Yi</i>	
RESEARCH ON THE APPLICATION OF MECHANICAL SPEED TRACKER IN SUGARCANE PLANTER.....	183
<i>Chan Yuan-Ling ; Liang Hao-Chang ; Long Yu-Ping ; Li Yu-Feng ; Sun Ying-Jie ; Qin Dong-Dong</i>	
SYNCHRONIZED LEVELLING SYSTEM FOR HIGH EFFICIENCY COMPOSITE PRESS	188
<i>Wei Wang ; Shuai Cheng ; Xuming Yao ; Dapeng Yang</i>	
MODIFICATION OF THE MATHEMATICAL MODEL OF PNEUMATIC MUSCLE.....	192
<i>Zhou Tong ; Zhang Jian ; Zhou Junjie ; Jing Chongbo</i>	
NUMERICAL SIMULATION OF FLOW FIELD IN THE VALVE PORT OF HIGH FREQUENCY EXCITATION ROTARY VALVE BASED ON CFD	196
<i>Wu Wanrong ; Ding Yuangen ; Hao Qianhua ; Sun Peng ; Wan Fei</i>	
EXPERIMENTS OF CAVITATING FLOW IN MODEL CONTROL VALVE.....	202
<i>Zhijian Zheng ; Yangding Wang ; Jingling Song</i>	
NUMERICAL INVESTIGATION ON THE TRANSIENT CAVITATING FLOW INSIDE A TORQUE CONVERTER.....	208
<i>Cheng Liu ; Meng Guo ; Qingdong Yan ; Wei Wei</i>	
OPTIMIZATION OF FLOW CHANNEL IN 3D PRINTING HYDRAULIC MANIFOLD BLOCK BASED ON RESPONSE SURFACE METHOD	217
<i>Zhang Hong ; Wang Chen-Yu ; Li Chen-Chen</i>	
CFD SIMULATION ON FLOW FIELD OF A LARGE FLOW RATE HIGH SPEED ON/OFF VALVE	224
<i>Qiang Gao ; Yuchuan Zhu ; Xiaoming Chen ; Bruno Niyomwungeri</i>	
STUDY ON DUAL PUMP DIRECT DRIVE VOLUME CONTROL ELECTRO-HYDRAULIC SERVO SYSTEM	231
<i>Hui Chai ; Zhuxin Zhang ; Dingxuan Zhao ; Weijian Li</i>	
SIMULATION RESEARCH FOR FLUID-SOLID INTERACTION PERFORMANCE OF A PIEZOELECTRIC BIMORPH ACTUATOR APPLIED IN SERVO VALVES.....	236
<i>Xiaoming Chen ; Yuchuan Zhu ; Qiang Gao ; Bruno Niyomwungeri</i>	
SIMULATION RESEARCH OF THE SUPPLY PRESSURE LOAD-SENSING VALVE CONTROL SYSTEM.....	243
<i>Di Wu ; Wei Duan ; Jun Hua Hu</i>	
INVESTIGATION ON DYNAMIC CHARACTERISTICS OF AN UMBRELLA-TYPE SUCTION VALVE IN DIAPHRAGM PUMP	249
<i>Shudong Yang ; Youcheng Shi ; Xiwei Pan ; Geng Yang ; Yinshui Liu</i>	
EFFECTS OF PIPE LENGTH ON DYNAMIC CHARACTERISTICS OF PORT VALVES IN A DIAPHRAGM PUMP FOR SCR UREA DOSING SYSTEM	254
<i>Shudong Yang ; Xiwei Pan ; Youcheng Shi ; Yinshui Liu ; Zhuang Niu</i>	
ELECTRO-HYDRAULIC POSITION CONTROL SYSTEM VIA ACTIVE DISTURBANCE REJECTION CONTROLLER SUPPLIED WITH OIL BY VARIABLE-PRESSURE ACCUMULATORS.....	260
<i>Dingxuan Zhao ; Fanliang Meng ; Lixin Wang ; Shan Yao ; Lingyu Meng ; Huawen Lin</i>	
GLOBAL MODAL SPACE CONTROL FOR A HYDRAULICALLY DRIVEN STEWART PLATFORM	267
<i>Tian Tixian ; Zhu Jianyang ; Zhao Hui</i>	
INFLUENCE OF CUSHION CHAMBER ON EJECTION PERFORMANCE OF HIGH-PRESSURE PNEUMATICS SYSTEM	274
<i>Huiyi Zhang ; Dongfeng Jing ; Zhigao Zhao ; Qianjin Xiao ; Xiawei Guan</i>	

EXPERIMENTAL STUDY OF THE SLURRY BLAST MACHINE USED FOR THE DESCALING OF STEEL STRIP	280
<i>Huo Guotao ; Nie Songlin ; Ji Hui</i>	
RESEARCH ON FLYWHEEL BASED ENERGY RECOVERY SYSTEM FOR HYDRAULIC EXCAVATOR BOOM	292
<i>Jian-Song Li ; Ji-Yun Zhao ; Heng-Yuan Xing ; Xiao-Chun Zhang ; Yue-Feng Jin</i>	
NUMERICAL STUDY ON THE FLOW CHARACTERISTICS OF A THROTTLE WITH A MOVABLE SEAT IN WATER HYDRAULICS	302
<i>Yousheng Yang ; Hongli Xue ; Jing Zhao</i>	
ENERGY-SAVING PERFORMANCE OF ISOBARIC COMPRESSED AIR STORAGE RECEIVERS IN PNEUMATIC SYSTEMS	309
<i>Zhiwen Wang ; Jinshun Wang ; Zhongai Jiang ; Wei Xiong ; Hongwang Du ; Zuwen Wang</i>	
RESEARCH ON PRESSURE CHARACTERISTIC OF A HYDRAULIC BUFFERING VALVE FOR VEHICLE SHIFT	320
<i>Qihui Zhang ; Shen Liu ; Wei Xiong ; Hongwang Du ; Qingjun Lv</i>	
DESIGN AND CONTROL OF AN ELECTROHYDRAULIC SOFT ACTUATOR SYSTEM FOR ROBOTIC GRIPPERS	327
<i>Enlai Sun ; Tao Wang ; Zhipeng Zhu</i>	
FAULT DIAGNOSIS OF PUMPS BASED ON WAVELET ANALYSIS AND BP NEURAL NETWORK	334
<i>Jiang Dan ; Yu Jian ; Hao Xiaohong ; Ren Cong</i>	
EXPERIMENTAL INVESTIGATION OF LIFT COEFFICIENT FOR A SPRING-LOADED PRESSURE SAFETY VALVE	338
<i>Rongyu Wang ; Xiaomin Xiang ; Chaoyong Zong ; Fengjie Zheng ; Xueguan Song</i>	
THE IMPROVEMENT OF THE HYDRAULIC QUADRUPED ROBOT RESPONSE RAPIDITY AND IMPEDANCE CONTROL	346
<i>Qingjun Yang ; Rui Zhu ; Zhenguo Niu ; Jiaying Song ; Yudong Liu ; Chen Jie</i>	
DEVELOPMENT OF HYDRAULIC BRAKING SYSTEM FOR DECELERATOR	355
<i>Shi-Hao Shi ; Xiao-Ming Zhu ; Li-Hong Yang</i>	
THE CHARACTERISTICS OF A NEW TYPE OF INTEGRATED ELECTRIC-PNEUMATIC HYBRID ACTUATOR	360
<i>Yuhui Zong ; Dong Xiang ; Gang Bao</i>	
COMPLIANCE CONTROL OF A PNEUMATIC SYSTEM WITH BIOLOGICAL TISSUES LOAD	371
<i>Zhengtao Wang ; Dong Zhu ; Gang Bao</i>	
PRESSURE AND FLOW CHARACTERISTICS OF TWO DIMENSIONAL (2D) PISTON WATER HYDRAULIC PUMP	379
<i>Xu Yezhou ; Wang Yong ; Xing Tong</i>	
THE RESEARCH ON COMPREHENSIVE PERFORMANCE OF HC INJECTION SYSTEM USED IN DPF REGENERATION PROCESS	387
<i>Xueyan Teng ; Zhuang Niu ; Liang Li ; Liejiang Wei ; Chenfu Zhu ; Yinshui Liu</i>	
RESEARCH ON FAULT METHOD OF ELECTRO-HYDRAULIC SERVO VALVE BASED ON DEEP NEURAL NETWORK	393
<i>Gexin Chen ; Dong Yang ; Wei Gao ; Lijuan Chen ; Zhong Hua ; Chao Ai</i>	
RESEARCH ON ACTIVE DISTURBANCE REJECTION CONTROL OF HIGH-PRESSURE ELECTRO-PNEUMATIC SERVO VALVE BASED ON NSGA-II PARAMETER TUNING	398
<i>Chuan Wu ; Longlong Gao ; Song Liu ; Baoren Li</i>	
PREDICTION OF THE MULTISTAGE THROTTLE ORIFICE PLATE FLOW CHARACTERISTICS BASED ON COMPUTATIONAL FLUID DYNAMICS AND NEURAL NETWORK MODEL	406
<i>Tengfei Tang ; Longlong Gao ; Lihui Liao ; Yi Xi ; Baoren Li</i>	
INFLUENCE OF GEAR PARAMETERS ON FLOW CHARACTERISTICS OF LINEAR CONJUGATED INTERNAL GEAR PUMP	413
<i>Xuan Yuan ; Xu Rongwu ; Liao Jian</i>	
STUDY ON COMPOUND CONTROL OF HYDRAULIC MOTOR WITH SERVO VALVE AND SECONDARY REGULATION	420
<i>Yang Deng ; Yuanzhi Xu ; Zongxia Jiao ; Yaoping Shang</i>	
A NOVAL PROGNOSIS METHOD FOR CAVITATIONS OF SEAWATER HYDRAULIC PUMP	426
<i>Yongtao Yuan ; Xiaojun Zhang ; Yang Miao</i>	
PERFORMANCE INVESTIGATION OF A HYDRAULIC POWER TAKE-OFF SYSTEM FOR WAVE ENERGY CONVERSION	432
<i>Hong Gao ; Ruizhi Liang</i>	

MULTI-OBJECTIVE OPTIMIZATION OF STRUCTURAL PARAMETERS DESIGN OF VACUUM CYLINDER	437
<i>Xinjie Chen ; Gang Yang ; Jingmin Du ; Jingrui Chu ; Baoren Li</i>	
FLOW FORCES PREDICTION OF A SPRING-LOADED PRESSURE SAFETY VALVE WITH NUMERICAL MODELS	444
<i>Xiaomin Xiang ; Rongyu Wang ; Fengjie Zheng ; Chaoyong Zong ; Xueguan Song</i>	
STEADY-STATE FLOW FORCE CALCULATION OF THE FIRST STAGE IN A DEFLECTOR JET SERVO VALVE	452
<i>Yaobao Yin ; Shuanglu Li ; Xiaowei Zhang ; Jing Li</i>	
SIMULATION AND EXPERIMENTAL STUDY OF A NOVEL LOAD-SENSITIVE CONTROL VALVE FOR MINING DRILLS	459
<i>Jin Yu ; Yan Zhao ; Guoqin Huang</i>	
RESEARCH ON THE CONTROL SYSTEM OF HYDRAULIC FATIGUE MACHINE	466
<i>Zhang Bing ; Jiang Ziliang ; Chen Jian ; Qian Pengfei ; Xie Fangwei ; Wang Cuntang</i>	
STRUCTURAL DESIGN OF A CROSS WOBBLE PLATE DRIVING AXIAL PISTON PUMP BASED ON ADAMS AND AMESIM CO-SIMULATION	470
<i>Qian Jian-Yong ; Zhang Jun-Hui ; Zhang Hun-Yang ; Xia Shi-Qi ; Xu Bing ; Yue Yi-Ming</i>	
GENERATION LAW AND ANALYSIS OF SOLITARY WAVES CONTROLLED BY ELECTRO-HYDRAULIC CONTROL SYSTEM	478
<i>Jiafei Zheng ; Yi Liu ; Xiaowu Jiang ; Heng Jin ; Fangping Huang</i>	
STRUCTURE OPTIMIZATION FOR PASSAGES IN HYDRAULIC MANIFOLDS USING METAL ADDITIVE MANUFACTURING TECHNOLOGY	485
<i>Gan Liu ; Junhui Zhang ; Bing Xu</i>	
DESIGN, MODELING AND SIMULATION OF 100T HEAVY TOWING SYSTEM PASSIVE HEAVE COMPENSATOR	493
<i>Li Shizhen ; Yan Fei ; Liu Yanjun</i>	
APPLICATION DESIGN OF ALL-WATER DRIVEN OPERATING SYSTEM IN DEEP-SEA SUBMERSIBLE VEHICLES	500
<i>Huifeng Jiao ; Kewang Xu ; Jia Guo ; Lindan Zhang ; Haolong Hu</i>	
DESIGN OF THE GLUE CONVEYING SYSTEM FOR POWDER-PAVED 3D PRINTER	507
<i>Xu Huang ; Hong Zhao</i>	
DYNAMIC SURFACE CONTROL OF THE SINGLE-ROD PNEUMATIC ACTUATOR WITH DISTURBANCE REJECTION	513
<i>Deyuan Meng ; Haiyun Zhang ; Chaoquan Tang ; Qingyang Li ; Aimin Li ; Fei Chen</i>	
DESIGN AND EXPERIMENTS OF A NOVEL LINEAR PUMP FOR FLUID DELIVERY APPLICATIONS REQUIRING LOW FLOW PULSATION DRIVEN BY LINEAR OSCILLATING MOTOR	520
<i>Zimeng Wang ; Zongxia Jiao</i>	
RESEARCH AND ANALYSIS OF HIGH SPEED ON-OFF VALVE BASED ON PRESSURE PULSATION OF VALVE PORT	526
<i>Long Xu ; Liejiang Wei ; Li Wang ; Yinshui Liu ; Zhuang Niu</i>	
TRANSITION PROCESS CONTROL OF PNEUMATIC SERVO WELDING GUN BASED ON PRESSURE FEEDBACK AND POSITION BACKSTEPPING STRATEGY	540
<i>Shaoning Wang ; Tao Wang ; Ling Zhao ; Bo Wang</i>	
FLOW FIELD ANALYSIS OF SMALL HYDROPOWER GENERATING DEVICE WITH IMPELLER INSTALLED	546
<i>Zhang Jin ; Lv Ruiqi ; Rao Decai ; Qiu Xiaogang ; Kong Xiangdong</i>	
SYSTEM DESIGN AND PERFORMANCE STUDY OF ENERGY RECOVERY MECHANISM DURING HUMAN WALKING	552
<i>Li Chenjing ; Shi Hu ; Min Chaoqing</i>	
SYNCHRONIZATION CONTROL BASED ON DISTURBANCE OBSERVER FOR MULTI-HYDRAULIC PUMP-CONTROLLED MOTOR SYSTEM	557
<i>Zhang Xiaofu ; Shi Guanglin</i>	
IMPROVED DEVIATION COUPLING SYNCHRONOUS CONTROL BASED ON ADAPTIVE FUZZY PID	567
<i>Qi Li ; Chaofan Yang ; Huaibing Li ; Meng Zhang ; Peng Liu ; Xiangli Cheng ; Peng Guo</i>	
DYNAMIC PERFORMANCE ANALYSIS OF A PILOT OPERATED SOLENOID VALVE IN A DIVERT ENGINE FOR SPACECRAFTS	575
<i>Fan Xufeng ; Guan Changbin ; Wang Zhenxing</i>	
TORQUE FLUCTUATION IN HYDRAULIC TORQUE CONVERTER	579
<i>Zhifang Ke ; Wei Wei ; Qingdong Yan ; Cheng Liu</i>	

FLOW DYNAMIC ANALYSIS INSIDE A SLEEVE REGULATING VALVE WITH DIFFERENT VALVE CORE SHAPES	592
<i>Jia-Yi Wu ; Jin-Yuan Qian ; Cong-Wei Hou ; Zhi-Jiang Jin</i>	
STUDY ON HYDROSTATIC DRIVE TECHNOLOGY OF RAIL VEHICLE	613
<i>Wei Wang ; Dapeng Yang ; Zhihua Zheng ; Dezhi Li</i>	
DESIGN AND SIMULATION OF HIGH-FLOW HIGH-SPEED ON-OFF VALVE DRIVEN BY PIEZOELECTRIC	617
<i>Juntao Yu ; Zongxia Jiao ; Shuai Wu</i>	
RESEARCH ON ACTIVE DISTURBANCE REJECTION CONTROL METHOD FOR ELECTRO-HYDRAULIC SERVO LOADING SYSTEM WITH CONSIDERING CLEARANCE DISTURBANCE	624
<i>Qiang Chen ; Fang Yang ; Dan-Dan Liu ; Yu-Jun Xue</i>	
ANALYSIS OF DYNAMIC CHARACTERISTIC COEFFICIENT OF KEY FRICTION PAIRS OF SEAWATER PISTON PUMP	630
<i>Ming Guo ; Songlin Nie ; Fanglong Yin</i>	
RESEARCH ON DISORDERED INPUT CONSTANT SPEED OUTPUT CONTROL OF HYDROSTATIC-DRIVEN POWER GENERATION SYSTEM	639
<i>Su Wenbin ; Han Xupeng ; Zheng Yanni ; Zhao Hang ; Naeem Faiz Zhao Guisheng ; Wang Chaohui</i>	
A NEW LIGHT WEIGHT AND HIGH RELIABILITY THRUST VECTOR CONTROL SYSTEM BASED ON LIQUID OXYGEN KEROSENE ENGINE FOR THE LAUNCH VEHICLE	649
<i>Zhongliang Zhang ; Binfeng Teng ; Congyang Zuo ; Tong Chen ; Yong Li ; Wending Li</i>	
THE MICRO-SCALE FLOW SIMULATION OF A HYDRO-PNEUMATIC BUFFER FOR LAUNCH VEHICLE LANDING LEGS	655
<i>Hongpeng Ma ; Shoujun Zhao</i>	
STUDY OF A NOVEL AXIAL PISTON PUMP WITH ADJUSTABLE TILTING PISTON	661
<i>Wang Haiji ; Shi Guanglin</i>	
TEMPERATURE CHARACTERISTICS OF THE VALVE-CONTROLLED SHOCK ABSORBER	666
<i>Jinxin Cao ; Fangwei Xie ; Erming Ding ; Xinxing Zhang ; Pengfei Qian ; Kewei He</i>	
APPLICATION OF HYDRAULIC SYSTEM BASED ON VARIABLE DISPLACEMENT MOTOR AND HYDRAULIC CLUTCH IN UNDERWATER WINCH	671
<i>Jun Han ; Lang Gu ; Xiaohan Hu</i>	
DAMPING ATTENUATION CHARACTERISTICS OF THE VALVE-CONTROLLED SHOCK ABSORBER	676
<i>Kuaaidi Wan ; Fangwei Xie ; Erming Ding ; Jinxin Cao ; Pengfei Qian ; Kewei He</i>	
THEORETICAL RESEARCH ON TRANSMISSION CHARACTERISTICS OF HIGH POWER HYDRO-VISCOUS CLUTCH	681
<i>Chengxiang Zhao ; Fangwei Xie ; Jie Zhu ; Xinxing Zhang ; Yun Wang ; Kewei He</i>	
EXPERIMENTAL STUDY ON TRANSMISSION EFFICIENCY OF HYDRO-VISCOUS CLUTCH	686
<i>Junyu Sun ; Fangwei Xie ; Jie Zhu ; Xinjian Guo ; Van Xo Nguyen ; Yun Wang</i>	
MULTI-OBJECTIVE OPTIMIZATION DESIGN METHOD FOR VALVE PLATE STRUCTURE OF MICRO PISTON PUMP	692
<i>Liu Song ; Wu Chuan ; Gao Longlong ; Liao Lihui ; Li Baoren</i>	
RESEARCH ON PARAMETER INFLUENCE OF WAVE ENERGY CONVERTER BASED ON OPTIMAL DAMPING	700
<i>Qingjun Yang ; Yudong Liu ; Changhai Liu ; Gang Bao ; Rui Zhu ; Jie Chen</i>	
DEVELOPMENT OF AN INTELLIGENT DIGITAL MONITORING AND BIOFEEDBACK SYSTEM FOR INTERMITTENT PNEUMATIC COMPRESSION THERAPY DEVICE	709
<i>Shumi Zhao ; Rong Liu ; Dong Guan</i>	
CALCULATION AND ANALYSIS OF HEAT LOSS OF HIGH-SPEED AXIAL PISTON HYDRAULIC MOTOR PUMP	714
<i>Dianrong Gao ; Zongyi Zhang ; Yanan Sun ; Yan Zhang</i>	
ANALYSIS OF NOISE REDUCTION OF VALVE-CONTROLLED HYDRAULIC SYSTEM FOR ACCUMULATOR FILLING	722
<i>Duo-Xiang Xu ; Ying-Hui Sun ; Yin-Shui Liu ; Lie-Jiang Wei</i>	
STUDY ON THE INFLUENCE OF SPEED ON THE CYLINDER BLOCK OVERTURNING PROCESS OF AEROSPACE BENT-AXIS PISTON PUMP	730
<i>Jiang Jihai ; Du Boran ; Zhang Biao ; Hu Zhidong</i>	
RESEARCH ON SOFT-START CHARACTERISTICS OF HYDRO-VISCOUS DRIVE FOR SCRAPER CONVEYOR UNDER DIFFERENT START-UP CONDITIONS	747
<i>Long Li ; Hong-Wei Cui ; Zi-Sheng Lian ; Qi-Liang Wang ; Fei Gao ; Qiang Liu</i>	

DYNAMIC SIMULATION RESEARCH ON CAVITATION IN INTERNAL MULTI-CONNECTED VOLUMES OF GEAR PUMP	757
<i>Ming-Xue Li ; Guo-Lai Yang ; Gui-Xiang Bai</i>	
A HIGHLY INTEGRATED HYDRAULIC-ELECTRIC-MOTORS-PUMP ASSEMBLY FOR LAUNCH VEHICLES	765
<i>Keqin Chen ; Yingxin Zhao ; Hong Liu ; Xiaohong Zhang</i>	
A NOVEL HIGH ENERGY EFFICIENCY ELECTRONIC CONTROL INDEPENDENT VARIABLE SPEED CLOSED CIRCUIT STEERING SYSTEM FOR WHEEL LOADER	771
<i>Wang Xiangyu ; Quan Long ; Yang Jing ; Feng Jiangjiang ; Zhang Xiaogang</i>	
NUMERICAL RESEARCH OF CAVITATION SURGE IN A VALVE - CYLINDER CONTROL SYSTEM	780
<i>Yaobao Yin ; Shuaihu Xie ; Liang Lu</i>	
THROTTLE CHARACTERISTICS OF ADS VALVE FOR SHOCK ABSORBER	787
<i>Jun Ke ; Fangwei Xie ; Erming Ding ; Xinxing Zhang ; Bing Zhang ; Kewei He</i>	
MODELING AND ANALYSIS OF SOFT MANIPULATOR CONSIDERING COUPLING EFFECT BETWEEN ACTUATORS	792
<i>Yinglong Chen ; Qiang Guo ; Jiaoyi Hou ; Zengmeng Zhang ; Yongjun Gong</i>	
THE DAMPING ALGORITHM AND DESIGN OF VISCOUS DAMPER	799
<i>Ou Peiwei ; Min Wei ; Wang Dong</i>	
SIMULATION RESEARCH ON OPERATION CHARACTERISTICS OF THREE-CHAMBER CYLINDER DRIVING LOADER ARM BASED ON HYDRAULIC-GAS BALANCING	807
<i>Feng Jiang-Jiang ; Wang Xiang-Yu ; Yang Jin ; Quan Long</i>	
THE MODELING AND VISUAL CONTROL SIMULATION OF ARTICULATED SERPENTINE MANIPULATOR	812
<i>Haibo Xie ; Shusen Li ; Huayong Yang</i>	
ANALYSIS ON STIFFNESS OF ARMATURE ASSEMBLY OF JET PIPE SERVO VALVE	818
<i>Yaobao Yin ; Zhiheng Zhang ; Changming Li ; Shuanglu Li ; Jing Li</i>	
MECHANISM ANALYSIS OF THE SECONDARY JET OF JET DEFLECTOR SERVO VALVE	826
<i>Hao Yan ; Qiyuan Mao ; Yukai Ren ; Lei Yao</i>	
THE CABLE-DRIVEN PARALLEL-HELIX-ACTUATOR: DESIGN, MODELING, AND SIMULATION	833
<i>Fei Lu ; Zhi-Zhong Tong ; Hong-Zhou Jiang ; Kun Hou</i>	
THE POSITION CONTROL OF MACHINE TOOL BASED ON FUZZY ADAPTIVE PID CONTROL	842
<i>Liang Lu ; Hong Zhao ; Peng Zhang</i>	
NEW METHOD OF TWIN-VALVE INDEPENDENTLY CONTROLLED ELECTRO-HYDRAULIC VIBRATION	848
<i>Wang Tao ; Liu Yi ; Gao Rujun ; Chen Dexin ; Huang Fangping</i>	
DEVELOPMENT OF A VARIABLE BUOYANCY SYSTEM FOR THE LONG TERM STATION-KEEPING PROFILE OBSERVING AUV	858
<i>Yuan Yin ; Tie Jun Liu ; Hui Xi Xu ; Zhi-Bin Jiang ; Kai Shi</i>	
CHARACTERISTIC ANALYSIS AND EXPERIMENTAL STUDY ON HIGH PRECISION MICRO FLOW GAS PRESSURE REGULATOR	866
<i>Zhaoli Wang ; Jixia Xia ; Changbin Guan ; Xinhe Song ; Huanchun Wang ; Liwei Zhao</i>	
DESIGN AND APPLICATION ON SEALING OF HYDRAULIC LOCK BASED ON SERVO MECHANISM	871
<i>Yu Sancheng ; Li Wending ; Li Yong ; Teng Binfeng ; Zuo Congyang</i>	
NUMERICAL RESEARCH ON THE CHARACTERISTICS OF VARIABLE ANNULAR GAP CUSHIONING FOR HIGH SPEED HYDRAULIC CYLINDER	876
<i>Fangli Lou ; Songlin Nie ; Fanglong Yin ; Guotao Jia ; Anbin Xu ; Zhen Hu</i>	
OPTIMIZATION DESIGN AND PRESSURE REGULATION METHOD OF THE ULTRA-LARGE FLOW ACCUMULATOR GROUP FOR MULTIPLE FUNCTION LOADING SYSTEM	883
<i>Zhang Yanyan ; Yang Zhidong ; Han Junwei ; Cong Dacheng</i>	
ELECTRO-HYDRAULIC SERVO SYSTEM MODELING AND LAUNCH VEHICLE ENGINE STRUCTURAL VIBRATION ANALYSIS BASED ON TRANSFER PATH METHOD	891
<i>Congyang Zuo ; Tong Chen ; Yong Li ; Binfeng Teng ; Wending Li</i>	
MATHEMATICAL MODEL OF RADIAL MATCHING CLEARANCE OF SLIDE VALVE PAIR UNDER LARGE TEMPERATURE RANGE ENVIRONMENT	897
<i>Yin Yaobao ; He Chengpeng ; Li Changming ; Yuan Jiayang ; Xie Shuaihu</i>	
SIMULATION AND EXPERIMENTAL STUDY OF COMPOSITE CAVITATION CLEANER	905
<i>Lu-Ming Shi ; Wen-Qi Ma ; Dong-Qi Chen ; Hong-Yi Sun</i>	

DESIGN AND PERFORMANCE ANALYSIS OF ISOLATION VALVE GROUP FOR LIQUID GAS STORAGE DEVICE	910
<i>Yanting Zhang ; Shuai Chen ; Zhendong Liu ; Hao Zhang ; Mingyu Liu ; Jing Wang</i>	
ANALYSIS ON STIFFNESS AND FRICTIONAL EFFECT OF WATER HYDRAULIC ARTIFICIAL MUSCLE BY PSEUDO-STATIC ISOBARIC EXPERIMENTS	918
<i>Jiaoyi Hou ; Peipei Liu ; Jinkai Che ; Zengmeng Zhang ; Yongjun Gong</i>	
MOTION CONTROL OF DUAL ELECTRO-HYDRAULIC SHAKING TABLES SYSTEM	926
<i>Shen Rutao ; Xu Xianzhuang ; Guan Guangfeng ; Xiong Wei ; Wang Haitao</i>	
RESEARCH ON ATTITUDE OF ROTOR OF HIGH-SPEED MOTORIZED SPINDLE BASED ON FLUID-STRUCTURE INTERACTION.....	931
<i>Wei Li ; Wen-Qi Ma ; Xi-Qiang Qiu</i>	
NUMERICAL SIMULATION OF SIMPLIFIED CAVITATION JET CLEANER WITH UNSTEADY INLET PRESSURE	937
<i>Yu-Ting Feng ; Wen-Qi Ma ; Hong-Yi Sun</i>	
PROPULSION MODULE DESIGN AND ANALYSIS FOR A HYBRID DRIVEN UNDERWATER GLIDER	943
<i>Jianxing Zhang ; Baoren Li ; Gang Yang</i>	
AN ELECTRO-HYDRAULIC SYSTEM ON ANTI-STICKING FOR THE DRILLING RIG UNDERGROUND COAL MINE	951
<i>Dongmin Li ; Mengquan Shang ; Guofang Ma</i>	
TIME-DOMAIN SIMULATION OF A COMPOSITE ELECTRO-HYDRAULIC HEAVE COMPENSATION SYSTEM FOR THE UNDERWATER TETHERED PLATFORM.....	957
<i>Weicai Quan ; Buyan Wan ; Qingqing Chang ; Jun Gong</i>	
DESIGN OF MOTION SIMULATION EXPERIMENT DEVICE FOR SUBMARINE IN-SITU STRATIFIED ACOUSTIC MEASUREMENT AND SAMPLING UNIT	965
<i>Xiao Tibing ; Zou Dapeng ; Xu Bin ; Wang Boyang</i>	
MOTION CONTROL OF DUAL ELECTROHYDRAULIC SHAKING TABLES SYSTEM	970
<i>Shen Rutao ; Xu Xianzhuang ; Guan Guangfeng ; Xiong Wei ; Wang Haitao</i>	
SIMULATION ANALYSIS OF DYNAMIC CHARACTERISTICS AND INFLUENCING FACTORS OF HYDRAULIC WORK SUPPORT BASED ON AMESIM	981
<i>Zhai Fugang ; Yuan Long ; Sha Di ; Li Ruiyang ; Tian Wei</i>	
STUDY ON EDDY CURRENT AND TEMPERATURE RISE THERMAL DEFORMATION OF RADIAL MAGNETIC-FLUID DOUBLE SUSPENSION BEARINGS.....	987
<i>Zhe Wang ; Jisheng Zhao ; Zongyi Zhang ; Lanchun Xing ; Weidong Yan ; Jianhua Zhao</i>	
ANALYSIS OF THE FLOW FIELD CHARACTERISTICS AND BLADE WHEEL STRENGTH OF VARIABLE SPEED HYDRODYNAMIC COUPLING UNDER FULL FILLING CONDITION.....	999
<i>Zhang Jia-Hua ; Cui Hong-Wei ; Chang Zong-Xu ; Lian Zi-Sheng ; Lv Jian-Hu</i>	
SIMULATION STUDY ON LIQUID-END OF HIGH-PRESSURE AND LARGE-FLOW-RATE RECIPROCATING PUMP.....	1008
<i>Li Ran ; Wei Wenshu ; Liu Hao ; Zhu Yi ; Ji Hong ; Ye Jian ; Wang Wei ; Tian Chengjin ; He Zhenggang ; Liu Bo ; Wang Dalong ; Wu Mengyu ; Zhang Jiankai ; Gao Na</i>	
MEASURING AND CONTROL SYSTEM DESIGN FOR A NOVEL INTEGRATED ELECTRO MECHANICAL HYDROSTATIC ACTUATOR	1015
<i>Xudong Han ; Yongling Fu ; Liming Yu ; Xiaomin Wang ; Jun Xiao ; Jian Fu</i>	
EFFECTS OF NON-UNIFORM PISTONS DISTRIBUTION ON AXIAL PISTON PUMP FLOW RIPPLE.....	1021
<i>Fei Lv ; Xiaochen Huang ; Chunfeng Zhang ; Bing Xu</i>	
MULTI-OBJECTIVE OPTIMIZATION METHOD OF VALVE PLATE IN ELECTRO-HYDROSTATIC ACTUATOR PUMPS	1028
<i>Xiaochen Huang ; Fei Lv ; Leping Cai ; Junhui Zhang</i>	
OPTIMAL METERING MODE FOR IMPROVING TRANSFORM EFFICIENCY OF INDEPENDENT METERING SYSTEM	1035
<i>Kailei Liu ; Shaopeng Kang ; Rongsheng Liu</i>	
DESIGN OF SHIPBORNE CONSTANT PRESSURE PRESSURIZED TANK AND CONSTANT PRESSURE CONTROL	1042
<i>Xiaoxuan Fan ; Dingxuan Zhao ; Xiaolong Zhao ; Zhuxin Zhang ; Xiafei Chen ; Haoren Yang</i>	
DRIVING CONTROLLER FOR THE DIGITAL ON-OFF VALVE ARRAY.....	1049
<i>Zhenming Wu ; Shuai Wu ; Bo Pang ; Zongxia Jiao</i>	
THE RESEARCH ON MODELING AND SIMULATION OF WAVE ADAPTIVE VESSEL.....	1055
<i>Jiong Li ; Wei Xiong ; Hai-Tao Wang</i>	
STUDY ON MICRO LATCHING VALVE FOR SPACE FLOW CONTROL SYSTEM.....	1060
<i>Zhaoli Wang ; Changbin Guan ; Liang Zhang ; Huanchun Wang ; Hengjian Li ; Liwei Zhao</i>	

STANDING AIR BUBBLE-BASED FLOW REGULATION SYSTEM	1071
<i>Yidi Zhou ; Junjia Yan ; Bowen Li ; Jixiao Liu ; Tong Zhu ; Tiejun Li</i>	
EFFECTS OF PIEZOELECTRIC MATERIAL PROPERTIES OF THE PROPORTIONAL VALVE ON THE DYNAMIC PERFORMANCE OF A NITROGEN GAS MICRO-PROPULSION SYSTEM	1076
<i>Xudong Wang ; Guoxiu Li ; Jun Chen ; Zhaoli Wang ; Hongmeng Li</i>	
LEAKAGE CHARACTERISTICS ANALYSIS OF AN END FACE CLEARANCE COMPENSATED NON-CIRCULAR PLANETARY GEAR MOTOR	1082
<i>Wenbin Cao ; Yinshui Liu ; Zhuang Niu ; Li Wang</i>	
RESEARCH ON ANALOG-DIGITAL HYBRID CONTROLLER	1089
<i>Yan Qiang ; Chunli Zhao ; Liejiang Wei ; Xiaomei Luo ; Yaqtang Wang</i>	
EFFECT OF TEMPERATURE ON THE CYLINDER BLOCK/VALVE PLATE INTERFACE PERFORMANCE	1095
<i>Jihai Jiang ; Weipeng Yan</i>	
MAGNETIC CIRCUIT OF INTEGRATED RECOVERY ENERGY MAGNETORHEOLOGICAL DAMPER	1101
<i>Kou Farong ; Hao Shuaishuai ; Li Libo</i>	
STUDY ON STATIC CHARACTERISTICS OF NON-CONTACT AIR-BEARING BLOCK UNDER HIGHER ROTATION SPEED	1110
<i>Xi-Qiang Qiu ; Wen-Qi Ma ; Wei Li</i>	
HYDRAULIC ENERGY SAVING SYSTEM DESIGN IN SMART PLUGGING DEVICES	1117
<i>Hong Zhao ; Boxuan Gao ; Tingting Wu</i>	
THE DEVIATION ANALYSIS OF THE CYLINDRICAL FEET-END ON QUADRUPED WALKING ROBOT	1123
<i>Li Xun ; Tan Yongying ; Wang Fei ; Chen Liangliang ; Chen Shaoshan</i>	
A GRADUALLY DIVERGING-CONVERGING PIPE FOR THE REDUCTION OF AERODYNAMIC TORQUE OF BUTTERFLY VALVE PLATE	1130
<i>Jun Ruan ; Xiaohong Jin ; Ping Tao</i>	
AN ACTIVE COMPENSATOR FOR THE WEAKNESS OF SUPERFLUOUS FORCE IN THE ELECTRO-HYDRAULIC FORCE CONTROL SYSTEM WITH PERTURBATION OF DISPLACEMENT	1138
<i>Xiaohong Jin ; Hang Wei ; Mingwei Zhang ; Hao Huang</i>	
DISCUSSION ON ELECTRO-HYDRAULIC LOADING SYSTEM WITH NEGATIVE ELASTIC STIFFNESS BASED ON MIXED SENSITIVITY METHOD	1146
<i>Shuaijie Chen ; Xiaohong Jin ; Hao Huang</i>	
FLUCTUATION OF VOLUMETRIC DISPLACEMENT IN A DOUBLE CELL VANE MOTOR	1156
<i>Longfei He ; Xiaohong Jin ; Hao Huang ; Lin Jiang</i>	
DESIGN OF SPEED REGULATING DEVICE ON INTELLIGENT PIPELINE PLUGGING	1164
<i>Chenjian Wang ; Hong Zhao ; Tingting Wu</i>	
AN AIRCRAFT BRAKE SYSTEM MATCHING DESIGN BASED ON BRAKING EFFICIENCY	1168
<i>Gang Qiang ; Xiaochao Liu ; Yaoxing Shang ; Dong Sun ; Hongling Wang ; Zongxia Jiao ; Zhanguo Yang ; Zonggang Zhang ; Zhuangzhuang Wang</i>	
OPTIMIZATION ON PARALLEL CONTROL OF PID AND FUZZY IN CONSTANT-SPEED BRAKING PROCESS WITH A HYDRODYNAMIC RETARDER	1175
<i>Hongbin Mu ; Jiwei Fu ; Zhenyu Wu ; Yong Zhu ; Wei Wei ; Qingdong Yan</i>	
PRECISE DROPLET FORMATION IN A T-JUNCTION MICRO-DROPLET GENERATOR	1190
<i>Wen Zeng ; Hai Fu</i>	
SIMULATION AND VERIFICATION OF PRESSURE CHARACTERISTICS OF AIRCRAFT HYDRAULIC POWER SYSTEM	1197
<i>Heming Xia ; Bin Yang ; Yaoxing Shang ; Zongxia Jiao</i>	
A NONLINEAR BACKSTEPPING CONTROL BASED ON DISTURBANCE OBSERVER FOR ELECTRO-HYDRAULIC SERVO SYSTEM	1203
<i>Ying Zhang ; Dongdong Zhang ; Gang Shen</i>	
STUDY OF PRESSURE LOADING PRINCIPLE AND EXPERIMENTS OF A NEW TYPE OF DEPTH SIMULATOR	1209
<i>Zhang Biao ; Xu Li ; Wang Qixin ; Peng Sida</i>	
POSTURE CONTROL RESEARCH OF PNEUMATIC-HYDRAULIC UPPER LIMB REHABILITATION TRAINING SYSTEM	1215
<i>Wang Hongyan ; Peng Di ; Xiong Jingqi</i>	
DYNAMIC ANALYSIS ON ROTOR-BEARING SYSTEM OF LARGE VOLUTE PUMP	1226
<i>Dong Liu ; Ya-Ling Zhang ; Bing-Kun Zhun ; Zhun Wang</i>	

RESEARCH AND EXPERIMENTAL VERIFICATION OF CYLINDER ENERGY SAVING BASED ON AIR POWER.....	1231
<i>Fan Huang ; Gangyan Li ; Fan Yang ; Zihao Liu ; Weibai Li</i>	
HEAT TRANSFER EFFECTS ON THE DYNAMIC RESPONSES OF PNEUMATIC CYLINDER DRIVEN BY METER-OUT CIRCUIT.....	1242
<i>Fan Yang ; Gangyan Li ; Fan Huang</i>	
RESEARCH ON TEST METHOD OF DUAL SIDE WHEEL STEERING LOAD OF HEAVY VEHICLE BASED ON LABVIEW.....	1253
<i>Yuan-Rong Yang ; Sai Chen ; Yong-Yao He ; Heng Du ; Hui Huang</i>	
POSITION CONTROL OF ELECTRO-HYDRAULIC SERVO SYSTEM BASED ON DISTURBANCE OBSERVER AND ADAPTIVE BACKSTEPPING SLIDING MODE CONTROLLER.....	1261
<i>Haijie Jia ; Hui Xie ; Gang Shen</i>	
RELIABILITY ASSESSMENT BASED ON MULTIPLE SOURCES OF ACCELERATED TESTING DATA.....	1269
<i>Zhonghai Ma ; Shaoping Wang ; Haitao Liao ; Chao Zhang</i>	
NOVEL BIDIRECTIONAL LINEAR FORCE MOTOR FOR ELECTROHYDRAULIC PROPORTIONAL CONTROL VALVE.....	1276
<i>Yaobao Yin ; Wenkang Guo ; Yoshito Tanaka</i>	
THERMAL ERROR MODELLING AND COMPENSATION OF THE VOICE COIL MOTOR FORCE FOR HYDRAULIC VALVES.....	1282
<i>Junlin Luo ; Wei Wu</i>	
RESEARCH ON ENERGY SAVING OF QUADRUPED ROBOT HYDRAULIC SYSTEM— VARIABLE OIL SUPPLY PRESURE CONTROL SYSTEM.....	1299
<i>Qingjun Yang ; Rui Zhu ; Junlong Wang ; Jiaying Song ; Yudong Liu ; Chen Jie</i>	
THE ANALYSIS IN DYNAMIC CHARACTERISTICS FOR CHECK VALVE OF WATER MICRO-PISTON PUMP.....	1307
<i>Shen Yin ; Tuyuan Yin ; Ziyang Hu ; Xiaoqing Liu</i>	
DESIGN AND EXPERIMENTAL STUDY OF A NEW SCR UREA NOZZLE.....	1313
<i>Le Wang ; Huiyi Li ; Guoxian Niu ; Yinshui Liu ; Liang Li ; Chenfu Zhu</i>	
INTELLIGENT DESIGN PLATFORM FOR LARGE AIRCRAFT HYDRAULIC SYSTEM BASED ON AMESIM AND PYTHON.....	1322
<i>Qingtang Meng ; Shuai Wu ; Yaoxing Shang</i>	
SIMULATION AND OPTIMIZATION OF LARGE AIRCRAFT LANDING GEAR SYSTEM BASED ON AMESIM AND PYTHON SCRIPT.....	1328
<i>Qingtang Meng ; Shuai Wu ; Yaoxing Shang</i>	
MODEL ANALYSIS AND EXPERIMENTAL RESEARCH ON HYDRAULIC HIGH-SPEED IMPACT SYSTEM.....	1344
<i>Wang Shoukun ; Shi Mingxin ; Chen Zhihua</i>	
THE NOISE OF AN AXIS PISTON PUMP RESPECTIVELY WITH WATER AND OIL AS THE WORKING MEDIA: EXPERIMENTAL RESEARCH.....	1355
<i>Hao Pang ; Defa Wu ; Hengping Zhang ; Yipan Deng ; Yinshui Liu</i>	
VISUALIZATION EXPERIMENT OF SINGLE PARTICLE MOTION IN MODEL OF SPOOL VALVE CLEARANCE.....	1368
<i>Haili Yuan ; Hong Ji ; Jianjun Zhang ; Xinqiang Liu ; Qianpeng Chen ; Zhi Zheng ; Guoyi Peng</i>	
ANALYSIS OF MULTI-DEGREE OF FREEDOM MAGNETIC SUSPENSION MOTOR BASED ON FEM.....	1373
<i>Mengmeng Yu ; Liang Yan ; Liqin Zhang ; Christopher Gerada ; Suokui Chang</i>	
HYDRAULIC CHARACTERISTIC TEST BENCH CONSTRUCTION BASED ON RUSSIAN SPOOL VALVE MAINTENANCE.....	1378
<i>Gao Jiwen ; Yu Bo ; Guan Bowen ; Zhang Zhongjie</i>	
HUMAN-ROBOT COLLABORATION BY INTENTION RECOGNITION USING DEEP LSTM NEURAL NETWORK.....	1390
<i>Liang Yan ; Xiaoshan Gao ; Xiongjie Zhang ; Suokui Chang</i>	
CONTROL OF TWIN DIRECT-DRIVE MOTOR SYSTEM USING WIRE ROPE.....	1397
<i>Liang Yan ; Xiaoshan Gao ; Qian Yu ; Zongxia Jiao ; Suokui Chang</i>	
DESIGN AND EXPERIMENT OF THE MICRO BUOYANCY REGULATION SYSTEM.....	1403
<i>Jinlei Ba ; Shan Wu ; Hao Pang ; Defa Wu ; Yinshui Liu</i>	
DEVELOPMENT OF METERING ELECTROMAGNETIC PUMP CONTROL SYSTEM BASED ON BP NEURAL NETWORK.....	1419
<i>Yu Liao ; Yin-Shui Liu</i>	

RESEARCH ON KEY TECHNOLOGIES OF INTEGRATED PUMPING SUPPLY SYSTEM FOR COAL MINE UNDER PURE WATER MEDIUM CONDITION.....	1425
<i>Dong Li</i>	
BASIC REQUIREMENTS FOR PLUG-AND-PRODUCE OF 14.0 FLUID POWER SYSTEMS.....	1440
<i>Raphael Alt ; Katharina Schmitz</i>	
SIMULATION AND VALIDATION OF A PNEUMATIC PRESSURE BOOSTER BASED ON AN AUTOMOTIVE TURBOCHARGER.....	1449
<i>Fabian Guse ; Yannick Duensing ; Katharina Schmitz</i>	
STUDY OF SOLUTIONS TO IMPROVE PENDULUM WAVE POWER CONVERTER EFFICIENCY	1461
<i>Théotime Euverte ; Yin Yaobao</i>	
OPTIMIZATION COUPLED WITH MASS REDUCTION AND LIFECYCLE IMPROVEMENT OF AIR COMPRESSOR PISTON USING DESIGN OF EXPERIMENTS	1473
<i>N. G. W. A. Mboule ; Long-Long Gao ; Bao-Ren Li</i>	
DESIGN AND ANALYSIS OF THE DUAL-ROTOR GEROTOR PUMP WITH “K-FLOID” PROFILE	1483
<i>Jae-Cheon Lee ; Hao Liu</i>	
PROPORTIONAL PRESSURE REDUCING VALVE WITH A PIN FUNCTION FOR EXCAVATOR.....	1489
<i>So-Nam Yun ; Yang-Lae Lee ; Yoshito Tanaka ; Haroon A. Khan</i>	
DEFLECTOR OPTIMIZATION IN REDUCING CAVITATION INTENSITY IN THE PILOT STAGE OF DEFLECTOR JET SERVO-VALVE.....	1500
<i>Bijan Krishna Saha ; You Wu ; Songjing Li</i>	
ENERGY SAVING AND CONTROL OF A HYBRID HYDRAULIC EXCAVATOR SWING SYSTEM.....	1508
<i>Ying-Xiao Yu ; Kyoung Kwan Ahn</i>	
Author Index	