

Table of Contents

Preface

Chapter 1: Micro and Nano Fabrication

Analysis of Fabrication Errors on Micro-Spring's Elastic Coefficient	
X. Shu, W.Z. Lou, Y. Zhao, M.R. Guo, Y. Fu and Y. Wang	3
Design and Fabrication of an Aerodynamic Micro-Air Journal Bearing Using Micro-Wire Electrical Discharge Machining	
Y.K. Wang, Z.Q. Zeng, Z.L. Wang and X.L. He	8
Fabrication and Characteristics of the Nano-Polysilicon Thin Film Transistors	
X.F. Zhao, D.Z. Wen, C.C. Zhuang, B. Han, Y. Li, J.Y. Cao and L. Li	13
Fabrication and Characterization of Tin Oxide Inverse Opal by Template Method	
J.Q. Wang, X.H. Wu, Y.Y. Wu, S.S. Yuan, Y.M. Xu, X.B. Chen and M. Zhang	18
Fabrication of Low Stress PECVD-SiNx Film in High Frequency Mode	
Z.G. Shang, D.L. Li and Z.Y. Wen	22
Fabrication of Sub-Micro Metal Tips for In-Plane Field Emission Research	
L.F. Wang, L. Han, J.Y. Tang, J. Song and Q.G. Huang	28
Fabrication of Super-Hydrophobic Surface on Stainless Steel Using Chemical Etching Method	
H.F. Zhang, X.W. Liu, M. Zhao, D.B. Wang and C.Z. Shi	33
Fabrication of the Nanoscale Flat-Bottomed and Lamellar Structures on HOPG Surface by STM-Based Electric Lithography	
Y. Yang and W.S. Zhao	45
Micro-Hole Drilled by EDM-ECM Combined Processing	
X.L. He, Y.K. Wang, Z.L. Wang and Z.Q. Zeng	52
Fabrication of ZnTiO₃ Nanofibers by Electrospinning	
R.L. Sang, J. Shao and L. Wang	57
Study on the Performance of Y-Branch Waveguide Modulator Affected by the Fabrication	
H.L. Liu, W. Wang, J.J. Wang, G.M. Sun, G. Huo and C.C. Zhou	62
A Novel Microelectrode Array Probe Integrated with Electrophysiology Reference Electrode for Neural Recording	
W.J. Wei, Y.L. Song, W.T. Shi, C.X. Liu, T.J. Jiang and X.X. Cai	67
Chromium Atomic Deposits under the Disturbance of Straight Edge Diffraction	
B.H. Zhu, J. Huang and W.T. Zhang	74
Controllable Synthesis of Single-Crystal Monolayer Graphene on Copper Foils by Low-Pressure Chemical Vapor Deposition	
L. Guo, X.K. Chen, L.X. Wang, S.Z. Cao, X.H. Bai, C. Zhang, Y.M. He and H. Gao	79
Controlled Synthesis of Surface-Clean Monolayer Graphene	
X.S. Wang, J.J. Li, Q. Zhong, Y. Zhong and M.K. Zhao	85
Cu (II) as a Catalyst for Hydrogen Peroxide System Abrasive-Free Polishing on Hard Disk Substrate	
Z.J. Wang, H. Lei, W.T. Zhang and R. Zhao	91
Evaluation Methods on Adhesion Property between SU-8 Photoresist and Metal Substrate	
X.L. Zhang, L.Q. Du and A.A. Wang	96
Fabrication and Properties of a New Type Micro Super-Capacitor	
Y. Yin, X.F. Wang, W.S. Lu, X.Y. Li and Z. You	102
FEM Simulation of the Thermo-Mechanical Behavior of TSV 3D MEMS Structure	
X. Gong, J. Chen and J.H. Lee	108
Numerical Analysis of Molding Process for Roll Imprinting Based on ABAQUS	
H.C. Ye, Y. Liu, L.G. Shen and M.J. Li	114
On the Test Method of Dynamic Characteristics of MEMS Components	
G. He, Y.J. Wang and W.R. Ma	119

Research on Machining Method of Spatial Rotary Curved Surface	125
X.L. Shen, M.L. Li, H. Long and L.X. Zhang	
Research on the PDMS Surface Modification Technique	131
L. Tian, L. Wu, W. Wang and X.W. Liu	
Single Phase Pyrite Synthesized via Hydrothermal Method	136
Z.T. Yang, X.J. Liu, J.S. Liu and X.L. Feng	
Thermal Analysis of a Face-to-Back Bonded Four-Layer Stacked 3D IC Model	141
X.Y. Du and Z.N. Tang	
Ultra-Precision Turning Technology of Gold Cone in Fast Ignition	147
G. Li, Y.H. Huang, W.C. Tong, G.H. Yuan, Y. Tao and K. Du	

Chapter 2: Micro Sensors

MEMS Relay Optimization Design Algorithm Based on Particle Swarm Optimization	155
H.M. Liu, Q.H. Wu and X.S. Yan	
Design of an Array Bionic Vector Vibration Sensor Based on MEMS	162
L.X. Liu, G.J. Zhang and W.D. Zhang	
Design of 6H-SiC High Temperature Pressure Sensor Chip	166
X.M. Ma, F. Tang and X.H. Wang	
Microelectromechanical Hybrid Gyroscope Design of Closed-Loop Detection Circuit Based on FPGA	172
D.Z. Xia, C. Yu, S.R. Wang and H.S. Li	
Influence of Dimension and Temperature on Capacitive Humidity Sensor	178
H.J. Yu, J. Ling, H.Q. Shen, W. Zhou and B. Peng	
Research on Zero Bias Characteristic of FBW Gyro	182
L.C. Zhong, J.Z. Wang and Y.X. Duo	
A Single FBAR-Based Temperature and Pressure Sensors	188
X.L. He, L. Garcia-Gancedo, P.C. Jin, J. Zhou, A.J. Flewitt, W.I. Milne and J.K. Luo	
The Key Technologies of SOI Micro-Accelerometer Front Release Process	192
Z.Y. Zhang, Z.G. Shi, X.P. He, L.M. Du, H. Zhang and B. Peng	
Platinum Resistance Microsensor for Cryogenic Temperature Measurement	198
J.B. Mei, J.Q. Liu, S.D. Jiang, B. Yang and C.S. Yang	
Research on the Method of Laser Trimming to Reduce the Mode Coupling Error of Micro-Machined Vibratory Gyroscopes	204
H.J. Cui, K. He, D.B. Xiao, Z.Q. Hou, X. Liu, X.Z. Wu and J.B. Su	
Projectile-Borne Meteorological Information Detection Dropsonde Integrating Micro-Sensors	210
R.S. Hong, W.Z. Lou, M.R. Guo and C.Q. Liu	
Development of Data Acquisition System for Micro-Accelerometers' Dynamic Centrifuge Test	214
Y. Gao, R. Qin, C.Q. Guan and M. Li	
Y-Type Branch Waveguide Used in Resonant Micro-Optic Gyro	222
J.J. Wang, L.S. Feng, W. Wang, H.L. Liu and R.Y. Li	
Analysis of Intensity Variation of Laser in Resonator Micro-Optic Gyro	227
M. Lei, L.S. Feng and Y.Z. Zhi	
A Novel Noise Resistance Optical Accelerometer Based on Micro-Ring Resonant Cavity	232
X.Q. Wang, S.B. Yan, K.Z. Ma, P.F. Xu and W.D. Zhang	
The Design of a Membrane Biosensor	237
S.B. Sang, W.D. Zhang, H. Feng, P.W. Li, J. Hu and G. Li	
Optical Current Sensor Technology in Power System	242
L.H. Wang, J. Sun and J.F. Ji	
The Effect of Casimir Force to the Performance of the Micro-Accelerometer	247
L. Shen, S.Q. Gao and Y.W. Guan	
Capillary Condensation Adhesion Phenomena and Analysis of the Micromechanical Gyroscope	251
Y.L. He, H.P. Liu, S.Q. Gao and C.F. Wang	

Research on Mean Filtering Algorithm in Resonant Micro-Optic Gyro Signal Processing Based on Labview	255
Y.C. Zhang, L.S. Feng, Y.J. Ma, Y.Z. Zhi, M. Lei and N. Su	
A Sub 0.8 Degree per Hour Mode-Matching MEMS Vibratory Gyroscope with Closed Loop Control for the Sense Mode	260
C.H. He, Q.C. Zhao, D.C. Liu, Z.C. Yang and G.Z. Yan	
Tunable Microring Filter Based On-Chip Interrogator for Wavelength-Modulated Optical Sensor	265
J. Yang, C. Qiu, Q.L. Wang, M.H. Wang and J.Y. Yang	
Effect of Adsorption Stress-Induced Change in Neutral Layer Position on Static Behavior of Microcantilever Gas Sensor	268
F. Wang, L. Zhao, Y.L. Zhang and D.L. Jing	
A Novel Structure of Polyimide-Based Humidity Sensor Used in Low Temperature Environment	276
L. Xiao, Z. Zhao, L.D. Du, Z. Fang and S.H. Wu	
Temperature Model for a Vacuum Packaged MEMS Gyroscope Structure	280
H.L. Cao, H.S. Li, X. Lu and Y.F. Ni	
Edge Effect on Viscous Drag of the Rotor in Liquid Floating Rotational Micro-Gyroscope	286
H.F. Zhang, X.S. Zhang, X.W. Liu, Y.C. Liang and R. Weng	
Micro-Displacement Sensing Circuit for Gyroscope with Levitated Rotor	292
M.Y. Ren, X.W. Liu, W. Zuo and Z.G. Mao	
Liquid-Suspended Rotor Gyroscope Multiphase Driving Technology	296
R. Weng, X.W. Liu and H.F. Zhang	
Design of Hall Vehicle Speed Sensor Comprehensive System	302
Z.K. Qin, S.Y. Li, C.W. Wang and G.F. Wang	
System Simulation and Test of a Field Emission Accelerometer	306
H.T. Liu, Z.Y. Wen, L. Chen and Z.Q. Wen	
A Fourth-Order MASH Sigma-Delta Modulator in Inertial Sensors	311
X.W. Liu, Q. Li, G.N. Sun and W.Y. Liu	
Research on Micro Twin-Bridges Catalytic Combustion Type Kerosene Gas Sensor Technology	317
P. Wang, H.Q. Zhang, T. Zhang, B.R. Wang and D.Z. Wen	
Design of Monolithic Differential Quartz Vibrating Beam Accelerometer with Optimized Electrode Layout	322
W.P. Wang, Z. Zhou, L.S. Feng, B.Y. Yao and G.L. Yang	
Research on Characteristics of Mercury Droplet Flow in Micro Acceleration Switch	328
T.T. Liu, W. Su, T. Yang, B. Han and C. Wang	
Fundamental Study of the Micro-Cantilever for more Sensitive Surface Stress-Based Biosensor	334
H. Feng, S.B. Sang, W.D. Zhang, G. Li, P.W. Li, J. Hu, S.B. Du and X.J. Wei	
Influence of the Excitations and Detection Positions on the Sensitivity of Magnetoelastic Biosensors	339
X.J. Wei, S.B. Sang, W.D. Zhang, P. Cheng, C.Q. Cheng, P.W. Li, J. Hu and G. Li	
Design of Conductive MWNTs/SiO₂ Humidity Sensor Interface ASIC Based on AC Signals	344
T. Li, X.W. Liu, L. Yin and C.C. Dong	
A New Approach to Determine the Centroid of Star Spot for Star Tracker Based on MEMS-Gyro	350
N. Chen, F. Xing and Z. You	
A PID&AGC Method for Micro Vibration Gyroscope Drive System	357
S.H. Niu, D.D. Hong and S.Q. Gao	
Structural Design of 2D Piezoresistive Micro-Force Sensor	363
J. Zhou, W.B. Rong and L.N. Sun	
A High Bandwidth Sigma-Delta Modulator Applied in Micro-Gyroscope	369
Q. Fu, W.P. Chen, S. Chen, P.F. Wang and X.W. Liu	
Modeling of Nonlinear Stiffness of Micro-Resonator in Silicon Resonant Accelerometer	374
Z. Jing, S.D. Jiang and A.P. Qiu	
Nonlinearity Analysis of Closed-Loop ΣΔ Micro-Mechanical Accelerometer	380
X.W. Liu, H.L. Xu, B.J. Lv, J.J. Zhou, S. Chen and J. Yang	

The Design of a Micro Self-Powered Wireless Analog Sun Sensor G.F. Zhang, H. Wang and Z. You	387
A SOI-MEMS Piezoresistive Atmosphere Pressure Sensor L.D. Du, Z. Zhao, L. Xiao, M.Y. Zhang and Z. Fang	394
An Improved Phase Lock Loop for Micromechanical Gyroscope with a Carrier Modulation S.C. Hu, H.J. Zhu, M.J. Ma, Y.D. Liu and Z.H. Jin	398
A Novel Flexible Shear Stress Sensor Array with Double Hot-Wires Based on MEMS Y.M. Sun, W. Liu, H.H. Chen, W.P. Zhang, W.Y. Chen, F. Cui and X.S. Wu	403
Portable-Surface Plasmon Resonance Biosensor Immunoassays for the Human Serum Albumin Detection H. Li, L.L. Zhang, H.Y. Cai, X. Chen, J.H. Sun, Y.P. Chao and D.F. Cui	408
A Novel Z-Axis Capacitance Accelerometer with Highly Symmetrical 16-Beam Structure W. Li, L.F. Che, X.L. Li, J. Wu and Y.L. Wang	412
Sine-Wave Exciting Circuit for Quartz Vibrating Gyroscope Q.Y. Wang, X.W. Liu, R. Zhang, L. Yin and Z.P. Zhou	417
Design and Fabrication of a Novel Biaxial Piezoelectric Micro-Gyroscope R. Guan, W.P. Zhang, G. Zhang, Y.X. Cheng, W.Y. Chen, X.S. Wu, F. Cui and W. Liu	421
A Novel Initial Alignment Based on the HMM/Steady State KALMAN Filter X. Ma, L.C. Zhong, J.L. Han and C.S. Liu	426
Analysis of Magnetic Field for Micro Axial-Flux Electromagnetic Generator T. Wu, N.J. Fan and Y.X. Wu	431
Design of a MEMS Resonant Wind Sensor on Airplane Wing C.W. Si, G.W. Han, J. Ning, W.W. Zhong and F.H. Yang	436
Electrochemical Characteristics of Aptasensor Based on MEMS Thin-Film Gold Electrode Y.X. Yan, L.Y. Jiang, F.F. Wang, Y. Zhang and J. Hu	441
Electrospun ZnO Nanowires as Gas Sensors for Propanol Detection Y. Li, J.N. Ding and N.Y. Yuan	446
Modeling of Vibratory Microgyroscope with Manufacture Errors Based on Parameters Identification Theory J.B. Su, X.Z. Wu, D.B. Xiao, Z.H. Chen, Z.Q. Hou, X.H. Wang, Y. Xin and K. He	452
Replication, Characterization and Simulation of Micro Injection Molded Microlens Arrays Using Technical Amorphous Polymers L. Chen, S. Kirchberg, B.Y. Jiang, L. Xie, Q.J. Qiu and G. Ziegmann	458
Simulation Research of the Long-Base Silicon Magnetic Sensitive Diode Negative-Resistance Characteristics on the Base of ATLAS X.F. Zhao, L. Li, P. Wang, D.Z. Wen and G. Li	465
Study of High-Temperature MEMS Pressure Sensor Based on SiC-AlN Structure H.J. Lv, T. Geng and G.Q. Hu	471
The Design of the Integrator of Sigma-Delta Modulator X.W. Liu, S. Chen, L. Liu, J. Yang and W.P. Chen	477
The Study on the Analytic Model and Design Software for IP of Piezoresistive Cantilever Beams J.L. Zhu, W.H. Li, Z.F. Zhou and Q.G. Huang	482
The Characteristics of MEMS Based Seismic Sensors Using the Electrochemical Approach Y.J. Fan, J.B. Wang, T. Deng, D.Y. Chen and W.T. He	486
Simulation Research on Micro-Cavity Flow Field Characteristics of Liquid Floating Rotor Gyro Y.P. Shi, F. Tang and X.H. Wang	490

Chapter 3: Micro Actuators

Design of Screw Wheel Micro In-Pipe Robot Control System C.X. Liu	499
Design and Simulation of High Efficient MEMS Electrothermal Actuator R.C. Song, G.L. Wang, J.B. Wang, Y.Y. Shen and C. Lv	504
Parametric Identification of Bouc-Wen Hysteresis Model for Piezoelectric Ceramic Actuator Based on Immune Particle Swarm Optimization Algorithm N. Dong, H.J. Li, X.D. Liu and C.X. Cai	509

Bouc-Wen Model Parameter Identification for Piezoelectric Actuator Using Chaos Particle Swarm Optimization	516
C.X. Cai, X.D. Liu, N. Dong and H.J. Li	
Analysis of an Electrostatic Micro-Actuator Based on Vertically-Horizontally Bending	522
W.C. Tian and Y.T. Yang	
Performance Comparison of Typical Electrothermal Actuators	528
L. Zhou, X.J. Shen, Z.L. Wang and Y. Hu	
Photothermal Microactuators Fabricated by LIGA Technology	534
B. Wang, B. Shi, F.T. Yi, D.X. Zhang, H.J. Zhang, T.C. Zhang, J. Liu and L.N. Ma	
Preparation of Graphene-Containing Composite Film and the Research on its Thermal Conductivity	538
F.X. Li, S.L. Jin, X.L. Zhou, R. Zhang and M.L. Jin	
Preparation of In₂O₃/MWCNTs Nanocomposites and their Gas-Sensing Property to Ethanol	543
L. Zhang, F.B. Gu, Z.H. Wang, D.M. Han and G.S. Guo	
Research on MEMS Based Real-Time Measurement System for Motion Information of the Vehicle	549
F. Zhao, Z.Y. Zhou, J.J. Xiong, J.F. Zhao and J.J. Liu	
Resonant Point Tracking and Locking Technique Based on Microsphere Resonator	553
P.F. Xu, J.H. Zhang, K.Z. Ma, S.B. Yan and W.D. Zhang	

Chapter 4: Microfluidics and Nanofluidics

A Microfluidic Chip Microwave Bonding Method Based on the PMMA	
X.W. Liu, X.W. Han, H. Zhang, X.Y. Jiang and L. Zhao	561
A Novel Microfluific Design for Cell Culture and Test	
W.D. Zhang, X.L. Tang, S.B. Sang, S.B. Du, P.W. Li, J. Hu and G. Li	566
An Interstitial Fluid Transdermal Extraction Chip with Vacuum Generator and Volume Sensor for Continuous Glucose Monitoring	
H.X. Yu, D.C. Li, Y.J. Ji, X.L. Zhang and K.X. Xu	571
Application of Nanomaterials in the Fields of Drilling Fluids and Completion Fluids	
C. Ma, L. Li, S. Li and X.L. Han	576
Bubble-Induced Relaxation in High-Pressure Microfluidic Systems	
B.J. Wang, F. Xie, W. Wang, W.G. Wu and Z.H. Li	581
Heat Transfer-Fluid Coupled Simulation for Smart Meteorological Microsystems	
X.R. Ding, W.Z. Lou and R.S. Hong	585
Microfluidics Design for Single Cell Detection	
S.B. Du, S.B. Sang, W.D. Zhang, J. Hu, P.W. Li, G. Li and H. Feng	589
The Thermochemotherapy Effect of Mn_{0.5}Zn_{0.5}Fe₂O₄ Magnetic Fluid Hyperthermia Combined with As₂O₃ on GLC-82 Cells	
H. Zhang, X.X. Hou, M. Lin, H.Y. Ni, C.Y. Yuan, H.B. Li, J. Zhang, L. Wang, Y.T. Li, Y.L. An and D.S. Zhang	594
A New Fabrication Method for Paper-Based Microfluidic Device Used in Bio-Assay	
Z.A. Li, L.Y. Hou, W.Y. Zhang and L. Zhu	601
Effects of Anode Serpentine Flow Fields on the Performance of μ-DMFC	
S. Fang, Y.F. Zhang, W.T. Fu and X.W. Liu	608
Electrohydrodynamic Direct Writing Platform Based on Near-Field Electrospinning	
J. Wei, J.Y. Zheng, G.F. Zheng, Y.H. Lin, G.Q. He, H.Y. Liu, D.H. Sun and J. Liu	614
Studies on Preparation of Diet Microcapsules by Using Digitalization of Microfluids Technology	
M. Yang, L.Y. Hou, Z.A. Li, L.L. Mu and W.Y. Zhang	620
The Preparation of High Concentration Silver Nanoplates with Liquid-Phase Reduction Method	
J.L. Fu, L.X. Mo, Y.L. Li, W.W. Li, W.B. Li, J. Ran, X.M. Fan and L.H. Li	627
The Rapid Fabrication of Hydrogel Microfluidic Chip for Cell Capture Culture and Metabolites Detection	
K.J. Fang, C.J. Hou, C.H. Huang, X.G. Luo, S.Y. Zhang, C.H. Shen and D.Q. Huo	632

Transient Pull-In Analysis of Micro-Plate with Fluid-Structure Interactions

X.Z. Lin, J. Ying and J.M. Huang

637

Chapter 5: Bio MEMS and Applications**Design and Fabrication of a Lateral Contact RF-MEMS Switch for MM-Wave Applications**

Y.Q. Zhu, L. Han, J.Y. Tang and Q.G. Huang

645

Electrodeposition of Three-Dimensional (3D) Ag/Pd Bimetallic Nanodendrites and Application for Total Nitrogen Determination

J.F. Hu, J.Z. Sun, C. Bian, J.H. Tong and S.H. Xia

652

Fabrication of Organic-Inorganic Hybrid Nanopore and its Application in Biosensing

L. Liu, B. Wang, Y. Yang, Z.H. Ni and Y.F. Chen

658

Preparation of Thermoresponsive Chitosan Polymers and Its Application Controlling Release of Antifouling Agent

F.L. Xu, C.G. Lin, J.Y. Zheng, J.W. Zhang and L. Wang

664

The Design of High-Frequency OTA-C Filter for Wireless Sensors Network Applications

Z.Q. Gao, W. Zheng, L. Yin and X.W. Liu

668

The Study in the Application of Nanotechnology Digital Printing in Clothing Pattern Design

C.H. Lin and C.M. Lin

674

A PDMS Micropump for Implantable Drug Delivery Application

J.H. Ni, B.S. Zhan and J. Li

680

Application of Electrical Resistance Tomography to Ice-Water Two-Phase Flow Parameters Measurement

J.G. Zhang and F.C. Ma

686

Effect of pH on Hard Disk Substrate Polishing in Glycine-Hydrogen Peroxide System

Abrasive-Free Slurry

S.S. Chen, H. Lei and R.L. Chen

691

Large Scanning Range and Rapid AFM for Biological Cell Topography Imaging

B.H. Yin, D.X. Chen, Y.S. Lin, Y.Y. Gao, H. Li and D. Han

697

The Study of Correlations among Parameters in Electrohydrodynamics Micro-Jet Printing System

J.J. Tan, Z.N. Tang and Q. Wang

701

Chapter 6: Nanomaterials**A Parallel Computing Dynamic Task Scheduling System for Nano-Materials Design and Simulation**

X.H. Zeng, J.Z. Li, D.L. Bo, C. Zhang and W.L. Luo

709

The Preparation of Size-Controlled Antimony Nanoparticles by Electrochemical Method

J.L. Xu, J. Wang, L.H. Zhang, L. Niu, J.B. Zhang, F. Ran and X.B. Yan

716

Analytical Method for Calculating Curvature of Circular Silicon Wafer Caused by Boron Doping

J.B. He, J. Xie, W. Zhou, H. Qu and P. Peng

721

Characteristic Research of SOI Rib Waveguide Resonators with SiO₂ Deposited

J.B. Zang, C.Y. Xue, L.P. Wei, Y.H. Wang, D.F. Cui and W.D. Zhang

727

Charge Storage Characteristics of Ni-NiO_x Core-Shell Nanocrystals Embedded in SiO₂ Gate Oxide

H.N. Ni, L.C. Wu, C. Hui, Z.B. Fang and Z.B. Li

731

Color Filters Based on the Subwavelength Triangular-Lattice Cylinder Arrays in Metal-Dielectric Films

R.J. Shao, Y. Ye, X.X. Dong, Y. Zhou, S. Shen and L.S. Chen

737

Combined Torsional Buckling of Carbon Nanotubes Subjected to Thermo-Electro-Mechanical Loadings with Consideration of Scale Effect

X.H. Yao, Y.G. Sun and H.Z. Li

744

Composite Content Influence on Multiwall Carbon Nanotubes-SiO₂ Film Humidity Sensors at AC Testing

T. Li, X.W. Liu and Z.G. Zhao

750

Highly Efficient Nano-Catalysts Using Activated Carbon as a Support for One-Step Oxidation of Cyclohexane to Adipic Acid	754
H. Dai, M.Q. Zhu, W. Li and Z.F. Tong	
Influence of Parameters on Fabricating TiO₂ Nanotube by a Hydrothermal Method	760
F.F. Zheng, W.L. Zhang and X.F. Zeng	
Preparation and Characterization of Polyesteramide Composed by Carbon Nanotube	764
Y. He, L. Ma, P. Hai and J.B. Li	
Preparation and Megnetic Performance Study of One Dimensional Co-Ni Nanomaterial	770
L.X. Lu, H.Y. Yu, D.B. Sun and W.H. Lu	
Preparation and Photocatalytic Properties on ZnO/TiO₂ Nanotubes	775
Y.L. Liu, X.C. Duan, Y.M. Li and Y.Y. Liu	
Texturing Multi-Crystalline Silicon Wafer by Ultrasonic Standing Wave in Acid Etching	781
Y. Chao and L.Q. Wu	
The Degradation of Polyesteramide Carbon Nanotube Composites	785
Y. He, P. Hai, L. Ma and J.B. Li	
A Novel Method to Modify the Lapping Uniformity for Silicon Wafer	790
W.J. Zuo, X.H. Du, H.E. Zhang, Y.Z. Su, T.P. Lei, L.Y. Wang and D.H. Sun	
A Novel Electrochemical Sensor for Formaldehyde Based on Platinum Nanoparticle/L-Alanine Modified Glassy Carbon Electrode	796
J.H. He, Q. Xu and Z.R. Song	
A Study on Size Effect of Indenter in Nanoindentation via Molecular Dynamics Simulation	802
L. Zhang, H.W. Zhao, Z.C. Ma, H. Huang, C.Y. Geng and Z.C. Ma	
Characterization of Glass-Ceramics by TEM	809
X.Q. Liu, J.L. Xie, F. He and H. Yang	
Determination of Ascorbic Acid Based on a Platinum Nanoparticles Modified Au Electrode	813
J.H. He, Z.Q. Gao and Z.R. Song	
Electrospinning and Characterization Nanofibres of Modified Konjac Glucomannan/PBS	817
Y. Li, X.Y. Lin and X.G. Luo	
Experimental Investigation of the Thermal Conductivity of the Titanium Carbide Thin Films on Silicon Substrate	821
S.Y. Bai, Z.X. Huang and Z.N. Tang	
Large Area Au Decorated Multi-Walled CNTs Film for Surface Enhanced Raman Scattering	826
J. Zhang, Y.L. Chen, T. Fan and Y. Zhu	
Magnetron Sputtering Ni-Cr Alloy Thin Film Resistance Temperature Characteristic Study	832
L. Tang and D.P. Hu	
Mechanism of Synthesizing Al₂O₃/Fe-Al Composites with Nano Al₂O₃ Fibers by <i>In Situ</i> Process	837
C.J. Lu, S.X. Ren, J.L. Wang and G. Yu	
Microstructure and Mechanical Property of Nanocrystalline Surface Layer on 7A52 Aluminium Alloy	842
X.M. Wang, S. Zhu, Q. Chang and X.Q. Feng	
Modified Nanocrystalline Cellulose Used for Improving Formaldehyde Emission and Bonding Strength of Urea Formaldehyde Resin Adhesive	846
H. Zhang, Y. She, S.P. Song and J.W. Pu	
Oxidation-Induced Redshifts in the Energy Gap of Silicon Quantum Dots	852
J.Q. Zeng and H. Yu	
Preparation and Photocatalytic Activity of Nd³⁺and CTAB Co-Doped Nanometer TiO₂ Thin Films	858
L.F. Yao, X. Tang, X.P. Yan and L. Li	
Preparation of Cellulose Micro/Nano Fibrils by Sonochemical Method and its Morphological Characterization	864
Y. Wu, Z.H. Wu and J.L. Zhang	
Preparation of Composite Spherical Alumina Nanoparticles and Study on their CMP Performance	869
L. Tian, Z.T. Zhang, J. Zhang, Q.X. Sun and X.L. Jia	
Preparation of Expanded Graphite-Based Composite Electrode and Electrochemical Degradation of Phenol	874
C.B. Liu, Z.G. Chen, T.B. Wang, F. Chen, C. Gu, Y. Cao, Z. Xu and Z.Y. Wu	

Preparation Thin Film Nanocomposite Membrane Incorporating PMMA Modified MWNT for Nanofiltration	882
C.C. Yu, H.W. Yu, Y.X. Chu, H.M. Ruan and J.N. Shen	
Preparation and Characterization of Konjac/Gelatin Composite Nanofibrous Membranes	887
X.C. Du, X.Y. Lin, Y.H. Huang, Y. Li and X.G. Luo	
Reliability Study of the Band Gap of Rare Earth Oxides Measured by XPS Spectra	891
X.F. Yang, Y.S. Tan, Z.B. Fang, J.J. Wang, H.N. Ni, Z.B. Li and T.H. Chen	
Research of SPR Phase Detection for Measuring Ultra Thin Metal Film	896
C. Liu, Q.G. Liu and T.T. Li	
Research on Formation Mechanism of Black Silicon Based on Matter Wave	902
C. Wang, F.Y. Zhu, M.Z. Sun, H.X. Zhang and X. Zhao	
Structural and Photoluminescence Characteristics of ZnTiO₃:Pb²⁺ Nanofibers Produced by Electrospinning	908
R.L. Sang, Y. Chen, Q.J. Zhang and L. Wang	
Structure and Mechanical Property of Asio Otus Feather Barbs	914
J.L. Gao, G.Q. Zhang, L. Guan, J.K. Chu, D.Y. Kong and Y.T. Bi	
Study on the Preparation of Streptomycin Imprinted Polymers on the Surface of Silica Micro and Nano Spheres	920
Z.F. Li, J.J. Li, D.Q. Huo, M. Yang, X.L. Li, G.M. Wang, H.B. Fa and C.J. Hou	
Synthesis of High Density Boron Nitride Nanotube Film	926
X.W. Liu, L. Li, J.N. Dai and Y. Chen	
System-Level Simulation and Fabrication of On-Chip Fatigue Bending Test Structure for Micro-Scale Polysilicon Films	930
L. Guan, J.L. Gao, Q. Liu, B. Li and J.K. Chu	
The Effects of RE and Si on the Thickness and Cross Section Morphology of Zn-6Al-3Mg Alloy Coating	935
S.W. Li, B. Gao, G.F. Tu, S.C. Sun, S.H. Yin and L. Hu	
The Fabrication of Piezoelectric Vibration Energy Harvester Arrays Based on AlN Thin Film	942
Z.G. Shang, D.L. Li, Z.Y. Wen and X.Q. Zhao	
The Study of Porous Anodic Alumina as Template for the Pit Initiation on Electrode Aluminum Foils	947
H.M. Zheng, Y.C. Wu, X.M. Huang, X. Shu, Y.C. Zheng and M.C. Liu	
Influences of Crystallization Temperature and Slurry Concentration on Stress of PZT Thick Film Prepared by a Modified Sol-Gel Method	952
W. Ren, X.C. Zhao and J.H. Li	
Experimental Study on Single-Layer Laser Cladding Feeding by Micro/Nano Composite Powders	958
M.D. Wang, S.H. Shi, H.Y. Wang, C.F. Sun and X.B. Liu	
Thermal Assisted UV Digestion Utilizing Nano-TiO₂ Photocatalyst for the Detection of Total Phosphorous	964
T. Dong, J.H. Tong, C. Bian, J.S. Sun and S.H. Xia	

Chapter 7: Optical MEMS (MOEMS)

Design and Manufacture of Micro Interference System in Spatial Modulation Fourier Transform Spectrometer	973
J.G. Lv, J.Q. Liang, Z.Z. Liang, Y.X. Qin, C. Tian and W.B. Wang	
A Short Ultrasonic Motor Stator with Square Base	979
R.X. Wang, L. Jin, Z.K. Xu and M.Q. Hu	
Influence of Light Scattering Particles on Optical Properties of Polymer Diffusion Plate	984
X.T. Zheng, H.J. Wang, Y. Liu, D.M. Wu, Z.L. Zhao and X.X. He	
Integrated-Optic Tenth-Order Micro-Ring Filters in Silicon-on-Insulator	991
S.B. Yan, X.Q. Wang, K.Z. Ma, A.F. Zhang, C.Y. Xue and W.D. Zhang	
Nanometer-Scale SOI Based Y-Branch Couplers for High Density Optical Integrated Circuits	996
Z. Zhou, Z.F. Dong, L.S. Feng, K.B. Wang and Y.Z. Zhi	

Nitrogen Content Influence on Optical Properties of DC Magnetron Sputtered Copper Nitride Films	1001
S.Y. Wang, N.Y. Yuan and J.N. Ding	
Novel Fiber-Optic Sensing System for Detection of Methane	1008
S.T. Wang, P.W. Zhang and Q.M. Zhu	
Photoacoustic Resonant Cell Remodified from Helmholtz Cavity for Multi-Gas Sensing Using Infrared Lasers	1016
J.J. Zhao, X.H. Li, Z. Zhao, X.L. Gai and Y.Q. Liu	
Research on Improving the Measurement Accuracy of Laser Interferometer System	1021
X.Z. Wang, H. Zhou and Z.S. Zhai	
Study on the Mechanism of Rapid Synthesis of Small Grain NaX Type Molecular Sieve with Calcined Kaolin	1027
Y.Y. Wang, H.W. Zhang, X. Chen, Y.H. Xiao and Y.N. Luo	
Three-Dimensional Analysis of Divergence Angle on Deposition of Chromium Atoms in Laser Standing Wave Field	1033
J. Huang, B.H. Zhu and W.T. Zhang	
TiO₂ Thin Layer Coated Ag Nanoarrays Complex for Surface-Enhanced Raman Scattering Substrate	1037
Z.Y. Bao and Y.C. Wu	

Chapter 8: Power MEMS

A Low-Power Photovoltaic Maximum Power Point Tracking Circuit for WSNs	1045
G.F. Zhang, R. Ma, Z. You and Z.C. Zhang	
A MEMS Piezoelectric Cantilever Beam Array for Vibration Energy Harvesting	1052
X.Q. Zhao, Z.Y. Wen, L.C. Deng, G.X. Luo, Z.G. Shang and D.L. Li	
A Low-Distortion Fourth-Order Bandpass Sigma-Delta Modulator Using Double-Sampling Technique	1058
H.L. Xu, J.J. Zhou, J. Yang, S. Chen, Z.Q. Gao and X.W. Liu	
Design and Simulation of Anti-Violent Rocket Engine on Small UAV	1063
X.Y. Liu and S.X. Guo	
Dynamics Research on Electron-Stimulated Desorption of Fluorine from Fluorinated Graphene Surface	1069
L. Guo, X.K. Chen, L.X. Wang, S.Z. Cao, X.H. Bai, C. Zhang, Y.M. He and H. Gao	
Effects of Geometrical Parameters on Performances of Wind Energy Harvester with a Chamber	1075
X.F. He, Y.F. Fang and Z.G. Du	

Chapter 9: Nano Devices and NEMS

Application of Laser Doppler Technique in Detecting the Dynamic Parameter of MEMS Device	1083
G.M. Yuan, W.Z. Yuan, Y.B. Liu and H.L. Chang	
Combining Micro-Nanotechnology with Atomic Spin Devices	1088
H.F. Dong and B. Zhou	
Development of a Nanomanipulation System for Handling Nanowires	1092
S.Z. Zhang, W.B. Rong and L.N. Sun	
Micromachined W-Band Waveguide Duplexer Design Based on MEMS Technology	1098
H.L. Liu, C.X. Zhao, L. Li and Z.W. Liu	
Generalized Thermal Design Model for Comb-Capacitor MEMS Devices Fabricated by Bonding-DRIE Process: A Preliminary Framework	1103
H. Sun, F. Yang, W. Wang and D.C. Zhang	
High Impact Dynamic Simulation of Planar S-Form Micro-Spring	1107
Y. Wang, W.Z. Lou and Y. Fu	
Microdevice-Based DNA Extraction Method Using Green Reagent	1111
X. Chen, D.F. Cui, J.H. Sun, L.L. Zhang and H. Li	

Single Mask Selective Release Process for Complex SOI MEMS Device	1116
J.B. Xie, Y.C. Hao, H.L. Chang and W.Z. Yuan	
Analysis on the Sticking Failure of Micro-Comb Driving Structure	1122
H.P. Liu, Z.Q. Zhang, S.Q. Gao and L. Jin	
Design and Simulation Analysis of a New Type of Micro Metal-Plastic Heat Radiator	1127
Z.L. Zhao, B.J. Zhou, J. Zhuang, D.M. Wu, Y.J. Zhang, X.T. Zheng and K.F. Dang	
Design and Simulation of Switched Capacitor Filter for Speed Change Parameter Converter	
X.W. Liu, J. Yang, S. Chen, L. Liu, R. Zhang and W.P. Chen	1132
Preparation of Polyaniline @ Polypyrrole Conductive Composite via <i>In Situ</i> Polymerization	1137
H.X. Feng, B. Wang, L. Tan and N.L. Chen	
Design of MEMS Piezoelectric Vector Hydrophone	
N. Lu, J.H. Li, M.W. Liu and C.H. Wang	1143
Design of MEMS Wireless Air-Mouse System Based on MEMS Technology	
H. Zhou, B. Mo, R.M. Huang, C.D. Ling and R.H. Huang	1149
Electrohydrodynamic Printing via Spinneret with Conductive Probe	
Y.H. Lin, G.Q. He, H.Y. Liu, J. Wei, J.Y. Zheng, G.F. Zheng and D.H. Sun	1155
First-Principle Calculation of the Co Doped Anatase TiO₂	
X.P. Yan, L.F. Yao and X. Tang	1161
First-Principles Calculations on Pure and Y-Doped Anatase TiO₂	
X. Tang, L.F. Yao, X.P. Yan and J.L. Kang	1166
Gap Adjustable MEMS Comb Resonator	
X. Pu, W.H. Li, Z.F. Zhou and Q.G. Huang	1171
MD Simulation of MEMS “Stiction” and “Snap-Back” Phenomena	
W.C. Tian and L.Q. Zhao	1177
Modeling of Particle Migration inside Vibration Bubbles in Bubble-Stretching Dispersion Method	
F. Wang, Y.L. Zhang, L. Zhao and X.M. Wang	1182
Numerical Study on Thermal Boundary Resistance and Conductive Properties of Cu/Al Interface	
Z.Y. Ling, L. Qian, G.G. Cheng, Z.Q. Zhang and D.J. Sun	1190
Preparation and Characterization of a Micro-Supercapacitor with Three-Dimensional Microelectrode Arrays	
X.Y. Li, X.F. Wang, R. Ma, W.S. Lv and Z. You	1196
Research on the Resonance Properties of E-Type Nano Antenna	
R. Su, Z.H. Yuan and Z.W. Liu	1203
Structure Design and Simulation Analysis of Multiple Micro Piezoelectric Cantilevers	
A.R. Jiang, S.Q. Gao, F.L. Yao and Y.L. He	1208
Study of Piezo-Induced Surface Vibration in Solids Using Atomic Force Probe	
F.H. Li, D.X. Zhang and H.J. Zhang	1214
The Electric Field Analysis of Interdigitated Electrode-Array Based on Semi-Analytical Method	
J. Tan, Z. Fang, Y.H. Liu and Z. Zhao	1218
The Fabrication of Silicon Nanopin with CsCl Nanoislands and Dry Etching for Field Emission	
M. Ashmkhan, J. Liu, B. Wang and F.T. Yi	1224
The Influence of Water Contact Angle on the Colonization of Diatoms (<i>Navicula</i> sp and <i>Pinnularia</i> sp) and <i>Ulva</i> Spores (<i>Pertusa</i>)	
J.W. Zhang, C.G. Lin, L. Wang, J.Y. Zheng and F.L. Xu	1229
The Omnipolar Integrated Magnetic Switch Based on GMR	
H.C. Zhu, Z.H. Qian, R. Bai and J.P. Li	1234
The Oxygen Plasma Dry Release Process of the Membrane Bridge of RF MEMS Switches	
L.L. Jiang, S.X. Jia and J. Zhu	1238
The Reliability of Micro-Spring under Dynamic Circumstances	
W.Z. Lou, P. Liu, K. Li and X.R. Ding	1242
The Study of Free-Standing Diamond Film SAWF	
D.P. Hu, J. Feng and L. Tang	1246

Trends of MEMS-Based Vibration Energy Harvester B. Mo, R.H. Huang, R.M. Huang, C.D. Ling and H. Zhou	1251
Ultrahigh-Resolution MEMS Humidity Sensing Elements Based on Film Bulk Acoustic Wave Resonators H.Y. Zhao, D.H. Zhang, W. Pang and H. Zhang	1257
Ultrasonic Energy Characteristics of ZnO Piezoelectric Thin Films Array Based on MEMS S.H. Wu, Z.H. Gao, Z. Zhao, L. Xiao and Y.D. Xuan	1263
Uniformity Analysis of Temperature Distribution in the Grating Embossing Mold by Induction Heating J.J. Zhi, E.Z. Chen, Y.C. Che and Q.R. Zhuang	1267
A Single Cells Patterning Approach for Human Promyelocytic Leukemia Cells D.H. Ren, M.Y. Cui, J. Wang, Y.Q. Xia, Z. You and Y.Y. Wang	1273

Chapter 10: Nanobiology, Nano-Bioinformatics, Nanomedicine

A Novel Analytical Method for Designing Microelectromechanical Filters H. Zhao, W. Luo, J.L. Yang and F.H. Yang	1281
Effects of Plasma Nitriding and TiN Coating Duplex Treatment on Tribological and Electrochemical Properties of Cast Pure Titanium Y. Tong, T.W. Guo, J. Wang, H.F. Liang and Q. Mi	1285
Antifouling Performance of Surface Microtopographies Based on Sea Star <i>Luidia quinaria</i> J.Y. Zheng, C.G. Lin, J.W. Zhang, L. Wang, F.L. Xu, J. Zhou, D.X. Duan and H.H. Liu	1290
Capture of Charged Polymer in Salt Solution X.L. Wei, J.J. Sha and Y.F. Chen	1296
Electrochemical Measurement of Copper, Lead and Zinc Ions in Tap Water by Using an Environment-Friendly Microelectrode J.F. Wang, C. Bian, J.H. Tong, J.Z. Sun and S.H. Xia	1302
Molecular Dynamics Simulation Research in Water Adsorption on Aluminum Surface Y.C. Liang, Q.L. Wang, J.X. Chen, W.K. Xie and Y.Z. Sun	1308
Morphology Controlled Nanostructure of Zinc Porphyrin J.J. Li, C.J. Hou, Z.F. Li, H.B. Fa, M. Yang, D.Q. Huo and L. Zhang	1314
Photocatalytic Degradation of Organic Pollutants at Solution Bulk with Pigment/TiO₂ Nanocomposite X.L. Shangand, T.Y. Zhang, C.H. Li, B. Li and X. Wang	1319
Preparation of PEI-Fe₃O₄/Survivin-siRNA Magnetic Complex and its Anti-Tumor Effect Combined with MFH on Lung Carcinoma Cells X.X. Hou, H. Zhang, H.B. Li, C.Y. Yuan, M. Lin, H.Y. Ni and D.S. Zhang	1325
Prussian Blue Modified Ferritin Nanoparticles as Peroxidase and Catalase Mimetics and their Application in Glucose Detection W. Zhang, Y. Zhang and N. Gu	1333
Simulations and Experimental Studies on Biomolecules Passing through Polycarbonate Ultrafiltration Membrane L. Liu, Y.Z. Hou, Y.D. Wu, Z.H. Ni and Y.F. Chen	1340
Smart Structural Health Monitoring Based on Detecting Picometer-Scale Wavelength Shift of Fiber Bragg Grating J.J. Bai, J.X. Li, J. Zhang, X.Y. Zhang, L. Wang and Y. Wu	1346
Synthesis of Biomorphic Ceria Templated from Crucian Fish Scales F. Chen, Z.G. Chen, C.B. Liu, Z.Y. Wu, Q.Y. Lu and L. Yu	1353

Chapter 11: Packaging, Sealing and Assembling Technologies

A New Packaging Method of Alkali Metal Simple Substrate and Related Key Techniques S. Chen, Y. Ruan and B. Ma	1361
Influence of Package on Micro-Accelerometer Sensitivity P. Li, S.Q. Gao, L. Jin, H.P. Liu and Y.B. Shi	1367
A Robust Location Algorithm for PCB's Solder Joints F.P. Wu, Y.Y. Geng and S.P. Li	1373

An Investigation into the Influencing Factors for Polymer Melt at the Filling Stage in Micro Injection Molding

J. Zhuang, D.M. Wu, Y.J. Zhang, L. Wang, X.W. Wang, Y. He and W. Hu 1380

MEMS Monolithic Integration Technology

Z.Y. Zhang, Z.G. Shi, Z.C. Yang and B. Peng 1387

New Structure of Crossing Magnetic Poles on Magnetic Fluid Seals

M. Zhao, S.L. Jiang and C.J. Liu 1393

Study on the Air Damping of the Movable Armature

B.D. Liu, J.H. Yang and Y.D. Wu 1397

The Effect of Vibration Noise for Cavity Ring Down Time Extraction

X.R. Meng, Y. Zhao, X.Q. Wang, P.F. Xu, W.D. Zhang and S.B. Yan 1402

The Study of Glass Cutting Based on the Micro-Crack Control

C. Huang, J.M. Chen and J.W. Yuan 1408

Chapter 12: MEMS/Nano Related Research

Aerosol Jet Printing on Radio Frequency IDentification Tag Applications

B.L. Xu, Y. Zhao, L.K. Yu, B. Xu, H.E. Zhang, W.L. Lv and D.H. Sun 1417

Characterization of Atmosphere PM_{2.5} and Dustfall in Xining (China)

J. Tang, F.Q. Dong, Q.W. Dai and Y.Q. Deng 1422

Concentration Variation and Morphological Types of PM_{2.5} in Suburban of Yinchuan City

W. Chen, F.Q. Dong, Y.Q. Deng, Q.W. Dai, Y.B. Huang and S.P. Zhou 1428

Mineral Characteristics Analysis of PM_{2.5} in Northern China

L.Z. Liu, F.Q. Dong, X.C. He, Q.W. Dai and Y.B. Huang 1434

Fabrication of Transparent Conductive Film Using Water-Based Nano-Silver Gravure Ink

W.W. Li, L.X. Mo, J.L. Fu, W.B. Li, J. Ran, X.M. Fan, Y.L. Li and L.H. Li 1440

A Control Algorithm for Near-Infrared Spectra Detection System Based on Grating Light Modulators

W. Wei, W.M. Chen, N. Wang and Y. Qin 1444

A Low Noise Operational Amplifier Design Using Chopper Stability

X.W. Liu, L. Liu, J. Yang, S. Chen and W.P. Chen 1450

Characteristics of Pore-Throat Structure and Mass Transport in Ultra-Low Permeability Reservoir

Q.H. Xiao, Z.M. Yang and X.W. Wang 1455

Effect of the Surface Roughness on the Detecting Capacitance

H.F. Zhang, X.W. Liu, H. Li, N. Chen and Y.B. Fu 1461

Effects of Different Relevant Layers on Magnetic Properties of Bottom Synthetic IrMn Spin Valves

R. Bai, Z.H. Qian, Y.C. Sun, J.P. Li, H.C. Zhu, L.W. Li, Y. Li, D.X. Huo and H.L. Zhan 1467

Finite Element Analysis of Failure in Cu Interconnect Megasonic Cleaning

Y.T. Huang, C.L. Meng, N.P. Wu, X.P. Dong and X.C. Lu 1471

Immune PI Controller on Magnetic Levitating Ultra Precision Stage

X.P. Liu, X.H. Hao, D.S. Zhang and B. Wang 1477

Investigation on the Data Processing Method for High-Precision Alignment of PM Fibers

W.B. Rong, W. Zhang, L.F. Wang, H.L. Zhang and L.N. Sun 1482

Low Stress MEMS Delay Mechanism

G.Z. Li, G.C. Shi and L. Sui 1489

Mathematical Modeling of a Direct Methanol Fuel Cell with a Novel Structured MEA

C.G. Suo, W.B. Zhang and X.H. Quan 1495

Modeling Analytically the Pull-In of Double-Cantilever Structure

H.J. Yu, H. Yang, H.Q. Shen, B. Peng and W. Zhou 1499

Modeling of Ultra-Precision Piezodriven Positioning System

H. Chen, Y.H. Tan, X.P. Zhou, Y.H. Zhang and R.L. Dong 1504

Optimization Analysis on the Transmission Characteristics of Semi-Circle Long-Range Dielectric-Loaded Surface Plasmon-Polariton Waveguides

L.B. Cheng, X.L. Cheng, Z.L. Dou and G.M. Zhang 1510

Research on the Customer Requirement Processing for Mass Customization	
Y.H. Zhang and Y.J. He	1516
Research on the Gas Sensing Enhancement by Using CNT/ZnO Composites	
L.M. Yu, X.H. Fan, J.Y. Shui, L.J. Qi and W. Yan	1522
Study on Active Vibration Control	
F. Xing, J.G. Cao, J. Wang and C.Y. Deng	1527
Sub-Pixel Image Matching Based on the Fractal Dimension	
Y. Luo, Z.Q. Jiang and Y. Zhang	1531
Ultrasonic Attenuation of High Concentration of Micron Particle Clouds	
M.R. Guo, W.Z. Lou, Y.K. Liu, F.F. Wang and X.R. Ding	1538
Uncatalyzed Oxidation of Cyclohexane in the Microchannels	
L. Wang, M.Q. Zhu, J.G. Lu and H.D. Hu	1542