

# **4th Annual International Workshop on Materials Science and Engineering (IWMSE 2018)**

IOP Conference Series: Materials Science and Engineering  
Volume 381

Xi'an, China  
18 - 20 May 2018

Part 1 of 2

**Editors:**

**Osman Adiguzel  
Micha Polak**

ISBN: 978-1-5108-6940-0  
ISSN: 1757-8981

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2018) by the Institute of Physics  
All rights reserved. The material featured in this book is subject to  
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics  
at the address below.

Institute of Physics  
Dirac House, Temple Back  
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481  
Fax: 44 1 17 920 0979

[techtracking@iop.org](mailto:techtracking@iop.org)

**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  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## PART 1

### **CHAPTER 1: CORROSION, EROSION**

<b>THE COUNTERMEASURES OF LAND INTENSIVE UTILIZATION IN THE CONTEXT OF URBANIZATION – TAKING HANZHONG CITY AS AN EXAMPLE</b> .....	1
<i>Hui Kong</i>	
<b>TYPES OF STRUCTURAL SLOPE-BREAK ZONE AND CONTROLS FOR SAND BODIES AND HYDROCARBON OF HUHEHU DEPRESSION IN HAILAR BASIN</b> .....	6
<i>Yue Zou, He Liu, Junhui Li</i>	
<b>APPLICATION OF SEISMIC MULTI ATTRIBUTE FUSION TECHNOLOGY IN RESERVOIR REDUCTION OF BAER DEPRESSION</b> .....	11
<i>Haibo Wu, Junhui Li, He Liu, Yue Li, Yue Zou</i>	
<b>PROVENANCE CHARACTERISTICS OF NANTUN FORMATION IN BAER DEPRESSION AND ITS DOMINATE OF THE DEPOSITIONAL SYSTEM</b> .....	15
<i>Qi Wang, Hailei Sun, Haiyong Wang, Haiyan Wang, Pengkun Liu, Jia Qin, Baofeng Wu</i>	
<b>EFFECT OF SOLUTION TREATMENT ON MICROSTRUCTURE AND CORROSION RESISTANCE OF AZ91HP MAGNESIUM ALLOY</b> .....	19
<i>Lingling Guo, Jumei Zhang, Yang Zhang, Hui Cai</i>	
<b>RESEARCH ON CORROSION CONTROL FACTORS OF 2A02 ALUMINUM ALLOY OF DIFFERENT STATES BEFORE AND AFTER LASER-SHOCK-PROCESSING</b> .....	24
<i>Yongfeng Ren, Lingfeng Zhang, Yi Xiong, Fengzhang Ren</i>	
<b>CLASSIFICATION EVALUATION OF LOESS SLOPE STABILITY BASED ON THE COMBINATION WEIGHT OF GAME THEORY</b> .....	30
<i>Shuai Zhang, Nianqin Wang, Xiaoling Liu, Xiaopeng Chen</i>	
<b>THE EXPLORATION ON THE COLLECTION AND DISTRIBUTION DEVELOPMENT OF YANGSHAN PORT ON THE ENLIGHTENMENT OF EUROPEAN NAVIGATION DEVELOPMENT–IN THE LIGHT OF CHINA SHTZ POLICY</b> .....	36
<i>Zhile Tan</i>	
<b>EFFECT OF SOFT ROCK AMENDMENT ON SOIL HYDRAULIC PARAMETERS IN MU US SANDY LAND</b> .....	44
<i>Zenghui Sun</i>	
<b>EVALUATION OF MINE GEO-ENVIRONMENT QUALITY IN SHANGNAN COUNTRY BASED ON INFORMATION WEIGHT METHOD AND SET PAIR ANALYSIS</b> .....	49
<i>Nianqin Wang, Renwei Li</i>	
<b>MODEL RESEARCH AND APPLICATION OF LAND CONTRACT RIGHT TRANSFER PROBLEM</b> .....	56
<i>Hui Kong</i>	
<b>GREY RELATIONAL ANALYSIS OF GEOLOGICAL HAZARDS AND URBANIZATION CONSTRUCTION IN CHINA</b> .....	62
<i>Nianqin Wang, Kaichao Pu</i>	
<b>BIDIRECTIONAL AUTOMATIC CONTROL WATERPROOF GATE IN DAIZHUANG COAL MINE</b> .....	69
<i>Xinglin Wen, Huanzhao Sun, Yao Wang, Yalan Guo</i>	
<b>STUDY ON STANDARDS OF CERAMIC KNIVES IN CONTACT WITH FOODSTUFFS PART 1: MATERIAL AND STRUCTURE</b> .....	74
<i>Geping Bi, Wenniu Huang, Zhe Yang, Aijin Ma</i>	
<b>ELECTRONIC STRUCTURE AND OPTICAL PROPERTIES OF C-DOPED CA<sub>2</sub>SI</b> .....	81
<i>Yongrong Deng, Wanjun Yan, Chunhong Zhang, Xinmao Qin, Shiyun Zhou</i>	
<b>THE ELECTRONIC STRUCTURES AND MAGNETIC PROPERTIES IN TI-DOPED MGO</b> .....	87
<i>Yifei Chen, Qinggong Song, Huiyu Yan, Yanrui Guo</i>	
<b>SYNTHESIS AND ELECTROCHEMICAL PERFORMANCE OF NOVEL PEANUT-LIKE SBPO<sub>4</sub> AGGREGATES</b> .....	93
<i>Zhuojia Lin, Limei Xu, Yan Ling, Xiaoping Zhou, Lin Ma</i>	

<b>ENHANCED PHOTO-ELECTRIC RESPONSE OF P-N HETEROINTERFACE ON ORDERED ZNO NANOWIRES/POLYANILINE FILMS</b> .....	98
<i>Leilei Han, Yan Chen, Shan Fan, Wenhui Li, Chaoying Meng</i>	
<b>FABRICATION, MICROSTRUCTURE AND DIELECTRIC PROPERTIES OF <math>CAT_{1-x}(Ni_{1/3}Nb_{2/3})_xO_3</math> CERAMICS</b> .....	106
<i>Juan Xi, Guohua Chen</i>	
<b>EFFECT OF <math>CO_2O_3</math> ADDITION ON THE PROPERTIES OF ACID RESISTANCE OF POROUS SIC CERAMICS</b> .....	112
<i>Youming Dong, Xiangyun Deng, Chengshi Xu, Yanying Wang</i>	
<b>THERMODYNAMIC SIMULATION OF COMPONENTS' CONTENT IN <math>MOS_2</math> HYDROTHERMAL REACTION SYSTEM AND OXYGEN-DOPED <math>MOS_2</math> ONE-STEP HYDROTHERMAL PREPARATION METHOD</b> .....	119
<i>Guangtong Zhou, Hanjian Li, Xiangbin Zeng, Wenzhao Wang, Yishuo Hu, Shaoxiong Wu, Yang Zeng, Guanwei Chen, Zishen Guo, Yanhan Liu, Haoran Zhang</i>	

## **CHAPTER 2: CRACK RESISTANCE**

<b>INVESTIGATION OF A-<math>Fe_2O_3</math> IN OXIDE FILM OF ELECTROLYTIC IN-PROCESS DRESSING WHEEL AND ITS EFFECT ON POLISHING</b> .....	128
<i>Huali Zhang, Dmitrii V. Ardashev, Jicai Kuai</i>	
<b>DEGRADATION AND MECHANISM OF MECHANICAL PROPERTIES OF POLYIMIDE FILM IRRADIATED BY GAMMA RAY</b> .....	134
<i>Zicai Shen, Wei Dai, Yuming Liu, Yigang Ding, Yan Xia</i>	
<b>COMPRESSIVE STRENGTH AND BLOCK-MORTAR BOND OF A NEW-TYPE OF INSULATION HOLLOW BLOCK</b> .....	141
<i>Jian Wu, Guoliang Bai, Kewu Kang, Ya Liu, Peng Wang, Shaojun Fu</i>	
<b>SHAPE OPTIMIZATION OF PASSENGER VEHICLE WHEEL ON FATIGUE FAILURE</b> .....	149
<i>Kezhi Linghu, Baoliang Xiao, Dawei Zhang, Xiaolin Li, Fengqin Wang, Zhipeng Wang</i>	
<b>BASED ON GIS TECHNOLOGY, THE HEIHE RIVER DRAINAGE NETWORK IS EXTRACTED FROM SRTM-DEM DATA</b> .....	156
<i>Hui Kong</i>	
<b>MICRO-STRUCTURE AND MECHANICAL PROPERTIES OF (NBALS)<sub>N</sub> COATINGS BY ARC ION PLATING WITH DIFFERENT NEGATIVE BIAS</b> .....	162
<i>Quanying Jiang, Zhaoan Liu, Mingsheng Li</i>	
<b>KINETICS OF ALUMINUM MICRON POWDER OXIDATION IN HOT DISTILLED WATER AND PRODUCT MICROSTRUCTURE INVESTIGATION</b> .....	168
<i>A V Grigorenko, G N Ambaryan, G E Valyano, M S Vlaskin, A A Gromov, S V Zmanovsky</i>	
<b>THE FRACTURE ANALYSIS OF COLLINEAR PERIODIC CRACKS IN AN INFINITE PIEZOELECTRIC PLATE</b> .....	176
<i>Wenbin Zhao, Xuexia Zhang, Hailing Xie, Zhiyao Zhao, Yutong Guo</i>	
<b>ANALYSIS OF FACTORS AFFECTING THE COMPRESSIVE STRENGTH OF CEMENT STABILIZED GRAVEL</b> .....	184
<i>Miao Yu, Xiangguo Chang, Shasha Chen</i>	
<b>EFFECT OF ENHANCED ATOMIC DIFFUSION ON MICROSTRUCTURE EVOLUTION OF HETEROGENEOUS FRICTION WELDED JOINTS</b> .....	189
<i>Yanni Wei, Fu Sun</i>	

## **CHAPTER 3: BIOMATERIALS**

<b>USE OF DIFFERENT SOIL AMENDMENT TO IMPROVE SOIL ORGANIC MATTER AND CROP YIELD IN HOLLOW VILLAGE RECLAMATION</b> .....	196
<i>Ya Hu, Zenghui Sun</i>	
<b>BAMBOO CONDITIONS FOR PROCESSING BAMBOO FIBER WITH COMBING METHOD</b> .....	202
<i>Qiang Jin, Wei Zhang, Wenbin Yao</i>	
<b>REMEDICATION OF HEAVY METAL CONTAMINATION IN PADDY SOILS THROUGH SOIL LEACHING COMBINED WITH BIOSORPTION</b> .....	207
<i>Xiaojuan Li, Zhongmin Wang, Haijun Liang, Zhide Zhou, Guiyin Li</i>	
<b>STUDY ON THE ACTIVATION OF TRACE NUTRIENT ELEMENTS IN SOIL BY FREEZE-THAW ACTION</b> .....	214
<i>Lei Shi, Jinbao Liu, Hui Kong</i>	

<b>DECLINING POTENTIAL YIELD AND RAIN-FED YIELD OF CORN IN THE CORN BELT OF NORTHEASTERN CHINA DURING THE PAST THREE DECADES</b> .....	218
<i>Zhe Pang, Zenghui Sun</i>	
<b>SURFACE DOMAIN SPATIAL AUTOCORRELATION ANALYSIS OF PER UNIT AREA YIELD OF GRAIN</b> .....	224
<i>Hui Kong</i>	
<b>MICROPATTERNING OF PHOSPHOLIPID HYDROGEL LAYER ON THE SUBSTRATE FOR CONTROLLED CELL IMMOBILIZATION</b> .....	229
<i>R Zhang, Y Inoue, T Konno, K Ishihara</i>	
<b>CONVERSION OF FUNCTIONAL GROUP ON PTFE SURFACE BY ARGON PLASMA PRE-TREATMENT AND POLYDOPAMINE COATING</b> .....	235
<i>B Cheng, Y Inoue, K Ishihara</i>	
<b>HETEROMORPHIC POLYMER NANOPARTICLES IN RESPONSE TO ROTATIONAL MAGNETIC FIELDS FOR STIRRING INSIDE LIVING CELLS</b> .....	241
<i>Kazuhiko Ishihara, Kensuke Yoshie, Yuuki Inoue</i>	
<b>PREPARATION OF POLYELECTROLYTE BRUSH LAYER MODIFIED MAGNETIC PARTICLES FOR SEPARATION OF PROTEINS</b> .....	247
<i>J L Gong, Y Inoue, K Ishihara</i>	
<b>INCREASE IN IGG-BINDING CAPACITY OF RECOMBINANT PROTEIN A IMMOBILIZED ON HETEROFUNCTIONAL AMINO AND EPOXY AGAROSE</b> .....	253
<i>Xufeng Zhang, Ya Duan, Nanyu Han, Yunsong Wu</i>	
<b>OPTIMIZATION OF SODIUM CARBOXYMETHYL CELLULOSE PREPARATION FROM BAGASSE BY RESPONSE SURFACE METHODOLOGY</b> .....	261
<i>Hangyu Ye, Shuping Xu, Shuqi Wu, Weiqing Chen</i>	

#### **CHAPTER 4: COMPOSITES**

<b>EFFECT OF SOFT ROCK AMENDMENT ON SOIL MOISTURE AND WATER STORAGE IN MU US SANDY LAND</b> .....	267
<i>Zenghui Sun</i>	
<b>EFFECT OF GAS CONDITIONS ON FIELD-INDUCED DENATURATION BY MAGNETRONS SPUTTERING</b> .....	272
<i>Changan He, Qingguo Wang, Zhaoming Qu</i>	
<b>EXPERIMENTAL STUDY ON SHEAR MECHANICAL PROPERTIES OF WATER-SOLUBLE POLYURETHANE CONCRETE</b> .....	277
<i>Yan Zhang, Haobo Zhang, Yong Xia</i>	
<b>REAL-TIME MONITORING OF THE AIRCRAFT STRUCTURE BASED ON FIBER BRAGG GRATING</b> .....	284
<i>Gang Ji, Guixue Bian, Junxian Liu</i>	
<b>TOUGHNESS TEST OF WASTE TIRES STEEL FIBER REINFORCED CONCRETE</b> .....	289
<i>Lingling Gao</i>	
<b>EXPERIENCE IN CREATION AND EXPLOITATION OF ENERGETIC AND ENERGY-TECHNOLOGICAL PLANTS BASED ON HYDROTHERMAL OXIDATION OF ALUMINUM</b> .....	295
<i>A V Grigorenko, E I Shkolnikov, A Z Zhuk, M S Vlaskin</i>	
<b>DENSIFICATION OF POROUS ALUMINUM OXIDE POWDER BY PLASMA ARC TREATMENT</b> .....	301
<i>A V Grigorenko, M S Vlaskin</i>	
<b>OPTIMIZATION RESEARCH OF S-CO<sub>2</sub> COMPOUND BRAYTON CYCLE BASED ON GENETIC ALGORITHM</b> .....	307
<i>Yuanjian Dang, Lei Sun, Tao Lin, Yonghui Xie, Yongqing Wang</i>	
<b>A METHOD FOR VIBRATION OPTIMIZATION OF DAMPED BLADE PARAMETERS BY GOLDEN SECTION</b> .....	314
<i>Wei Zhao, Zhufeng Liu, Di Zhang, Yonghui Xie</i>	
<b>FABRICATION AND PERFORMANCE OF NANOCOMPOSITES CONTAINING ZIRCONIA PARTICLES</b> .....	321
<i>Long Zhang, Tingting Liu, Bo Wang, Purong Jia</i>	
<b>WEAR RESISTANCE OF TiB<sub>2</sub>-TiC SOLIDIFIED CERAMICS USING FOR CUTTING TOOLS FABRICATED THROUGH COMBUSTION SYNTHESIS IN THE HIGH-GRAVITY FIELD</b> .....	326
<i>Yujun Yin, Jing Zhang, Chuanzeng Pan, Bing Zhu</i>	

<b>SYNTHESIS MECHANISM OF TiB<sub>2</sub>-TiC-Ni COMPOSITES PRODUCED BY COMBUSTION REACTION OF Ti-Ni-B<sub>4</sub>C SYSTEM IN THE HIGH-GRAVITY FIELD .....</b>	<b>330</b>
<i>Jing Zhang, Chuanzeng Pan, Yifei Zhang, Zhaogang Cheng</i>	
<b>MICROSTRUCTURE AND PROPERTIES OF TiB<sub>2</sub>-TiC-SiC TERNARY PHASE CERAMICS PRODUCED BY HIGH-GRAVITY FIELD ACTIVATED SHS OF Ti-Si-B<sub>4</sub>C POWDERS .....</b>	<b>334</b>
<i>Chuanzeng Pan, Jing Zhang, Kai Han, Yujun Yin</i>	
<b>RADIO FREQUENCY SPUTTER DEPOSITION OF Ga AND F CO-DOPED ZnO THIN FILMS: EFFECTS OF SUBSTRATE TEMPERATURE .....</b>	<b>338</b>
<i>F H Wang, H S Jhuang, H W Liu, T K Kang</i>	
<b>HETEROGENEOUS NUCLEATION OF Au ON Al<sub>2</sub>O<sub>3</sub> SUBSTRATE UNDER THE IMPACT OF DROPLET SIZE AND COOLING RATE .....</b>	<b>344</b>
<i>Dingpu Wang, Wang Chang, Jie Sun, Cheng Sheng, Yunhu Zhang, Qijie Zhai</i>	
<b>STUDY ON PREPARATION AND PHOTOCATALYTIC PROPERTIES OF La-Cu<sub>2</sub>O/MGO COMPOSITES.....</b>	<b>352</b>
<i>Chunhua Yuan</i>	
<b>THE DESIGN METHOD OF AGGREGATE GRADATION OF GAC-20 MODIFIED ASPHALT MIXTURE BASED ON ROAD PERFORMANCE .....</b>	<b>359</b>
<i>Zhaohui Sun, Simeng Wang, Guangqiang Zhu</i>	
<b>STUDY ON DISTRIBUTION AND EVOLUTION OF DEFORMATION DOMAIN OF TAILOR ROLLED BLANK IN VARIABLE SPEED STAMPING PROCESS.....</b>	<b>367</b>
<i>Xiujuan Fu, Yuehong Yu, Zhen Zhou, Shuai Yang</i>	
<b>DESIGN OF A KIND OF WIRELESS DYNAMOMETER WITH LOW-POWER MODE USED IN WELL PUMPING UNITS .....</b>	<b>373</b>
<i>Dawei Pan, Yunhua Yu</i>	
<b>THE EFFECT OF PARAMETERS ON PI CONTROL FOR HYDRAULIC LOOPER CONTROL IN HOT ROLLING MILL .....</b>	<b>380</b>
<i>Wenyu Ma, Tao Li, Xibang Zhang, Jianxin Fan, Ye Yao, Jianwei Yang</i>	
<b>APPLICATION OF ROUNDNESS TEST ON TIRES BASED ON FIVE – POINT CUBIC SMOOTHING ALGORITHM .....</b>	<b>384</b>
<i>Peigang Li, Liming Zhou, Xianying Feng, Hongyin Gao, Rui Yao</i>	
<b>SIMULATION OF SOLENOID VALVE CHARACTERISTICS OF ELECTRONICALLY CONTROLLED FUEL SYSTEM FOR DIESEL ENGINE.....</b>	<b>390</b>
<i>Wenfu Sun, Xiaoqin Mo</i>	
<b>SYNTHESIS AND CHARACTERIZATION OF A NOVEL POLYOXOMETALATE GEL ELECTROLYTE.....</b>	<b>397</b>
<i>Limei Ai, Zeqing Wang, Fengwei He, Qingyin Wu</i>	
<b>ROAD PERFORMANCE PREDICTION MODEL OF AC-25 ASPHALT MIXTURE .....</b>	<b>402</b>
<i>Zhaohui Sun, Zhiqi Song, Guangqiang Zhu, Mengmeng Li</i>	
<b>STUDY ON THE PIN-LOAD DISTRIBUTION OF COMPOSITE JOINTS WITH PROTRUDING-HEAD BOLTS BASED ON CUMULATIVE DAMAGE.....</b>	<b>407</b>
<i>Xiangdong Liu, Huimei Zhang, Na Liu, Linjie Li</i>	
<b>PREPARATION AND DEGRADATION OF LYSOZYME-LOADED MICROSPHERES BASED ON POLYURETHANE.....</b>	<b>413</b>
<i>Dan Xue, Chunling Lin, Xiaoni Jiao, Baoqiang Wu</i>	
<b>EFFECT OF SOFT ROCK AMENDMENT ON SOIL CONE PENETRATION RESISTANCE AND BULK DENSITY IN MU US SANDY LAND .....</b>	<b>419</b>
<i>Zenghui Sun</i>	
<b>PREPARATION AND THERMAL CONDUCTIVITY OF ALUMINA/REDUCED GRAPHENE OXIDE COMPOSITE DISPERSED AQUEOUS NANOFLUIDS .....</b>	<b>423</b>
<i>Guoqiang Yang, Xiaofeng Yu, Qibai Wu, Haiyan Zhang, Wenwu Li, Yannan Qian</i>	
<b>PREPARATION AND CHARACTERIZATION OF ATO/PS BILAYER FILMS WITH SUPERIOR HYDROPHILICITY .....</b>	<b>428</b>
<i>Yang Li, Guoxun Zeng, Qibai Wu, Haiyan Zhang, Wenwu Li, Yannan Qian</i>	
<b>RESEARCH ON A NEW PARTICLE IMPACT DAMPER.....</b>	<b>434</b>
<i>Yanchen Du, Zhenxing Guan</i>	
<b>PREPARATION AND CHARACTERIZATION OF POLY (ε-LYSINE)-CHITOSAN CROSS-LINKED BY GLUTATALDEHYDE.....</b>	<b>440</b>
<i>Rui Wang, Yuxi Yang</i>	
<b>INVESTIGATIONS OF PARTICLE IMPACT DAMPER WITH ELASTIC SUPPORT .....</b>	<b>445</b>
<i>Yanchen Du, Gang Zhang</i>	

<b>RESEARCH ON BNNTS/EPOXY/SILICONE TERNARY COMPOSITE SYSTEMS FOR HIGH THERMAL CONDUCTIVITY .....</b>	<b>451</b>
<i>Hua Lei, Qian Shi, Jia Chen</i>	
<b>STUDY ON FEM MODEL OF STRETCHING RESISTANCE OF BAMBOO CULM INTEGRATED BAMBOO BUNDLES GLULAM .....</b>	<b>457</b>
<i>Zhangrong Zhao, Xiaomei Sui, Jiaji Zhang, Suting Wang</i>	
<b>MECHANICAL PERFORMANCE OF STEEL FIBER LATTICE REINFORCED CONCRETE STRUCTURE .....</b>	<b>464</b>
<i>Junfei Shen, Cuixiang Jiang</i>	
<b>ANALYSIS ON THE TRANSFER OF LAND CONTRACT RIGHT OF LIUQIAO TOWNSHIP, ZHAOHUA TOWN, GUANGYUAN CITY .....</b>	<b>469</b>
<i>Hui Kong</i>	
<b>OPTIMIZATION DESIGN AND PERFORMANCE EVALUATION OF COLD-MIXED AC-25 EMULSIFIED ASPHALT MIXTURE .....</b>	<b>474</b>
<i>Zhaohui Sun, Huaizhi Wang, Hanyang Cheng, Shuai Liu</i>	
<b>THE GRADATION TEST PREDICTION MODEL OF AC-25 ASPHALT MIXTURE.....</b>	<b>479</b>
<i>Zhaohui Sun, Simeng Wang, Gang Chen, Guangqiang Zhu</i>	
<b>DEVELOPMENT OF CEMENT-BASED RELIEF COATINGS.....</b>	<b>484</b>
<i>Guozhong Lu, Xiujuan Ding, Jiayang Zhang, Xuesong Zheng</i>	
<b>CHARACTERISTIC OF THE PIGMENTS EXTRACTED BY ALKALI FROM CHESTNUT SHELL.....</b>	<b>490</b>
<i>Sijia Chen, Lingyi Xu, Mengmeng Han, Jinghua Qi</i>	
<b>A THIN MAGNETIC-TYPE ABSORBER FOR WIDE INCIDENCE ANGLES AND BOTH POLARIZATIONS USING DIPOLE-ARRAYS .....</b>	<b>496</b>
<i>Shuai Wang, Cailin Ye, Linbo Zhang, Haiyan Xie, Difei Liang, Jianliang Xie</i>	
<b>OPTIMIZATION STUDY ON THE SAFETY OF SHORING SCAFFOLD UNDER BEAMS WITH COMPOSITE BEAMS.....</b>	<b>504</b>
<i>Bo Peng, Dong Wang</i>	
<b>DEVELOPMENT OF POLYMER MODIFIED CEMENT MORTARS FOR WATERPROOF .....</b>	<b>509</b>
<i>Guozhong Lu, Xiujuan Ding, Weixuan Zhao, Jiayang Zhang</i>	
<b>"COMPLETE TWIN" AND "THE TRANSGRANULAR TWIN LINE" OF COMMON STEELS .....</b>	<b>515</b>
<i>Long Wang, Guofei Cheng, Ting Liu, Junbao Yang, Ligang Ding, Yuexin Ma, Yuhua Tan</i>	
<b>EFFECT OF SOFT ROCK AMENDMENT ON CROP PERFORMANCE IN MU US SANDY LAND .....</b>	<b>523</b>
<i>Zenghui Sun</i>	
<b>MODELING AND SIMULATION OF AN ATOMIC FORCE MICROSCOPY SYSTEM IN THE Z DIRECTION .....</b>	<b>528</b>
<i>Yanyan Wang, Sen Wu</i>	
<b>STUDY ON APPLICATION OF COLD-MIXED ASPHALT MIXTURE IN FLEXIBLE PAVEMENT STRUCTURE.....</b>	<b>534</b>
<i>Zhaohui Sun, Guangpeng Zhang, Hanyang Cheng</i>	
<b>PREPARATION AND CHEMICAL ANALYSIS OF VOLATILE OIL IN FICUS HIRTA.....</b>	<b>539</b>
<i>Mengjiao Du, Jianping Chen, Chuqin Yu, Yi Yang, Shanbin Deng, Shuhua Wu, Chuzhen Chen</i>	
<b>STRENGTHENING MECHANISM OF 550MPA GRADE HIGH-DUCTILITY AUTOMOTIVE STRUCTURAL STEEL .....</b>	<b>544</b>
<i>Yajun Hui, Hui Pan, Baoliang Xiao, Qian Du, Xiaolin Li, Dawei Zhang</i>	
<b>PROGRESSIVE FAILURE ANALYSIS OF COMPOSITE LAMINATES INCLUDING SHEAR NONLINEARITY .....</b>	<b>551</b>
<i>Gang Wang, Tao Huang, Jia Purong</i>	
<b>INTERIOR RESEARCH OF RESISTANCE TO HIGH 220 DEGREES HEAT RESISTANCE DRILLING FLUID SYSTEM .....</b>	<b>557</b>
<i>Fulei Zhao, Yuxue Sun, Shizhong Ma, Binqi Yuan</i>	
<b>STRUCTURAL DAMAGE LOCALIZATION BASED ON CLOUD ALGORITHM AND IMPROVED MODAL STRAIN ENERGY DISSIPATION RATION INDEX.....</b>	<b>563</b>
<i>Huiyong Guo, Xinyu Zhou</i>	
<b>EFFECT OF CURING TEMPERATURE ON ACTIVITY INDEX OF SILICA FUME.....</b>	<b>570</b>
<i>Jinpeng Dai, Qicai Wang, Chao Xie, Zhigang Xie, Xianfu Tian, Xuyu Lou, Haizhen Guo</i>	
<b>RESEARCH ON KEY TECHNOLOGY OF ULTRA-LOW ENERGY CONSUMPTION BUILDINGS IN BEIJING .....</b>	<b>577</b>
<i>Guozhong Lu, Zhifang Yin, Xiujuan Din, Jiayang Zhang</i>	
<b>THE TRIBOLOGICAL PROPERTIES OF PP/EPDM/CACO<sub>3</sub> COMPOSITES MODIFIED BY HDPE.....</b>	<b>584</b>
<i>Song Yuan, Yi Li, Qiong Zhang, Jun Wen, Zhifeng Zhu</i>	

<b>ESTIMATION OF THE GIBBS FREE ENERGY FOR CALCIUM ALUMINATE SULPHATE HYDRATES USING ITERATIVE LEAST SQUARES REGRESSION METHOD</b> .....	589
<i>Xianxi Wu, Jun Lan, Hongshi Jiang</i>	
<b>PRICE ESTIMATION MODEL OF JADE BRACELET BASED ON RBF NEURAL NETWORK</b> .....	599
<i>Kun Deng, Pei He, Xiaxia Zhou, Wuyi Zhang</i>	

## PART 2

<b>STUDY OF PLASMON RESONANCE</b> .....	606
<i>Lijun Li, Jingya Liu, Ting Zhu</i>	
<b>EFFECT OF GRAPHENE OXIDE ON MECHANICAL AND ANTICORROSIVE PROPERTIES OF GRAPHENE OXIDE-URUSHIOL FORMALDEHYDE POLYMER COMPOSITE COATING</b> .....	611
<i>Lei Zhang, Haitang Wu, Ming Wei, Zeyu Zheng, Dinh Duy Vu, Thi Tuyet Xuan Bui, Xiaohua Huang</i>	
<b>THE MEASUREMENT METHOD RESEARCH OF THE AERODYNAMIC HEATING TEST FOR THE MICRO-ABLATIVE MATERIALS</b> .....	618
<i>Jinlong Peng, Jianqiang Tu, Dongbin Ou, Yudong Zhang</i>	
<b>PREPARATION AND DIELECTRIC CHARACTERIZATION OF CE-DOPED BaTiO<sub>3</sub> NANOTUBES</b> .....	625
<i>Yang Liu, Xiangyun Deng, Juntai Chen, Qiqi Zhou</i>	
<b>PARTICLE CRUSHING AND ENERGY DISSIPATION OF SATURATED BROKEN GANGUE UNDER COMPACTION</b> .....	632
<i>Bangyong Yu, Zhanqing Chen, Ling Yue, Shucui Pan</i>	
<b>CURING KINETICS OF CYANATE RESIN MODIFIED BY ESI</b> .....	640
<i>Qian Li, Xiangting Wang, Hongxia Yan</i>	
<b>FABRICATING SIC NANOWIRE BY VACUUM HEATING MULTILAYER GRAPHENE IN SILICATE REFRACTORY TUBE</b> .....	646
<i>Zengrong Hu, Yue Li, Yaohui Zhan, Pengcheng Huan, Xiaonan Wang, Changjun Chen</i>	
<b>MECHANICAL PROPERTY OF POLYIMIDE FILM IN SPACE RADIATION ENVIRONMENTS</b> .....	651
<i>Zicai Shen, Yuming Liu, Wei Dai</i>	
<b>PREPARATION AND PERFORMANCE STUDY ON SODALITE/MAGNETITE FROM TOURMALINE</b> .....	657
<i>Liang Xie, Ping Wang, Zhifeng Li, Hu Peng, Xiaoqing Li, Yi Zhou</i>	
<b>THE MICROSTRUCTURE AND MECHANICAL PROPERTIES OF NOVEL MQ-P-T PROCESSES PROPOSED TO DUCTILE IRON CASTING BALL WITH DIFFERENT COMPOSITION</b> .....	663
<i>Kuankuan Shan, Yu Huang, Hongpeng Li, Dashan Dong, Xiaoshuai Jia</i>	
<b>EXPERIMENTAL STUDY ON YARN PULLOUT TEST OF STF MODIFIED FABRIC</b> .....	671
<i>Yang Feng, Yu Ma, Zhenkun Lei, Saisai Cao, Qingchao Fang, Weikang Li, Ruixiang Bai, Shouhu Xuan</i>	
<b>STUDY ON THE EFFECT OF PATENTEE TYPES AND THE PATENT LOCATION ON THE PATENT MAINTENANCE TIME OF SIC CERAMICS</b> .....	677
<i>Leyu Liu, Yongzhong Qiao</i>	
<b>ANALYSIS OF THE PATENT INFORMATION OF SIC CERAMICS GRANTED BY CHINA</b> .....	681
<i>Yin Zhang, Yongzhong Qiao</i>	
<b>HIGH-FREQUENCY MAGNETIC PROPERTIES OF [Fe<sub>80</sub>Ni<sub>20</sub>-O/SiO<sub>2</sub>]<sub>N</sub> MULTILAYER FILM SERVED AS MAGNETIC CORE OF SOLENOID INDUCTOR</b> .....	685
<i>Laisen Wang, Jia Xie, Aimei Su, Xiaolong Liu, Lei Xu, Zhenwei Wang, Dongliang Peng</i>	
<b>THE ANALYSIS OF 91-WIRE STRAND TENSILE BEHAVIOR USING BEAM FINITE ELEMENT MODEL</b> .....	692
<i>Chunlei Yu, Shuai Yin, Binjie Dong, Yingchao Bao</i>	
<b>A NOVEL IMAGE PROCESSING ALGORITHM OF SAND-HOLE EXTRACTED FOR CASTING PARTS</b> .....	698
<i>Ting Lei, Jing Xu</i>	
<b>PREPARATION AND CHARACTERIZATION OF SUPERFINE CALCIUM CARBONATE IN-SITU MODIFICATION OF RAMIE FIBER</b> .....	703
<i>Zhen Li, Yunxia Wang, Zhengting Fu</i>	
<b>NUMERICAL STUDY ON THE ELASTIC PROPERTIES OF PERFORATED HOLLOW SPHERES STRUCTURE IN BODY-CENTERED CUBIC PATTERN</b> .....	710
<i>Meiling Dai, Fujun Yang, Xiaoyuan He</i>	



<b>CONSTRUCTION OF AMPHIPHILIC POLYOXOMETALATE SUPPORTED ON AMINO-FUNCTIONAL ORDERED MESO/MACROPOROUS <math>\text{SiO}_2</math> AND ITS CATALYTIC PERFORMANCE IN OXIDATIVE DESULFURIZATION</b> .....	716
<i>Yue Du, Jiaheng Lei, Zhenran Guo, Lina Zhou, Xiaodi Du</i>	
<b>EFFECTS OF M-EMS MAGNETIC FIELD INTENSITY ON MNS PRECIPITATE IN RAIL</b> .....	724
<i>Hongguang Li, Liang Chen, Tianming Chen</i>	
<b>HIGH TEMPERATURE FLOW CHARACTERISTICS IN NON-FULL OPENING STEAM GATE VALVE FOR THERMAL POWER PLANT</b> .....	731
<i>Long Yu, Shurong Yu</i>	
<b>EFFECT ANALYSIS OF DELAY TIME ON STRENGTH OF CEMENT STABILIZED MIXTURE</b> .....	737
<i>Yuguo Wang, Zhe Lu, Hao Dong, Liangdong Yang</i>	
<b>A STUDY ON THREE-DIMENSIONAL DAMAGE IN ENGINEERING MATERIALS</b> .....	745
<i>Lichun Bian</i>	
<b>ORGANIC FUNCTIONALIZED POROUS SILICA NANOPARTICLES FOR ADSORPTION OF CD (II) IONS FROM AQUEOUS SOLUTIONS</b> .....	750
<i>Jie Li, Lianxi Chen, Zhuoqiong Wen, Zeyin Zhang, Jie Luo, Cui Yu, Pengpeng Wang</i>	
<b>INFLUENCE OF INITIAL TEMPERATURE ON FLASHING EVAPORATION</b> .....	755
<i>Haoyu Wu, Jingping Peng, Longbin Yang, Xiaoming Li, Fengyun Chen, Weimin Liu</i>	
<b>THE EXPERIMENTAL STUDY OF RANKINE CYCLE IN OCEAN THERMAL ENERGY CONVERSION</b> .....	761
<i>Jingping Peng, Haoyu Wu, Yunzhen Ge, Fengyun Chen, Lei Liu, Weimin Liu</i>	
<b>PREPARATION OF VANADIUM OXIDE THIN FILMS UNDER DIFFERENT ANNEALING CONDITIONS</b> .....	766
<i>Changan He, Qingguo Wang, Zhaoming Qu</i>	
<b>RELIABILITY ANALYSIS OF A STEEL STRUCTURE WITH POTENTIALLY BRITTLE STEEL MEMBERS</b> .....	771
<i>Yanshuo Mai, Yi Chang, Linli Yi, Ying Chen</i>	
<b>A MULTI-FACTORS MODEL FOR PREDICTING THE RESISTANCE OF CHLORIDE PENETRATION OF CONCRETE WITH MINERAL ADMIXTURES</b> .....	776
<i>Yaqin Zhu, Zheng Chen, Yuhao Tang, Yi Jiang</i>	
<b>RELIABILITY ANALYSIS OF 10KV DISTRIBUTION NETWORK SUPPLY</b> .....	782
<i>Yayun Tian, Daotian Zhang, Huping Yang</i>	
<b>LOAD FORECASTING OF URBAN POWER GRID UNDER THE CONDITION OF SATURATION</b> .....	786
<i>Wei Jin, Haidong Zhan, Huping Yang</i>	
<b>DETECTION OF AMMONIA USING LOGARITHMIC-TRANSFORMED WAVELENGTH MODULATION SPECTRUM</b> .....	790
<i>Menglong Cong, Dandan Sun</i>	
<b>A NEW PRODUCT DEVELOPMENT CONCEPT SELECTION APPROACH BASED ON CUMULATIVE PROSPECT THEORY AND HYBRID-INFORMATION MADM</b> .....	796
<i>Yuliang Wang, Yanlai Li, Chengshuo Ying, Kwaisang Chin</i>	
<b>RESEARCH ON TECHNICAL CONDITION EVALUATION OF EQUIPMENTS BASED ON MATTER ELEMENT THEORY AND HIDDEN MARKOV MODEL</b> .....	803
<i>Junbao Geng, Sunqing Xu, Jianzhao Niu, Kejia Wei</i>	
<b>DESIGN AND IMPLEMENTATION OF TIBETAN ONLINE TRADING SYSTEM BASED ON IOS PLATFORM</b> .....	812
<i>Mengli Sun, Xiangzhen He, Liang Chen, Na Xu, Yajing Ma</i>	
<b>CAUSE ANALYSIS OF BOOSTER PUMP SHAFT CRACKING IN NUCLEAR POWER PLANT</b> .....	820
<i>Guodong Li, Tao Wang, Nan Li, Shaohua Lu</i>	
<b>DESIGN AND IMPLEMENTATION OF PWM GENERATOR BASED ON OMAP-L138</b> .....	826
<i>Xian Zhang, Taiguo Qu, Dong Yin, Yiwen Liu</i>	
<b>SENSOR INSTALLATION ERROR ANALYSIS AND CORRECTION IN VEHICLE LOAD DETECTION SYSTEM</b> .....	833
<i>Xinxin Qiao, Yiding Zhao</i>	
<b>DESIGN OF TEMPERATURE COMPENSATION SYSTEM FOR MEMS GYROSCOPES BASED ON STM32</b> .....	838
<i>Youqi Jiang, Yiding Zhao</i>	
<b>RESEARCH ON VECTOR CONTROL AND SUBDIVISION DRIVE TECHNOLOGY OF TWO-PHASE HYBRID STEPPER MOTOR BASED ON SVPWM</b> .....	845
<i>Xiaolin Hu, Yanrong Zhang, Yan Lu</i>	

<b>DESIGN AND RESEARCH ON A BIPED CLAMP AND PULL PIEZOELECTRIC LINEAR MOTOR BASED ON INCHWORM PRINCIPLE</b> .....	851
<i>Huixia Zhang, Weiqing Huang, Lu Han</i>	
<b>POSITION CONTROL FOR CLOSING PHASE OF ARD</b> .....	858
<i>Zhaowei Dong, Xia Zhao, Lihui Sun</i>	
<b>IMPROVED MODEL PREDICTIVE CONTROL STRATEGY FOR MODULAR MULTILEVEL CONVERTER</b> .....	864
<i>Yanhua Jiang, Lianyong Zhang</i>	
<b>A NEW METHOD TO ANALYZE THE ERROR-WIRING OF ELECTRIC ENERGY METERING DEVICE</b> .....	871
<i>Jia Li, Wanyu Xue, Li Gao, Bing Zhang, Min Zhou</i>	
<b>MULTILEVEL COORDINATE OPTIMIZATION OF CLOUD MANUFACTURING</b> .....	878
<i>Hui Wang, Yuantao Song, Run Zhang, Yijun Li</i>	
<b>DESIGN OF SCMOS CAMERA SYSTEM</b> .....	884
<i>Qiang Wu, Dingheng Qiao</i>	
<b>RESEARCH ON A NEW PRETREATMENT TECHNOLOGY FOR HIGH TEMPERATURE EXHAUST OF MOTOR VEHICLE</b> .....	892
<i>Guohua Liu, Yujun Zhang, Kai Zhang</i>	
<b>EMBEDDED EPICS CONTROL SYSTEM OF HIGHT VOLTAGE POWER SUPPLY FOR EXTRACTION DEFLECTOR ON HIRFL-CSR</b> .....	899
<i>Shi An, Youjin Yuan, Wei Zhang, Feng Yang, Dongsheng Zhao, Qiang Wang</i>	
<b>RESEARCH ON THE FLIGHT CONTROL STRATEGY OF A NEW CONCEPT FUEL-ELECTRIC HYBRID MULTI-ROTOR UAV</b> .....	904
<i>Xice Xu, Da Kong, Yang Lu</i>	
<b>DESIGN OF SRIO RECONSTRUCTION AND SWITCHING NETWORK ARCHITECTURE</b> .....	914
<i>Qiang Wu, Zijie Lin</i>	
<b>SENSORLESS CONTROL OF SPMSM USING IDENTIFICATION THEORY</b> .....	919
<i>Haijun Sun</i>	

## **CHAPTER 5: METALLIC ALLOYS, SENSORS AND SURFACES**

<b>PREPARATION OF CARBON DOTS BY PYROLYZING CARBOXYLATE AMMONIUM SALT AND ITS APPLICATION IN PROBING FERRIC IONS</b> .....	926
<i>Chen Nie, Hao Zhang, Ruifang Guan, Duxia Cao</i>	
<b>EFFECT OF AL CONTENT AND ANNEALING TEMPERATURE ON COLD WORKABILITY OF CUALMN ALLOYS</b> .....	932
<i>Yuqin Jiao, Hongxin Zhang, Tiezhu Zhang</i>	
<b>STUDY ON THE THERMAL CONTRACTION BEHAVIORS OF MG AND AL</b> .....	940
<i>Yi Meng, Yue Yang, Jian Sun, Leigang Cao, Jianzhong Cui</i>	
<b>STUDY ON THE TECHNOLOGY OF LASER-DRIVEN FLYER HYPERVELOCITY LAUNCH</b> .....	946
<i>Fu Dai, Zizheng Gong, Yan Cao, Jiyun Yang, Wenbing Zhang</i>	
<b>STUDY ON THE COLD STAMPING OF OIL SUMP TANK FOR THE THICKNESS AND SPRINGBACK</b> .....	955
<i>Wenyu Ma, Tao Li, Ye Yao, Shaobo Li, Xuebin Zheng, Hongya Zhu, Jianwei Yang</i>	
<b>INFLUENCE OF ULTRASONIC VIBRATION POWER ON THE WETTABILITY AND INTERFACIAL MICROSTRUCTURE OF SN2.5AG0.7CU0.1RE0.05NI SOLDER ALLOY ON CU SUBSTRATE</b> .....	960
<i>Di Zhao, Keke Zhang, Jianguo Cui, Chenxiang Yin</i>	
<b>MEASUREMENT AND ANALYSIS OF WIND-INDUCED VIBRATION RESPONSE OF THE OVERHEAD WORKING TRUCK</b> .....	967
<i>Hongqi Jiang, Shuncai Li</i>	
<b>FRictional RESISTANCES OF AMS5599 NICKEL-BASED ALLOY AT HIGH PRESSURE CONDITIONS</b> .....	973
<i>T Trzepiecinski, H G Lemu</i>	
<b>CUO NANOPLATE ARRAY SUPPORTED ON NI FOAM, A HIGHLY ACTIVE CATALYST IN THE DEGRADATION OF ROHDAMINE B WITH HYDROGEN PEROXIDE</b> .....	979
<i>Liling Li, Jinyun Liao, Hao Li</i>	
<b>EFFECT OF P-DOPING ON THE RUPTURE STRENGTH OF <math>\gamma</math>-NI/ <math>\gamma'</math>-NI<sub>3</sub>AL INTERFACES</b> .....	984
<i>Dong Tian, Yi Chen, Yuanqi Jiang, Zhou Yi, Ping Peng</i>	
<b>HOT DEFORMATION BEHAVIORS OF CU/AL LAMINATED COMPOSITES</b> .....	993
<i>Shuaiyang Liu, Aiqin Wang</i>	

<b>EFFECTS OF NICKEL PRECURSOR AND CALCINATION TEMPERATURE ON THE PERFORMANCE OF Ni/MgAl<sub>2</sub>O<sub>4</sub> CATALYSTS FOR SYNGAS PRODUCTION BY CO<sub>2</sub> REFORMING OF COKE OVEN GAS</b> .....	1000
<i>Huijie Zhou, Hongwei Cheng, Cheng Wu, Xionggang Lu</i>	
<b>RESIDUAL STRESS DISTRIBUTION AND MECHANICAL PROPERTIES OF TA15/BTI-6431S TITANIUM ALLOY WELDING JOINTS BY ULTRASONIC IMPACT TREATMENT</b> .....	1009
<i>Xiaoyun Song, Guanglu Qian, Mingyu Zhao, Wenjing Zhang, Wenjun Ye, Songxiao Hui</i>	
<b>EFFECT OF SOLUTION TREATMENT ON MICROSTRUCTURE AND SELECTED MECHANICAL PROPERTIES OF AN (α+β) TITANIUM ALLOY</b> .....	1015
<i>Wenjing Zhang, Xiaoyun Song, Songxiao Hui, Wenjun Ye, Yuwei Yang</i>	
<b>EFFECT OF COPPER ION CONCENTRATION ON MICROSTRUCTURE AND MECHANICAL PROPERTIES OF ELECTROLYTIC COPPER FOIL</b> .....	1021
<i>Yanfeng Li, Guojie Huang, Xiangqian Yin, Xi Chen, Xiuling Ma, Yongzhen Li, Endong Yao</i>	
<b>QUASI-STATIC AND DYNAMIC PROPERTIES OF Ti-3Al-2.5V TITANIUM ALLOY TUBES</b> .....	1027
<i>Rui Liu, Yang Li</i>	
<b>EXPLORING ON STEREO MORPHOLOGY AND HABIT PLANE OF MARTENSITE IN FERROUS ALLOY</b> .....	1032
<i>Long Wang, Guofei Cheng, Ting Liu, Junbao Yang, Mifang Deng, Hongbing Huang, Ligang Ding, Yuexin Ma, Yuhua Tan</i>	
<b>STUDY ON STANDARDS OF CERAMIC KNIVES IN CONTACT WITH FOODSTUFFS PART 2: PERFORMANCE REQUIREMENTS</b> .....	1040
<i>Geping Bi, Wenhua Tan, Zhe Yang, Aijin Ma</i>	
<b>STUDY ON CRACK PROPAGATION RATE OF 600MPa HIGH STRENGTH STEEL FOR MN-TI AND NB-V SYSTEM</b> .....	1048
<i>Xiaolin Li, Yang Cui, Baoliang Xiao, Zheng Cheng, Zhao Jin</i>	
<b>DETERMINATION OF VISCOELASTIC PROPERTIES OF HUMAN CAROTID ATHEROSCLEROTIC PLAQUE BY INVERSE BOUNDARY VALUE ANALYSIS</b> .....	1054
<i>Xiaochang Leng, Boran Zhou, Xiaomin Deng, Lindsey Davis, Michael A. Sutton, Tarek Shazly, Susan M. Lessner</i>	
<b>STUDY ON THE DETECTION OF THE CONTENT OF THE PHENYLALANINE BY RARE EARTH IONS FLUORESCENCE PROBE METHOD</b> .....	1060
<i>Bo Wang, Yuguang Lv, Shanshan Song, Yaxin Zhao, Ziran Zhou, Peng Lin</i>	
<b>THE RESEARCH OF REINFORCED CU-SICP/ZA40 AND CU-SICP/AZ91D METAL MATRIX COMPOSITES' MECHANISMS</b> .....	1066
<i>Ting Yu, Guihong Geng, Penghao Xue, Lei Zhang</i>	
<b>A REVIEW ON CORROSION RESISTANT OF CU-AL JOINTS</b> .....	1072
<i>Sen Huang, Weimin Long, Bin Huang, Sujuan Zhong, Li Bao</i>	
<b>HOT DEFORMATION BEHAVIOR AND DYNAMIC RECRYSTALLIZATION MODEL OF 6082 ALUMINUM ALLOY IN HIGH TEMPERATURE</b> .....	1077
<i>Weiwei Ren, Chunguo Xu, Xianglong Chen</i>	
<b>MULTIPHASE NUMERICAL SIMULATIONS OF BINARY ALLOY LAMELLAR EUTECTOID GROWTH</b> .....	1086
<i>Li Feng, Nini Lu, Yalong Gao, Guosheng An, Junhe Zhong</i>	
<b>EFFECT OF GD ON MICROSTRUCTURE AND FRACTURE BEHAVIOR OF AZ91 MAGNESIUM ALLOY</b> .....	1092
<i>Yao Li, Junjie Yang, Huiling Wang</i>	
<b>RESEARCH PROGRESS OF THE SIMULATION ON THE HOT EXTRUSION OF THE MAGNESIUM ALLOYS</b> .....	1099
<i>Mengjun Zhao, Hongming Cai, Zhilin Wu, Renshu Yuan</i>	
<b>HYDROSTATIC EXTRUSION EXPERIMENT ON AZ80 MAGNESIUM ALLOY TUBE-EXPANDING FORMING UNDER ULTRA-HIGH PRESSURE</b> .....	1107
<i>Zechen Fang, Hongming Cai, Renshu Yuan, Xinpeng Zhang, Zhilin Wu</i>	
<b>COBALT-FREE LI-RICH 0.1Li<sub>2</sub>MnO<sub>3</sub>•0.9LiNi<sub>0.56</sub>Mn<sub>0.44</sub>O<sub>2</sub> WITH HIGH PERFORMANCES AS CATHODE MATERIAL FOR LITHIUM-ION BATTERIES</b> .....	1113
<i>Shumei Dou, Fenyang Wei, Huiqin Li, Ping Li</i>	
<b>DESIGN OF AUTOMATIC PROGRAM CONTROL GAIN CIRCUIT FOR INFRARED GAS DETECTION</b> .....	1123
<i>Boqiang Fan, Yujun Zhang, Kai Zhang, Qixing Tang, Dongqi Yu</i>	
<b>LEAF ECR ION SOURCE CONTROL SYSTEM</b> .....	1129
<i>Xiaojun Liu, Wei Zhang, Shi An, Yuhui Guo, Jianjun Chang, Pengpeng Wang, Yuting Liu, Hongwei Zhao, Liangting Sun, Junqi Wu, Yun Chen</i>	

<b>CONTROL SYSTEM FOR SUPERCONDUCTING ELECTRON CYCLOTRON RESONANCE ION SOURCE WITH ADVANCED DESIGN IN LANZHOU II</b> .....	1134
<i>Jianjun Chang, Youjin Yuan, Wei Zhang, Shi An, Xiaojun Liu, Min Yue, Pengpeng Wang, Liang Ge, Junke Liu</i>	
<b>DECOUPLING EVOLUTIONARY PROGRAMMING FROM GIGABIT SWITCHES IN NEURAL NETWORKS</b> .....	1140
<i>Hangkun Ling</i>	
<b>THREE-PHASE INVERTER BASED ON STC8A8K CONTROLLER</b> .....	1146
<i>Xiuhua Wang</i>	
<b>PREDICTION OF GENERAL FLUID INTELLIGENCE USING CORTICAL MEASUREMENTS AND UNDERLYING GENETIC MECHANISMS</b> .....	1151
<i>Meifang Zhu, Bing Liu, Jin Li</i>	
<b>THE DESIGN OF LEAF MOTION CONTROL SYSTEM</b> .....	1157
<i>Yunjie Li, Yuhui Guo, Xing Fang, Jianchuan Zhang, Yuan Wei, Yanyu Wang, Liangting Sun</i>	
<b>MODELING AND SLIDING MODE CONTROL FOR CEMENT PARTICLE SIZE</b> .....	1162
<i>Lei Zhang, Zhugang Yuan, Qiang Zhang, Guang Lu</i>	
<b>UNINTERRUPTED POWER SUPPLY SYSTEM DESIGN OF DATA CENTER</b> .....	1171
<i>Qian Zhang, Qiao Jiang, Jianlong Wu</i>	
<b>CONTROL METHOD OF THE WEIGHT OF STEADY FLOW SILO BASED ON EXPERT CONTROL AND BANG-BANG CONTROL</b> .....	1175
<i>Guang Lu, Zhugang Yuan, Lei Zhang, Xianshen Du</i>	
<b>A PUMP BASED MICROFLUIDIC IMAGE PROCESSING SYSTEM FOR DROPLET DETECTION AND COUNTING</b> .....	1183
<i>Faisal Mehmood, Zeeshan Haider, Baoqun Yin</i>	
<b>A COUPLED INDUCTOR AND SWITCHED CAPACITOR NON-ISOLATED DC/DC CONVERTER</b> .....	1192
<i>Ming Qin, Zhenyu Han</i>	
<b>THE DESIGN AND SIMULATION OF FULL PNEUMATIC SUSPENSION LIFTING SYSTEM</b> .....	1200
<i>Shengguan Qu, Jiliang Lv, Rong Yin, Xiaoqiang Li</i>	
<b>A PATH PLANNING METHOD FOR CARRIER AIRCRAFT ON DECK COMBINING ARTIFICIAL EXPERIENCE AND INTELLIGENT SEARCH</b> .....	1208
<i>Xichao Su, Zhengyang Li, Jingyu Song, Liguang Wang</i>	
<b>RESEARCH OF DIGITAL IMAGE STABILIZATION ON AIRBORNE VIDEO</b> .....	1216
<i>Mingyuan Fan, Ziyuan Tong, Shoufeng Tang, Minming Tong, Bo Wang</i>	
<b>Author Index</b>	