# Table of Contents

**Preface**

**Graphene Basics and Applications**
M.R. Banwaskar and S.N. Dachawar 3

**Uniformity of Epitaxial Graphene on On-Axis and Off-Axis SiC Probed by Raman Spectroscopy and Nanoscale Current Mapping**
S. Sonde, F. Giannazzo, J.R. Huntzinger, A. Tiberj, M. Syväjärvi, R. Yakimova, V. Raineri and J. Camassel 7

**Deep UV Raman Spectroscopy of Epitaxial Graphenes on Vicinal 6H-SiC Substrates**
S. Kamoi, N. Hasuike, K. Kisoda, H. Harima, K. Morita, S. Tanaka and A. Hashimoto 11

**Optical Transmission of Epitaxial Graphene Layers on SiC in the Visible Spectral Range**
A. Drabińska, J. Borysiuk, W. Strupiński and J.M. Baranowski 15

**Density Functional Simulations of Physisorbed and Chemisorbed Single Graphene Layers on 4H-SiC (0001), (000-1) and 4H-SiC:H Surface**
J.P. Goss, P.R. Briddon, N.G. Wright and A.B. Horsfall 19

**The Formation of an Epitaxial-Graphene Cap Layer for Post-Implantation High Temperature Annealing of SiC and its *In Situ* Removal by Si-Vapor Etching**
S. Ushio, A. Adachi, K. Matsuda, N. Ohtani and T. Kaneko 23

**Nanobaguettes Single Epitaxial Graphene Layers on SiC(11-20)**
A. Caboni, N. Camara, E. Pausas, N. Mestres and P. Godignon 27

**High Temperature Graphene Formation on Capped and Uncapped SiC**
R. Göckeritz, D. Schmidt, M. Beleites, G. Seifert, S.P. Krischok, M. Himmerlich and J. Pezoldt 31

**Observations on C-Face SiC Graphene Growth in Argon**
D.K. Gaskill, J.K. Hite, J.C. Culbertson, G.G. Jernigan, J.L. Tedesco, L.O. Nyakiti, V.D. Wheeler, R.L. Myers-Ward, N.Y. Garces and C.R. Eddy 35

**Cellular Interactions on Epitaxial Graphene on SiC (0001) Substrates**
A. Oliveros, C. Coletti, C.L. Frewin, C. Locke, U. Starke and S.E. Saddow 39

**Structural Characterization of Graphene Grown by Thermal Decomposition of Off-Axis 4H-SiC (0001)**
F. Giannazzo, M. Rambach, W. Lerch, C. Bongiorno, S. di Franco, E. Rimini and V. Raineri 43

**Almost Free Standing Graphene on SiC(000-1) and SiC(11-20)**
B. Jabakhanji, N. Camara, A. Caboni, C. Consejo, B. Jouault, P. Godignon and J. Camassel 51

**Transmission-Electron-Microscopy Observations on the Growth of Epitaxial Graphene on 3C-SiC(110) and 3C-SiC(100) Virtual Substrates**
H. Handa, S. Ito, H. Fukidome and M. Suemitsu 58

**Raman Spectroscopy and XPS Analysis of Epitaxial Graphene Grown on 4H-SiC (0001) Substrate under an Argon Pressure of 900 mbar Environment**
D.C. Wang, Y.M. Zhang, Y.M. Zhang, H. Guo and Y.H. Wang 62

**A DC Comparison Study between H-Intercalated and Native Epi-Graphenes on SiC Substrates**
M. Winters, M. Thorsell, J. ul Hassan, N. Rorsman, E. Janzén and H. Zirath 66

**Thickness Uniformity and Electron Doping in Epitaxial Graphene on SiC**
J. Eriksson, D. Puglisi, R. Vasiliauskas, A. Lloyd Spetz and R. Yakimova 70

**Continuously Large-Scale Preparation of Multi-Layer Graphene Grown on Polycrystalline SiC Microspheres**
J. Ma, G.Y. Li, Z.Y. Chu, T.J. Hu, Y.H. Li and X.D. Li 74

**Epitaxial Graphene Growth on 6H-SiC (0001) Substrate by Confinement Controlled Sublimation of Silicon Carbide**
T.M. Lei, P.F. Deng, Y.M. Zhang and H. Guo 78

**High Quality Graphene Formation on 3C-SiC/4H-AlN/Si Heterostructure**
S. Jiao, Y. Murakami, H. Nagasawa, H. Fukidome, I. Makabe, Y. Tateno, T. Nakabayashi and M. Suemitsu 82

**High-Rate Rotated Epitaxy of 3C-SiC(111) on Si(110) Substrate for Qualified Epitaxial Graphene on Silicon**
M. Suemitsu, S. Sanbonsuge, E. Saito, M.H. Jung, H. Fukidome and S. Filimonov 87

**Spatially Graded Graphitization on 4H-SiC (0001) with Si-Sublimation Gradient for High Quality Epitaxial Graphene Growth**
S. Ushio, Y. Kutsuma, A. Yoshii, N. Tamai, N. Ohtani and T. Kaneko 91

**Thickness Thinning of Epitaxial Graphene Grown on Carbon-Terminated 6H-SiC by Using Oxygen Plasma Etching**
X. Hao, Y.F. Chen, P.J. Li, Z.G. Wang, J.B. Liu and Y.R. Li 95

**The Registry of Graphene Layers Grown on SiC(000-1).**
L.I. Johansson, S. Watcharinyanon, A.A. Zakharov, R. Yakimova and C. Virojanadara 100

**Large Area Quasi-Free Standing Monolayer Graphene on 3C-SiC(111)**
U. Starke, C. Coletti, K. Emtsev, A.A. Zakharov, T. Ouisse and D. Chaussende 104

**Weak Localization and Universal Conductance Fluctuations on Epitaxial Graphene Grown on the C-Face of 8°off-Axis 4H-SiC Substrates**
B. Jabakhanji, N. Camara, C. Consejo and B. Jouault 108

**Nucleation Mechanism for Epitaxial Graphene on Si-Terminated SiC (0001) Surfaces**
Q.B. Liu, J. Li, J.J. Wang, S.B. Dun and Z.H. Feng 112

**Study of Epitaxial Graphene on Non-Polar 6H-SiC Faces**
B.K. Daas, K.M. Daniels, S. Shetu, T.S. Sudarshan and M.V.S. Chandrashekhar 116

**Micro- and Nano-Scale Electrical Characterization of Epitaxial Graphene on Off-Axis 4H-SiC (0001)**
F. Giannazzo, C. Bongiorno, S. di Franco, E. Rimini and V. Raineri 120

**Epitaxial Single-Layer Graphene on the SiC Substrate**
S.Y. Davydov and A.A. Lebedev 124

**Optimizing the Vacuum Growth of Epitaxial Graphene on 6H-SiC**
T. Hopf, K. Vassilevski, E. Escobedo-Cousin, N. Wright, A.G. O'Neill, A.B. Horsfall, J.P. Goss, A. Barlow, G. Wells and M. Hunt 128

**Formation of Graphene onto Atomically Flat 6H-SiC**
G. Rius, N. Mestres, Y. Tanaka, H. Miyazaki, O. Eryu and P. Godignon 132

**Investigation on the Heat Conduction in Si/3C-SiC/Graphene Film**
Z. Wang and H.W. Guan 136

**Growth Rate and Thickness Uniformity of Epitaxial Graphene**
W. Strupiński, A. Drabińska, R. Bożek, J. Borysiuk, A. Wysmolek, R. Stepniewski, K. Kościewicz, P. Caban, K. Korona, K. Grodecki, P.A. Geslin and J.M. Baranowski 140

**Synthesis of Large-Area and Monolayer of Graphene: Role of Transition Metal Support and Growth Time by CVD Method**
H. Gao, Y.F. Wang, Y.X. Liu, E.Q. Xie and P.M. Ajayan 144

**Local Solid Phase Epitaxy of Few-Layer Graphene on Silicon Carbide**
E. Escobedo-Cousin, K. Vassilevski, I.P. Nikitina, N.G. Wright, A.G. O'Neill, A.B. Horsfall and J.P. Goss 149

**Growth of Few Layers Graphene on Silicon Carbide from Nickel Silicide Supersaturated with Carbon**
K. Vassilevski, I.P. Nikitina, A.B. Horsfall, N.G. Wright and C.M. Johnson 153

**Solid Phase Growth of Graphene on Silicon Carbide by Nickel Silicidation: Graphene Formation Mechanisms**
E. Escobedo-Cousin, K. Vassilevski, T. Hopf, N. Wright, A.G. O'Neill, A.B. Horsfall and J.P. Goss 157

**Epitaxial Graphene Growth Studied by Low-Energy Electron Microscopy and First-Principles**
H. Kageshima, H. Hibino and M. Nagase 161

**Oxidation of CVD Growth Single-Layer Graphene**
H. Gao and Y. Zhang 167

**Single and Multilayer Growth of Graphene from the Liquid Phase**
P. Kula, R. Pietrasik, K. Dybowski, R. Atraszkiewicz, W. Szymanski, L. Kolodziejczyk, P. Niedzielski and D. Nowak 171

**Optimising the Growth of Few-Layer Graphene on Silicon Carbide by Nickel Silicidation**
E. Escobedo-Cousin, K. Vassilevski, T. Hopf, N. Wright, A. O'Neill, A.B. Horsfall, J. Goss and P. Cumpson 176

**Direct Growth of Graphene on SiO2 by Using Ga-Ni Flux**
Q. Yu, J.C. Zhang, B. Cao, S.Y. He, C.H. Wang, J.C. Zhang, J.F. Wang and K. Xu 180

**Ion-Beam Irradiation Effect in the Growth Process of Graphene on Silicon Carbide-on-Insulator Substrates**
M. Okano, D. Edamoto, K. Uchida, I. Omura, T. Ikari, M. Nakao and M. Naitoh 184

**Plasma-Based Chemical Modification of Epitaxial Graphene**
S.G. Walton, S.C. Hernández, M. Baraket, V.D. Wheeler, L.O. Nyakiti, R.L. Myers-Ward, C.R. Eddy and D.K. Gaskill 188

**Silicon Nitride as Top Gate Dielectric for Epitaxial Graphene**
P. Wehrfritz, F. Fromm, S. Malzer and T. Seyller 192

**Energy Gaps Induced by a Semiconducting Substrate in the Epitaxial Graphene Density of States**
S.Y. Davydov, A.A. Lebedev and S.P. Lebedev 196

**Techniques for the Dry Transfer of Epitaxial Graphene onto Arbitrary Substrates**
J.D. Caldwell, T.J. Anderson, K.D. Hobart, J.C. Culbertson, G.G. Jernigan, F.J. Kub, J.L. Tedesco, J.K. Hite, M.A. Mastro, R.L. Myers-Ward, C.R. Eddy, P.M. Campbell and D.K. Gaskill 200

**Strain and Charge in Epitaxial Graphene on Silicon Carbide Studied by Raman Spectroscopy**
J. Röhrl, M. Hundhausen, F. Speck and T. Seyller 204

**Electrochemically Exfoliated Graphene**
M.C. Terence, E.E. Silva and J.A.G. Carrió 208

**Fabrication and Electrochemical Performance of Nitrogen-Doped Graphene Synthesized by Hydrothermal Method**
S. Liang, M. Luo, Y.Y. Dou, L. Guo, B. Liang, H.B. Li and J. Li 213

**Electrochemically Preparation of Functionalized Graphene Using Sodium Dodecyl Benzene Sulfonate (SDBS)**
E.H. Joo, T. Kuila, N.H. Kim, J.H. Lee, S.A. Kim, E.G. Park and U.H. Lee 217

**One-Step Process for the Exfoliation and Surface Modification of Graphene by Electrochemical Method**
P. Li, S.H. Bae, Q.Y. Zan, N.H. Kim and J.H. Lee 221

**The Synthesis of Graphene Sheets Using Sodium Dodecyl Sulfate (SDS) as a Surfactant; An Electrochemical Process**
M. Moradi, J. Aghazadeh and A. Mansouri Tehrani 225

**Evidence of Electrochemical Graphene Functionalization by Raman Spectroscopy**
K.M. Daniels, B.K. Daas, N. Srivastava, C. Williams, R.M. Feenstra, T.S. Sudarshan and M.V.S. Chandrashekhar 230

**Reduced Graphene Oxide Nanosheets Functionalized with Bile Salts as Support for Electrochemical Catalysts**
Z.P. Sun, W.Q. Zhang and X.M. Lu 234

**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 245

**Surface Cleaning of Graphene by $CO_2$ Cluster**
H.M. Choi, J.A. Kim, Y.J. Cho, T.Y. Hwang, J.W. Lee and T.S. Kim 251

**Controlled Synthesis of Surface-Clean Monolayer Graphene**
X.S. Wang, J.J. Li, Q. Zhong, Y. Zhong and M.K. Zhao 254

**Differences between Graphene Grown on Si-Face and C-Face**
N. Camara, A. Caboni, J.R. Huntzinger, A. Tiberj, N. Mestres, P. Godignon and J. Camassel 260

**The Characteristics of Graphene Prepared by Different Methods**
H.G. Chen, C.X. Li and Q. Li 264

**X-Ray Photoelectron Spectroscopy Study on Reduction of Graphene Oxide with Hydrazine Hydrate**
W.S. Ma, J.W. Zhou and X.D. Lin 268

**Toward the High-Quality Graphene for Optoelectronic Applications by Optimization of the Growth and Transfer Parameters**
L. Wang, J.H. Zhang and L.Q. Yang 273

**A Mild and Efficient Approach for the Reduction of Graphene Oxide**
Y.F. Wang, C.H. Han, B. Liu, D.M. Zhao, D.Y. Zhao and L.G. Sun 277

**Synthesis and Characterization of Reduced Graphene Oxide**
C.R. Minitha and R.T. Rajendrakumar 281

**The Impact of Graphite Source and the Synthesis Method on the Properties of Graphene Oxide**
L. Richtera, J. Omelková, R. Bálková, M. Zmrzlý, J. Másilko and S. Hermanová 286

**Preparation of Graphene by Green Reduction Method and Characterization**
D.Z. Chen and X.M. Lin 290

**Preparation and Characterization of Graphene by Oxidation-Reduction Method**
Z.X. Hou, Y. Zhou, S.H. Wang, M.H. Wang, X.D. Hu, L.D. Zhou and G.B. Li 296

**Effects of Process Parameters on the Particle Size Distribution of Graphene Oxide Aqueous Dispersion**
X.B. Hu, Y. Yu, J.E. Zhou and L.X. Song 300

**A Simple and Effective Method for the Preparation of Porous Graphene Nanosheets**
J. Sun, Q.Z. Xue, Y.G. Du, F.J. Xia and Q.K. Guo 304

**Tin-Powder Mediated Facile Route for the Reduction of Graphene Oxide**
N.H. Kim, T. Kuila, C.F. Zhang and J.H. Lee 308

**One-Step Synthesis of Aqueous Graphene Dispersion Stabilized by Sodium Dodecylbenzene Sulfonate**
K. Luo, X.G. Li, H.M. Wang, P. Wang and C. Wei 312

**Multiscale Fracture in Peeling of Highly Oriented Pyrolytic Graphite**
B. Yang and N. Vijayanand 318

**Exfoliation of Graphite via Edge-Functionalization with Carboxylic Acid-Terminated Hyperbranched Poly(ether-ketone)s**
I.Y. Jeon, S.Y. Bae and J.B. Baek 334

**Role of Ion Irradiation Induced Lattice Defects on Nanoscale Capacitive Behavior of Graphene**
S. Sonde, F. Giannazzo, V. Raineri, S. di Franco, A. Marino and E. Rimini 338

**Synthesis of Graphene Nanosheets *via* Thermal Exfoliation of Pretreated Graphite at Low Temperature**
L.Y. Meng and S.J. Park 345

**A Strategy to Produce Single and Double Layer Graphene Sheets**
S.R. Dhakate, N. Chauhan, S. Sharma and R.B. Mathur 349

**Carbon Nanostructures Produced by an AC Arc Discharge**
M. Vittori Antisari, D. Mirabile Gattia, L. Brandão, R. Marazzi and A. Montone 354

**Preparation and Characterization of Graphite Oxide**
Z.X. Hou, Y. Zhou, S.H. Wang, M.H. Wang, X.D. Hu and G.B. Li 360

**Evolution of Cu Surface Morphology and its Effect on Graphene Synthesized by Chemical Vapor Deposition**
A. Ibrahim, A. Owais, M. Atieh, R. Karnik and T. Laoui 364

**Synthesis of Stable Colloidal Suspension of Graphene**
Y.N. Lv, C.A. Tao, H.P. Liu, J.F. Wang, H. Zhu, Y.Y. Zhang and H.T. Li 370

**Study on the Preparation and Fluorescence Performance of Graphene Oxide**
C.X. Li, X.D. Zhang, D.Y. Jiang and Q. Li 374

**A Green Approach for Highly Reduction of Graphene Oxide by Supercritical Fluid**
C.Y. Kong, Y. Shiratori, T. Sako and F. Iwata 378

**Surface Charge Research of Graphene Oxide, Chemically Reduced Graphene Oxide and Thermally Exfoliated Graphene Oxide**
M.J. Li, C.M. Liu, H.B. Cao and Y. Zhang 382

**The Preparation of Graphene via Thermal Reduction Method**
J.F. Wang, Y.N. Lv, Y. Long, C.A. Tao and H. Zhu 387

**Microwave-Hydrothermal Synthesis and Characterization of Graphene**
Z.H. Xiao, S.S. Wu, Y.L. Sun, Y.L. Zhao and Y.M. Wang 391

**Large-Scale Growth of Nitrogen-Doped via Solvothermal Synthesis**
X.L. Chen, N. Wu, G.Z. Gou, L. Shi, S.Q. Pan and W. Liu 395

**Preparation of Graphene with Ultrasound-Assisted in the Process of Oxidation**
H.J. Yu, Z.G. Zou, F. Long, C.Y. Xie and H. Ma 399

**Research on Graphene Preparation by Liquid Phase Ultrasonic Exfoliation and Antifriction Performance in Water**
H.C. Zhao, Y.L. Qiao and Y. Zang 403

**Comparison and Characterization of Two Preparation Methods of Graphene Oxide**
H.B. Liu, W.Y. Zhang, F. Lin and H.D. Cao 410

**The Influence of Temperature and Oxidation Time on the Preparation of Graphite Oxide**
Q. Huang, H.J. Sun and T.J. Peng 415

**Acidification Assisted Preparation of Graphite Oxide and Graphene**
Y. Lei, J. Xu, R. Li and F.F. Chen 420

**Preparation and Characterization of Graphene by the Oxidation Reduction Method**
Y. Long, J.F. Wang, Y.N. Lv, C.A. Tao, L. Xia and H. Zhu 424

**Preparation of Graphene Oxide Based on Expanded Graphite**
L.L. Liu, M.Z. An, S.C. Xing, X.J. Shen, C. Yang and X.L. Xu 428

**Fabrication of Nano Hollow Graphene Oxide Spheres via Water-in-Oil Emulsion**
F. Li, D.L. Zhao, L.Z. Bai and D.D. Zhang 434

**Equipment Design for Supercritical Cleavage Technology**
C.H. Zhou, Y. Bai and M.F. Hu 438

**Modified Reduced Graphene Oxide with Enhanced Solubility and Conductivity and its Application**
X.P. Zeng 442

**How Graphene Layers Depend on Drying Methods of Graphene Oxide**
Y.N. Lv, J.F. Wang, Y. Long, C.A. Tao, L. Xia and H. Zhu 446

**A Facile and Efficient Method to Prepare Exfoliated and Reduced Graphene Nanosheets by Detonation**
Y.H. Guo, D.X. Zhuo, L.X. Wu, L. Ma, Z.X. Weng and R. Wang 450

**Fabrication of Highly Ordered Two-Dimensional Graphene Arrays on Patterned Substrate**
M.J. Chang, J. Liu and Y. Li 457

**Direct Synthesis and Characterization of Three-Dimensional Graphene Foam**
W.B. Huang, G.L. Wang, F.Q. Gao, Z.T. Qiao, G. Wang and L. Tao 463

**Graphene Oxide Reduced and Dispersed by Polysaccharide**
Y.Q. He, R.Q. Li, D. Wu, Y.L. Zhang, J.P. Gao and J. Yan 467

**Low Temperature Synthesis of Nano-Carbon Materials Using a Water-Soluble Catalyst Support by Chemical Vapor Deposition**
L.S. Chen and C.J. Wang 471

**Stable Reduced Graphene Oxide Suspension Modified by PAMAM**
Y.Q. He, F. Wu, D. Wu, Y.L. Zhang, J.P. Gao and J. Yan 475

**Graphene Oxide Prepared via Ultrasonic Assisted Chemical Oxidation Method and its Fluorescence Property**
Y.Q. Cui, Z. Wu, L.M. Dong, Q. Li and Z.D. Han 479

**Graphene on Carbon-Face SiC{0001} Surfaces Formed in a Disilane Environment**
N. Srivastava, G.W. He and R.M. Feenstra 483

**Stable Dispersed Graphenes Prepared by the Reduction of Graphene Oxides with Mercapto Acid**
Y.F. Wang, X.J. Cao, M.Q. Zheng, D.M. Zhao, D.Y. Zhao and L.G. Sun 487

**Graphene Synthesis on Specified Location**
H. Zhang, C.X. Zhao, X. Guo, Y.W. Lu and Z.W. Liu 491

**Study on Catalysis Properties of Graphene Catalyst Loading Iron Oxide**
Q.W. Yang, P.F. Li, Y. Zhu, C. Ying, J.L. Zuo, H.J. Dan and S.H. Shi 497

**Research on Carbon Materials with Synthesis and Characterization of Graphene-Based**
P.P. Li and B.X. Deng 501

**Graphene-on-Porous-Silicon Carbide Structures**
M.G. Mynbaeva, A.A. Sitnikova, S.P. Lebedev, V.N. Petrov, D.A. Kirilenko, I.S. Kotousova, A.N. Smirnov and A.A. Lavrent'ev 506

**Liquid Crystal Assisted Selective Separation of Large Graphene Oxide and its Size Dependent Oxygen Reduction Catalytic Effect**
K.E. Lee, J.E. Kim, J.W. Lim and S.O. Kim 510

**Structural and Textural Study of Highly Porous Carbon Nanospheres**
P. González García, E. Urones-Garrote, D. Ávila-Brande, L. García-González and L.C. Otero-Díaz 514

**Synthesis of Perylene-Containing Polyimides for Non-Covalent Functionalization of Graphene by Self-Assembly**
W.J. He, C.E. He, R.G. Peng and Y.K. Yang 519

**Graphene Film Growth on Cu Foil via Direct Carbon Atoms Deposition by Using SSMBE**
Z.L. Liu, C.Y. Kang, L.L. Fan, C.W. Zou and P.S. Xu 523

**Preparation, Purification and Properties of Carbon Nanotubes**
Y.P. Yu 527

**Synthesis of Sulfur-Doped Graphene from Sulfonated Polystyrene**
H. Gao, H.J. Guo and J.Z. Chen 533

**Growth of Wafer Size Graphene on SiC Substrates**
X.F. Chen, R.S. Wei, Y.Q. Gao, Y. Peng, S. Song, L.H. Wang, X.B. Hu, X.G. Xu and M.H. Jiang 537

**X-Ray Diffraction and Raman Spectroscopy Study of Strain in Graphene Films Grown on 6H-SiC(0001) Using Propane-Hydrogen-Argon CVD**
A. Michon, L. Largeau, A. Tiberj, J.R. Huntzinger, O. Mauguin, S. Vézian, D. Lefebvre, F. Cheynis, F. Leroy, P. Müller, T. Chassagne, M. Zielinski and M. Portail 546

**Surface Evolution of 4H-SiC(0001) during *In Situ* Surface Preparation and its Influence on Graphene Properties**
J. Ul Hassan, A. Meyer, S. Cakmakyapan, O. Kazar, J. Ingo Flege, J. Falta, E. Ozbay and E. Janzén 550

**Graphene/SiC Interface Control Using Propane-Hydrogen CVD on 6H-SiC(0001) and 3C-SiC(111)/Si(111)**
A. Michon, E. Roudon, M. Portail, D. Lefebvre, S. Vézian, Y. Cordier, A. Tiberj, T. Chassagne and M. Zielinski 554

**Analysis of the Formation Conditions for Large Area Epitaxial Graphene on SiC Substrates**
R. Yakimova, C. Virojanadara, D. Gogova, M. Syväjärvi, D. Siche, K. Larsson and L.I. Johansson 559

**Structural Evaluation of Graphene/SiC (0001) Grown in Atmospheric Pressure**
J. Boeckl, W.C. Mitchel, E. Clarke, R.L. Barbosa and W.J. Lu 563

**Graphene Growth on C and Si-Face of *4H*-SiC – TEM and AFM Studies**
J. Borysiuk, R. Bożek, W. Strupiński and J.M. Baranowski 567

**Epitaxial Graphene Elaborated on 3C-SiC(111)/Si Epilayers**
A. Ouerghi, M. Portail, A. Kahouli, L. Travers, T. Chassagne and M. Zielinski 571

**Growth and Characterization of Epitaxial Graphene on SiC Induced by Carbon Evaporation**
A. Al-Temimy, C. Riedl and U. Starke 575

**Control of Epitaxial Graphene Thickness on 4H-SiC(0001) and Buffer Layer Removal through Hydrogen Intercalation**
J. Ul Hassan, C. Virojanadara, A. Meyer, I.G. Ivanov, J.I. Flege, S. Watcharinyanon, J. Falta, L.I. Johansson and E. Janzén 579

**CVD Growth of Graphene on 2'' 3C-SiC/Si Templates: Influence of Substrate Orientation and Wafer Homogeneity**
M. Portail, A. Michon, S. Vézian, D. Lefebvre, S. Chenot, A. Ouerghi, M. Zielinski, T. Chassagne and Y. Cordier 583

**Hydrogen Intercalation below Epitaxial Graphene on SiC(0001)**
C. Riedl, C. Coletti, T. Iwasaki and U. Starke 587

**Structural and Electrical Properties of Graphene Films Grown by Propane/Hydrogen CVD on 6H-SiC(0001)**
A. Michon, E. Roudon, M. Portail, B. Jouault, S. Contreras, S. Chenot, Y. Cordier, D. Lefebvre, S. Vézian, M. Zielinski, T. Chassagne and J. Camassel 593

**Quasi-Freestanding Graphene on SiC(0001)**
F. Speck, M. Ostler, J. Röhrl, J. Jobst, D. Waldmann, M. Hundhausen, L. Ley, H.B. Weber and T. Seyller 597

**Decoupling the Graphene Buffer Layer from SiC(0001) via Interface Oxidation**
M. Ostler, R.J. Koch, F. Speck, F. Fromm, H. Vita, M. Hundhausen, K. Horn and T. Seyller 601

**Temperature Dependent Structural Evolution of Graphene Layers on 4H-SiC(0001)**
S. Sonde, C. Vecchio, F. Giannazzo, C. Bongiorno, S. di Franco, M. Rambach, E. Rimini and V. Raineri 605

**Stability and Reactivity of [11-20] Step in Initial Stage of Epitaxial Graphene Growth on SiC(0001)**
H. Kageshima, H. Hibino, H. Yamaguchi and M. Nagase 609

**Controlled Growth of Carbon Spheres by Chemical Vapor Deposition Based on Anodic Aluminum Oxide Nano-Template**
L.S. Chen, C.J. Wang and G.R. Chen 613

**Study of Magnetism of Two-Dimensional Ferromagnetic Graphene**
B.Z. Mi, Y.H. Xue, H.Y. Wang, Y.S. Zhou and X.L. Zhong 619

**Enhanced Spin Relaxation in Nanocrystals of Different Geometries**
V.K. Henner, P.V. Kharebov and G. Sumanasekera 624

**Role of Vacancies in Zigzag Graphene Nanoribbons: An *Ab Initio* Study**
K. Tarawneh and N. Al-Aqtash 628

**Effect of Varying Dielectric Constant on Relative Stability for Graphene Nanoribbon Interconnects**
M. Farrokhi, R. Faez, S.H. Nasiri and B. Davoodi 637

**Effect of Varying Aspect Ratio on Relative Stability for Graphene Nanoribbon Interconnects**
M. Farrokhi, R. Faez, S.H. Nasiri and B. Davoodi 641

**Size Dependent Mechanical Properties of Graphene Nanoribbons: Molecular Dynamics Simulation**
Y.J. Sun, F. Ma and K.W. Xu 646

**Theoretical Investigation on Electron Transport and the Effect on Thermal Transport in Graphene Ribbon**
J.F. Wang and H.Q. Xie 651

**A Review on Fabrication Methods of High-Quality Graphene Nanoribbons**
H.L. Zhang, C.Y. Zhang and D.D. Shi 655

**Electronic Structure and Optical Property of Phosphorus Doped Semiconducting Graphene Nanoribbons**
A.Q. Chen 659

**Simulation of Dirac Tunneling Current of an Armchair Graphene Nanoribbon-Based P-N Junction Using a Transfer Matrix Method**
E. Suhendi, R. Syariati, F.A. Noor, N. Kurniasih and Khairurrijal 663

**Charge Carrier Localisation in Disordered Graphene Nanoribbons**
G. Schubert and H. Fehske 668

**Electron Transport in Zigzag Graphene Nanoribbons with a Tetra-Vacancy Complex: A Perfect Spin Filter**
W. Lu and S.H. Ke 673

**Tight-Binding Approximation Calculation on the Electronic Structure of Graphene and Graphene Nanoribbons**
H.X. Wang, C.L. Yang, Y.Z. Zhu and N.C. Yang 680

**Electron Transport Properties of Rippled Zigzag Graphene Nanoribbon**
Z.K. Tao, J.W. Chen, W. Wang and L. Chen 685

**Electronic Properties of Au-Doped Narrow Armchair Graphene Nanoribbons: A First Principle Calculations**
W.H. Wang, C.L. Zhao and X.J. Ma 689

**Modeling of Drain Current in Armchair Graphene Nanoribbon Field Effect Transistor Using Transfer Matrix Method**
E. Suhendi, F.A. Noor, N. Kurniasih and Khairurrijal 693

**A Theoretical Model of Band-to-Band Tunneling Current in an Armchair Graphene Nanoribbon Tunnel Field-Effect Transistor**
C.S.P. Bimo, F.A. Noor, M. Abdullah and Khairurrijal 697

**The Effects of Heteroatom-Doping in Stone-Wales Defects on the Electronic Properties of Graphene Nanoribbons**
Z.Y. Wang 701

**Electron Transport of Right-Angle Graphene Nanoribbons**
H.D. Li and J.Z. Niu 706

**First-Principles Study of the Electron Transport Behavior of Short Graphene Nanoribbon**
Y.W. Li, J.H. Yao, S.K. Zhong, J.Q. Jiang and X.X. Huang 711

**Thermoelectric Performance of Twisted Graphene Nanoribbons**
W.J. Liu, S.H. Cai and M.S. Deng 715

**Impact of Substrate Steps and of Monolayer-Bilayer Junctions on the Electronic Transport in Epitaxial Graphene on 4H-SiC (0001)**
F. Giannazzo, I. Deretzis, A. La Magna, S. di Franco, N. Piluso, P. Fiorenza, F. Roccaforte, P. Schmid, W. Lerch and R. Yakimova 721

**Electronic Structure Tuning and Interface Charge Transfer in Hybrid Graphene/Titania and Adatom/Graphene/Titania: First Principles Calculations**
Z.Y. Zhang, D.C. Sung and S.Y. Hong 725

**Electronic and Structural Properties of Turbostratic Epitaxial Graphene on the 6H-SiC (000-1) Surface**
T. Jayasekera, K.W. Kim and M.B. Nardelli 733

**Peculiarities of the Electron-Phonon Interaction in Graphite Containing Metallic Intercalated Layers**
A. Feher, S.B. Feodosyev, I.A. Gospodarev, V.I. Grishaev, K.V. Kravchenko, E.V. Manzhelii and E.S. Syrkin 739

**Study of Electronic and Magnetic Properties of Nitrogen Doped Graphene Oxide**
E. Jayabal, R. Rajendiran and V. Rengarajan 746

**Temperature Dependence Electron-Impurity Scattering Rate in Doped Bilayer Graphene**
D.K. Patel, K.N. Vyas and A.C. Sharma 752

**Third Neighbor Analytic Tight-Binding Solutions for Electronic Structure of Carbon Nanosystems**
I. László 757

**Geometrical and Electronic Structure Investigations of S-Doped Graphene**
D.M. Bi, L. Qiao, X.Y. Hu and S.J. Liu 763

**First Principles Calculations of the Relative Stability, Structure and Electronic Properties of Two Dimensional Metal Carbides and Nitrides**
D.D. Sun, Q.K. Hu, J.F. Chen and A.G. Zhou 768

**Electronic Properties of Boron and Nitrogen Doped Graphene**
S. Seenithurai, R.K. Pandyan, S.V. Kumar and M. Mahendran 773

**Fine Spin Filtering Effect in Co-Phthalocyanine Molecule Induced by the Spin Polarization of Co Atom**
Y.H. Zhou, X.H. Qiu, L.L. Zhou and Y.L. Peng 792

**First-Principle Calculations for Magnetism of Mn-Doped Graphene**
J.J. Liu, T.M. Lei, Y.M. Zhang, P.T. Ma and Z.Y. Zhang 796

**Interfacial Thermal Resistance and Thermal Rectification in Graphene with Geometric Variations of Doped Nitrogen: A Molecular Dynamics Study**
J.H. Shi, G. Yang, X.L. Li and X. Huang 800

**Carbon Molecules on a Copper Substrate**
T. Rozouvan, I. Shaykevich and S. Rozouvan 805

**Theoretical Study on Adsorption and Doping of Pd Atom on Graphene**
L. Qiao, X.Y. Hu, D.M. Bi and L.J. Zhao 819

**Model of Nonuniform Channel for the Charge Carrier Transport in Nanoscale FETs**
V.P. Popov and M.A. Ilnitsky 823

**On Chiral Model of Graphene**
Y.P. Rybakov 830

**Why and How the Zigzag Edge of Suspended Graphene Sheet where Deformed**
B. Barakati, A. Yazdani, F. Soheilian and M. Ghazanfari 834

**Controllable Tuning of the Spin-Dependent Transport in the Graphene Sheet**
C.M. Liu, Z. Li, J.L. Wang, L.L. Zhao and Y. Wang 838

**Influence of Intercalated Silicon on the Transport Properties of Graphene**
J.P. Goss, P.R. Briddon, V.K. Nagareddy, N.G. Wright, A.B. Horsfall, J.D. Caldwell, D.K. Gaskill and G.G. Jernigan 842

**Origin of the Current Transport Anisotropy in Epitaxial Graphene Grown on Vicinal 4H-SiC (0001) Surfaces**
F. Giannazzo, I. Deretzis, A. La Magna, G. Nicotra, C. Spinella, G. Fisichella, P. Fiorenza, R. Yakimova and F. Roccaforte 846

**Low-Temperature Transport Properties of Graphene and Multilayer Graphene on 6H-SiC**
A.A. Lebedev, N.V. Agrinskaya, V.A. Berezovets, V.I. Kozub, S.P. Lebedev, A.A. Sitnikova and D.A. Kirilenko 851

**Transport Properties of Single-Layer Epitaxial Graphene on 6H-SiC (0001)**
J. Jobst, D. Waldmann, K.V. Emtsev, T. Seyller and H.B. Weber 855

**Molecular Gas Adsorption Induced Carrier Transport Studies of Epitaxial Graphene Using IR Reflection Spectroscopy**
B.K. Daas, W.K. Nomani, K.M. Daniels, T.S. Sudarshan, G. Koley and M.V.S. Chandrashekhar 860

**The Influence of Atmosphere on Electrical Transport Properties in Bilayer Graphene FET by CVD Methods**
G. Peng, X.Y. Yu, Y.Q. Zhou, G. Wang, L. Wang and Y.L. He 864

**The Effect of Corner Form on Thermal Transport of Z-Shaped Graphene Nanojunctions with Composite Properties of Crystal**
Z.G. Bao and H.Q. Yang 869

**Thermal Stability of Tilt Grain Boundaries in Graphene**
J.P. Mendez, F. Macias and M.P. Ariza 873

**The Progress of Graphene in Thermal Transportation**
M.Z. Wang, X. Xing and W. Yu 877

**Skyrmion Excitations in Graphene**
B.D. Zhao and M. Xiang 885

**First-Principles Study of Energy Band Gap of Graphene-Like B-C-N by Strain**
X.M. Xu and Y. Lu 891

**Energy Band Calculation of Spiral Single-Walled Carbon Nanotubes**
H.X. Wang, Z.B. Song and D.Z. Liu 896

**Nonlinear Electrodynamic and Optical Properties of Graphene**
S.A. Mikhailov 900

**Breakdown of the Quantum Hall Regime in a 'Confined' Graphene**
Y. Morita 904

**Nonlinear TE-Polarized Surface Plasmons at the Interface between Graphene and Metamaterials**
Y. Huang and L.H. Wu 908

**Local Electrical Properties of the 4H-SiC(0001)/Graphene Interface**
S. Sonde, C. Vecchio, F. Giannazzo, R. Yakimova, E. Rimini and V. Raineri 913

**Influence of Defects on Elastic Buckling Properties of Single-Layered Graphene Sheets**
B.L. Li, L.J. Zhou and J.G. Guo 921

**Experimental Study on Mechanisms of Buckling and Kink-Band Formation in Graphene Nanosheets**
C.C. Wen, T.W. Chang and W.S. Kuo 925

**Vibration Properties of Multi-Layered Graphene Sheets**
M.L. Tian, J.B. Wang, X.Q. He and Y.Z. Sun 931

**Nanoscale Modeling and Elastic Properties of Portlandite and Graphene Based on Atomic Finite Element Method**
J. Fu, F. Bernard and S. Kamali-Bernard 936

**Molecular Dynamics Simulation of Fracture Strength and Morphology of Defective Graphene**
M.C. Wang, C. Yan, D. Galpaya, Z.B. Lai, L. Ma, N. Hu, Q. Yuan, R.X. Bai and L.M. Zhou 942

**Scanning Probe Microscope Observation to Morphology of Typical Carbon Materials**
X.R. Zhu, J.F. Wang and J. Li 949

**Fundamentals of Two-Dimensional Crystallographic Carbon Form and its Future Directions: A Review**
M.S. Shamsudin, S.J. Fishlock, R. Ahmad, M. Rusop Mahmood, S.M. Sanip and S.H. Pu 953

**Experimental Investigation on Surface Tension of Water-Based Graphene Oxide Nanofluids**
Z.Z. Zheng 959

**Strength Hierarchy for Nano-Sized Crystals**
S. Kotrechko, I. Mikhailovskij, T. Mazilova and O. Ovsjannikov 964

**Equivalent Mechanical Properties of Graphene Predicted by an Improved Molecular Structural Mechanics Model**
Y.Z. Cheng and G.Y. Shi 970

**The Prediction of Mechanical Properties of Graphene by Molecular Mechanics and Structural Mechanics Method**
Y.Z. Cheng and G.Y. Shi 976

**Analysis of Graphene Based on Femtosecond Probing**
H. Cui, X.B. Zhang, Q.J. Liang, J.F. Su, P. Yang, Y.Z. Duan and W. Shi 981

**Theory of Nano-Carbon Based Materials: Cyclotron Resonance, Kohn's Theorem and Hubbard Model**
K.N. Shrivastava 985

**Migration of Nanoparticles in Operating Media of Heat Exchange Systems**
M.A. Bubenchikov, A.I. Potekaev and A.M. Bubenchikov 994

**Multiscale Analysis Approach to Find the Dynamic Characteristics of Graphene Sheet**
S.O. Gajbhiye and S.P. Singh 998

**Zigzag Carbon Nanotubes under Simple Torsion – Structural Mechanics Formulation**
N.A. Kasti 1004

**Constitutive Equations for Graphene Based on Anisotropic Theory**
S.H. Ban, A.P. Hu, X.D. Jiang and X.Y. Li 1009

**Young's Modulus of Graphene Based on Variation Principle and Energy Conservation**
S.H. Ban, X.D. Jiang, A.P. Hu, X.Y. Li and N.M. Miao 1014

**Young's Modulus of Graphene Based on Finite Displacement Theory**
S.H. Ban, J.N. Ding, A.P. Hu, X.Y. Li and X.D. Jiang 1018

**Recognition of Topology Feature of Graphene by Image Processing Technique**
M.F. Wang, J.L. Feng, X.P. Zou, X.L. Li, P. Li, Q.J. Liu, W.F. Shan, Y. Han and Y.P. Shen 1023

**Backside Monitoring of Graphene on Silicon Carbide by Raman Spectroscopy**
F. Fromm, M. Hundhausen, M. Kaiser and T. Seyller 1028

**Carrier Mobility as a Function of Temperature in as-Grown and H-Intercalated Epitaxial Graphenes on 4H-SiC**
M. Winters, E.B. Thorsteinsson, E.Ö. Sveinbjörnsson, H.P. Gislason, J. Hassan, E. Janzén and N. Rorsman 1032

**Effect of Oxygen Plasma on the Optical Properties of Monolayer Graphene**
I. Santoso, R.S. Singh, P.K. Gogoi, T.C. Asmara, D.C. Wei, W. Chen, A.T.S. Wee, V.M. Pereira and A. Rusydi 1036

**Comparative Investigations on the Mechanical and Tribological Properties of Glass Fibre Reinforced Thermoplastic and Blended Graphene-Oxide Hybrid Thermoplastic Nanocomposites**
R. Geetha and P. Jawahar 1043

**Synthesis and Physical Properties of Graphene Nanosheets Reinforced Copper Composites**
B.W. Wei, D. Qu, C.F. Hu, F.Z. Li, T.L. Zhou, R.J. Xie and Z.M. Zhou 1047

***In Situ* Fabrication of Nanoscale Graphene Oxide/Polyaniline Composite and its Electrochemical Properties**
H.L. Wang, Q.L. Hao, X.F. Xia, Z.J. Wang, J. Tian, J.H. Zhu, C. Tang and X. Wang 1052

**Styrene-Butadiene Rubber/Graphene Nanocomposites: Effect of Co-Milling with Cyclic Butylene-Terephthalate**
I. Halász and T. Bárány 1056

**Synthesis of $Bi_{0.5}Sb_{1.5}Te_3$/Graphene Composite Powders**
B.B. Liang, Y. Li, L.L. Xu, L.J. Wang and W. Jiang 1062

**The Microstructural, Mechanical and Electro-Mechanical Properties of Graphene Aerogel-PVDF Nanoporous Composites**
G.P. Zheng, Z. Han and Y.Z. Liu 1067

**Preparation and Properties of Graphene/Polyamide 6 Composites by Melt Compounding**
P.P. Zhang, K.Y. Zhu, L.Q. Su and R. Xiao 1073

**Diffusion of $CO_2$ in Polymer Nanocomposites Containing Different Types of Carbon Nanoparticles for Solid-State Microcellular Foaming Applications**
M. Antunes, V. Realinho, G. Gedler, D. Arencón and J.I. Velasco 1077

**The Synthesis and Characterization of the Graphene Oxide Covalent Modified Phenolic Resin Nanocomposites**
D. Wang, J. Gao, W.F. Xu, F. Bao, R. Ma, C.J. Yan, T. Chen and G.Z. Wang 1089

**Synthesis and Characterization of Ag/Graphene Nanocomposites by Solid-Liquid Sonochemical Reactions**
T. Mochizuki, Y. Hayashi, J. Fukushima and H. Takizawa 1094

**Development of Multifunctional Silicon Nitride Based Nanocomposites**
C. Balázsi 1098

**Preparation and Properties of Graphene and its Nanocomposites**
C.C.M. Ma, S.T. Hsiao, W.H. Liao, S.M. Li, Y.S. Wang and C.W. Lin 1104

**Graphene Oxide/$Fe_3O_4$ Composites Prepared via *In Situ* Precipitation**
Z.W. Yang, X. Fan, L.A. Guo and W.T. Wei 1108

**Preparation and Characterization of Functionalized Graphene/Linear Low Density Polyethylene Nanocomposites**
T. Kuila, M.E. Uddin, N.H. Kim, G.H. Yoo and J.H. Lee 1113

**Non-Isothermal Crystallization Kinetics of Polyvinyl Alcohol-Graphene Oxide Composites**
C.P. Li, M. She and L.X. Kong 1117

**Preparation and Characterization of Graphene Oxide-ZnO Nanocomposites**
W.B. Zou, J.W. Zhu and X. Wang 1121

**Tribology Study of Silicon Nitride-Based Nanocomposites with Carbon Additions**
J. Pfeifer, G. Sáfrán, F. Wéber, V. Zsigmond, O. Koszor, P. Arató and C. Balázsi 1126

**A Facile One-Step Hydrothermal Synthesis of Graphene/$CeO_2$ Nanocomposite and its Catalytic Properties**
M. Srivastava, A.K. Das, P. Khanra, N.H. Kim and J.H. Lee 1130

**Preparation and Characterization of Multilayer Graphene by Mechanical Milling and Related Applications for Ceramic Composites**
P. Kun, O. Tapasztó, Z. Czigány and C. Balázsi 1134

**Electrical Properties of Graphene Filled Natural Rubber Composites**
Y. Srinivasarao, Y.S. Ri Hanum, C.H. Chan, K. Nandakumar and T. Sabu 1142

**Low Band Gap $Co_{80}Ni_{20}$@RGO Nanocomposite**
D. De, S. Majumdar and S. Giri 1146

**Effect of CTBN on Properties of Oxide Graphene/Epoxy Resin Composites**
C.F. Ouyang, Q. Gao, Y.T. Shi and W.T. Li 1151

**Preparation and Properties of Oxidized Graphene (OG)/Epoxy Resin (EP) Composite via Ultrasonic Oscillation**
Q. Gao, C.F. Ouyang, X.Q. Shan, Y.T. Shi, A. Wan and W.T. Li 1155

**Preparation and Superparamagnetic Properties of Graphene/$Fe_3O_4$ Nanocomposite**
D.L. Zhao, L.Z. Bai, X. Li and D.D. Zhang 1160

**Preparation of Graphene Nanosheet/Alumina Composites**
X. Liu, Y.C. Fan, Q. Feng, L.J. Wang and W. Jiang 1164

**A Comparison of the Effect of Hydroxyl Modified Carbon Nanotubes and Graphenes on the Electrical and Mechanical Properties of Their Polyurethane Composites**
S. Swain, S. Bhattacharya, R.A. Sharma and L. Chaudhari 1169

**Fabrication of Graphene Platelet (GPL)-Epoxy Nanocomposites and Characterization by Nanoindentation**
O.U. Colak and A. Zandiatashbar 1175

**Study on Thermal Conductivity of Multilayer Graphene/NR Composite**
G.L. Wu, L. Liu, X. Zong, Y. He and Z.P. Wang 1181

**Evaluation of Mechanical Properties of Polyester Composite with Graphene and Graphite through Three-Point Bending Test**
M. Bastiurea, M.S. Rodeanu, D. Dima, M. Murarescu and G. Andrei 1186

**Effect of Different Form of Carbon Addition on the Wear Behaviour of Copper Based Composites**
M. Chmielewski, K. Pietrzak, J. Dutkiewicz, W. Piekoszewski and R. Michalczewski 1192

**Fast and Simple Fabrication of RGO/Ag Nanocomposite with Homogenous Dispersion**
X.J. Jiang, G.Q. Luo, M.J. Li, Q. Shen and L.M. Zhang 1198

**Preparation and Characterization of Graphene/RTV Silicone Rubber Composites**
J. Dong, P.H. Wang, D.B. Sun, Y.L. Xu and K.P. Li 1203

**Effects of Graphene Nanopletelets on Poly(Lactic Acid)/Poly(Ethylene Glycol) Polymer Nanocomposites**
B.W. Chieng, N.A. Ibrahim, W.M.Z. Wan Yunus and M.Z. Hussein 1207

**Graphene Oxide/Cement Composites for Electromagnetic Interference Shielding**
D. Zhao, J. Chen, Q. Gao and H.Y. Ge 1211

**Flammability and Thermal Degradation of PMMA/Graphene Composites**
Z.Z. Wang, S.H. Xu, L.X. Wu and D.X. Zhuo 1216

**Transport of Water and Chloride Ion in Cement Composites Modified with Graphene Nanoplatelet**
H.J. Du and S.D. Pang 1220

**The Preparation and Characterization of ZnO/Graphene Nanocomposites**
Z.P. Wang, G.L. Wu and Y. He 1226

**Graphene-Poly(*Methyl Methacrylate*) Composites Prepared by Two Methods**
L. Lei, J.H. Qiu, X.L. Wu, Y. Zhao and E. Sakai 1233

**Effect of Modified Graphene Addition on the Electrical Properties of Epoxy Resin Composite**
L.L. Wu, X. Lv and C.C. Zhang 1238

**Synthesis of Graphene-ZnS Nanosheets Composite by Layer-by-Layer Self-Assembly and Hydrothermal Homogeneous Precipitation Method**
Z.H. Wang, L.S. Bi, J.F. Xia, F.F. Zhang, Y.Z. Xia and Y.H. Li 1242

**Ionic Liquid Assisted Dispersion of Reduced Graphene Oxide in Epoxy Composites with Improved Mechanical Properties**
Y.E. Liu, C.E. He, R.G. Peng, W. Tang and Y.K. Yang 1246

**Effects of Graphene on a Resin Transfer Molding Process Using Bisphenol A Based Epoxy Resin**
H.H. Nguyen, D.W. Lee, Q.T. Troung, S.W. Yun, C.H. Choi, H.M. Kang, S.M. Lee, D.S. Lee and S.H. Choi 1251

**Study of Mechanical, Electromagnetic, and Crystalline Properties of PP/SEBS/GNs Nano-Composites**
J.H. Lin, X.M. Song, C.L. Huang and C.W. Lou 1255

**Synthesis, Magnetic and Surface Properties of Reduced Graphene Oxide Supported Nickel Oxide Hybrid Nanomaterials**
M.J. Ganpath, R. Rajendiran and V. Rengarajan 1259

**Preparation and Characterization of Magnetic Graphene Oxide**
Y. Shan, X.Y. Xu, K.Z. Chen and L. Gao 1265

**An Overview with Applications to Graphene-Based Composites**
N. Song, D. Chen, L.L. Luo and J.R. Chen 1269

**Effect of Graphene Structure on Mechanical Properties of Graphene/Epoxy Nanocomposites**
D.D. Zhang, D.L. Zhao and B. He 1273

**Single Layer Graphene Oxide Sheets-Epoxy Nanocomposites with Greatly Improved Mechanical and Thermal Properties**
Q.H. Liu, X.Y. Yao and Z.P. Liu 1280

**Effective Reinforcement of Graphene in Poly (vinyl alcohol) Nanocomposites at Low Loading via Enhanced Interfacial Interaction**
X.Y. Yuan 1285

**Preparation and Characterization of GNP/Nylon Composites**
B.F. Xu, Z.D. Lin, J.M. Chen and J. Lin 1290

**The Influence of Interactions between Polyethylene Glycol and Graphene Oxide in Shape-Stabilized PCMs on their Phase Change Behaviors**
C.Y. Wang, W. Wang, G.L. Li, W. Li, W.H. Tian and X.G. Li 1294

**One Step Synthesis and Characterization of Zirconia-Graphene Composites**
J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang, F.Q. Zhu and Y.H. Li 1299

**ZnO/Graphene Composites: Synthesis, Characterization and Optical Properties**
L.W. Hu, H. Tian, Y.X. Zhang, K. Lu and A.H. Jing 1303

**Fabrication of Graphene/Zirconia Nanocomposite by Mixing Graphite Oxide and Zirconia Nanopowders and Pressureless Sintering**
Z.E. Yin, H. Zhang, Y.R. Kang, J.M. Feng and Y.L. Li 1309

**Synthesis of PCL / Graphene Oxide Composites by *In Situ* Polymerization**
T. Yu, G.S. Wang, L. Liu, P. Wang, Z.Y. Wei and M. Qi 1313

**Hybrids of Graphenes and Silver Nanoparticles Prepared by *In Situ* Process Employing Microwaveirradiation**
D.H. Nguyen and D.S. Lee 1317

**Numerical Modeling of Graphene/Polymer Interfacial Behaviour Using Peel Test**
Y.Y. Jia and W.Y. Yan 1321

**Facile Hydrothermal Synthesis of a Graphene–Bismuth Oxide Composite and its Photoresponse Performance**
B.C. Yang, X.W. Lv, Z.J. Li and J.J. Zhang 1327

**Surface Corrugation and Stacking Misorientation in Multilayers of Graphene on Nickel**
V. Raineri, C. Bongiorno, S. di Franco, R. Lo Nigro, E. Rimini and F. Giannazzo 1333

**Amine-Functionalized Graphene for Natural Gas Sweetening**
M.S. Subrati, S.P. Lonkar and A.A. Abdala 1338

**The Preparation, Morphology and Electrical Properties of Polystyrene/Graphene Nanocomposite Foams Using Supercritical Carbon Dioxide**
Y.H. Li, L.K. Zhou and C.Q. Li 1343

**Preparation and Characterization of GNP/TPU Composites**
B.F. Xu, S. Lai, Z.D. Lin, J.M. Chen and J. Lin 1347

**Combustibility and Thermal Degradation of PS/IFR/Graphene Composites**
J.W. Yang, Z.Z. Wang, L.X. Wu and D.X. Zhuo 1350

**Synthesis of Graphene Load Nickel Nanoparticles Composites with Hydrothermal Process**
Y. Fu, W.J. Cui, F. Yan and D.Y. Zhao 1354

**Preparation and Isothermal Crystallization Behavior of Poly(*lactic acid*)/Graphene Nanocomposites**
Y.H. Chen, X.Y. Yao, Z.J. Pan and Q. Gu 1358

**Synthesis and Characterization of Graphene–Cu Nanocomposites by One-Pot Solvothermal Approach**
Q. Ma, J.P. Song, S.M. Shuang, Y. Guo and C. Dong 1365

**Enhancement of Hydrophobility and Thermal Property of Graphene Oxide by Paratoluidine Chemical Functionalization**
Z.J. Luo, H.Z. Geng, S.T. Zhang, B.T. Du, X. Zhang, J. Wang, Z.G. Lu, S.J. Ma, J.Q. Zhang, H.J. Yang and J. Wang 1369

**Preparation and Characterization of Hybrid Graphene-ZnS Nanoparticles**
H. Huang, H.H. Yu, L.D. Zhou, E.D. Gu and D.S. Jiang 1374

**Preparation and Dispersion of Polyacrylamide-Grafting Graphene**
L.L. Wu, X. Lv and C.C. Zhang 1378

**Preparation and Characterization of Glycyrrhizin-Graphene Hybrid Materials**
Z.H. Wang, Y.L. Gao, J.F. Xia, F.F. Zhang, Y.Z. Xia and Y.H. Li 1382

**Preparation and Characterization of High Performance LLDPE/Graphene Nanocomposites**
T. Kuila, B.J. Jung, X.F. Yi and J.H. Lee 1386

**Preparation of Graphene Nanosheets/Copper Composite by Spark Plasma Sintering**
D. Qu, F.Z. Li, H.B. Zhang, Q. Wang, T.L. Zhou, C.F. Hu and R.J. Xie 1390

**Preparation and Property of Reduced Graphene for Hummers**
Y.L. Jiang, M. Tian, Y.H. Yu, J.Y. Liu and S. Liu 1394

**Preparation and Characterization of Graphene Nanoplatelet/Magnetite Compound Powders**
G.H. Chen and H.T. Tang 1398

**Preparation and Properties of PEDOT/PSS Conductive Polymer Blended with Graphene/PVDF**
C.J. Lee and I.S. Tsai 1404

**Fabrication and Characterization of Graphene/Polyimide Nanocomposites**
X.L. Wang and W.J. Huang 1413

**Crystallization Properties of Polypropene/Graphene Oxide Nanocomposites**
Z.R. Ying, Z.M. Dang, X.H. Yan, X. Ouyang and Y.Y. Gao 1420

**Dispersion of Single-Walled Carbon Nanotubes in Water by a Conjugated Surfactant**
M.X. Liu, Z.X. Jia and C.R. Zhou 1424

**Graphene Oxide Containing Composite Hydrogel Fabricated by Freeze/Thaw Method**
W.C. Wang, Z.L. Li, J.J. Wu, M.C. Yi, Y. Liu, J.P. Gao, W. Wang and J. Yan 1428

**A pH and Electric Responsive Graphene Oxide Based Composite Hydrogel**
Y.Q. He, H.B. Chen, H. Sun, X.D. Wang and J.P. Gao 1432

**Fabrication of the Ordered and Sandwich Structured Polyaniline/Graphene Nanoarrays**
Q.L. Hao, J. Tian, H.L. Wang and X. Wang 1436

**Hyperbranched Polysiloxane Functionalized Graphene Oxide via Polyhydrosilylation**
M.M. Zhang, H.X. Yan, C. Gong and Y.C. Feng 1440

**Synthesis and Characterization of $ZrO_2$/Graphene Nanocomposite Materials**
Z.H. Wang, F.Q. Zhu, J.F. Xia, F.F. Zhang, Y.Z. Xia and Y.H. Li 1446

**The Review of the Application of Graphene/Chitosan Composite**
J. Zhao and H. Zhang 1450

**BCNO: Preparation and Microwave Absorbing Properties**
Y. Kang, Z.Y. Chu and H.F. Cheng 1454

**Preparation of Graphene/CdS-Nanobelt Nanocomposites**
P. Han, T.H. Ji and L. Li 1459

**Preparation, Characterization and Properties of Biodegradable GO/PPC Composites**
X. He, L.L. Wu, J.J. Wang and H.L. Liu 1464

**Filled-NR Conductive Thin Film: A Simple Route of Graphene Dispersion in Natural Rubber Latex**
T. Siriyong, C. Boonyuen, C. Warakulwit and W. Keawwattana 1471

**Fabrication of Uniformly Growing Graphene Films via the Dip-Coating Method**
J. Yang, H.B. Sun and D. Li 1476

**Internal Friction and Shear Modulus of Graphene Films**
X. Liu, T.H. Metcalf, J.T. Robinson, F.K. Perkins and B.H. Houston 1481

**Structural and Mechanical Properties of $CN_X$ and $CP_X$ Thin Solid Films**
E. Broitman, A. Furlan, G.K. Gueorguiev, Z. Czigány, H. Högberg and L. Hultman 1487

**Fabrication and its Transient Optical Properties of Graphene Thin Films**
J.Y. Zhu and J.H. He 1491

**Super-Hydrophobic Film Prepared with Reduced Graphene Sheets and its Application as Corrosion Barrier to Copper**
P. Wang and D. Zhang 1502

**Functional Films of Polymer-Nanocomposites by Electrospinning for Advanced Electronics, Clean Energy Conversion, and Storage**
J. Rajan, P.S. Archana, A.L. Viet, Q.L. Bao, K.P. Loh, M. Muhammad Yusoff, G.N.M.A. Kumar and S. Ramakrishna 1508

**Comparison on Tensile Properties of Graphene and Multi-Walled Carbon Nanotubes/Epoxy Thin Film Composites**
Z.A. Ghaleb, M. Mariatti, Z.M. Ariff and A.R. Mohamed 1514

**Electrospun Nanofibre Cores Containing Graphene Oxide for Sandwich Films: Manufacturing and Analysis**
S. Rao, D. Liu, P. Jaiswal, S. Ray and D. Bhattacharyya 1518

**Preparation of Graphene-Containing Composite Film and the Research on its Thermal Conductivity**
F.X. Li, S.L. Jin, X.L. Zhou, R. Zhang and M.L. Jin 1523

**Graphene Based Ultrahin Composite Films Prepared by Layer-by-Layer Electrostatic Assembly and Spinning Coating**
Y.Q. He, S.Y. He, Q.J. Gong, J.P. Gao and X.D. Wang 1528

**Corrosion Resistance of AA2024-T3 Coated with Graphene/Sol-Gel Films**
M. Hernandez, J. Genesca, C. Ramos, E. Bucio, J.G. Bañuelos and A. Covelo 1532

**Optical Properties of Films of Graphite Oxide, Reduced Graphite Oxide and its Intercalated Compounds with Ammonium Dodecahydro-*closo*-Dodecaborate**
A.A. Karpenko and V.I. Saldin 1536

**Preparation of Reduced Graphene Oxide/Chitosan Composite Films with Reinforced Mechanical Strength**
Y.Q. He, N.N. Zhang, W.C. Wang, S.Y. He, Q.J. Gong, H.X. Qiu and W. Wang 1542

**The Direct Observation of Fullerene-Like/Onions Dispersed in Amorphous Hydrogenated Carbon Films Deposited by Reactive Magnetron Sputtering of Ni**
B. Zhang, J. Zhao, X.B. Zheng, L. Qiang, K.X. Gao and J.Y. Zhang 1546

**Preparation and Characterization of Poly (vinylidene fluoride)/Graphene Oxide Composite Nanofiber for MF Application**
W.D. Chen, H.M. Jung, W.G. Jang, B.P. Hong and H.S. Byun 1551

**Graphene Covered Alumina Nanofibers as Toughening Agent in Alumina Ceramics**
I. Hussainova, M. Drozdova, M. Aghayan, R. Ivanov and D. Pérez-Coll 1556

**Preparation and Properties of Polyamide 6-Functionalized Nanometer-Sized Graphene Composite Fiber**
H.H. Liu, W.W. Peng, Y. Tan, L.C. Hou and X.X. Zhang 1561

**Synthesis of Carbon/Carbon Core/Shell Nanofibers by Co-Pyrolysis of Tetrahydrofuran and Ferrocene**
W.J. Kang, H.B. Li, Y. Yan and Y.T. Qian 1565

**Morphology of Poly(vinyl alcohol)/Graphene Nanosheets Composite Nanofibers**
C.L. Huang, S.Y. Peng, Y.J. Wang, W.C. Chen and J.H. Lin 1569

**Fabrication and Characterization of Poly(vinyl Alcohol)/Functionalized Graphene Oxide Nanofibers Produced by Electrospinning Method**
Y.H. Yu and C.J. Jan 1574

**Glass Fibers with Multi-Functional Capabilities for Engineering and Environmental Applications**
L. Chen, B. Hao and P.C. Ma 1578

**Enhanced Mechanical Performance of Electrospun Graphene/Polyacrylonitrile (PAN) Composite Microfibrous Yarns via Post-Processing**
Y.Y. Li, L.J. Guo, B. Wang and Q. Song 1582

**Preparation and Property Evaluations of Polyvinyl Alcohol (PVA)/Graphene Nanosheets (GNs) Composite Nanofibrous Mats by Using Electrospinning**
J.H. Lin, K.C. Chiang, C.L. Huang and C.W. Lou 1589

**The Preparation and Tribological Properties of Multi-Layer Graphene as Paraffin Liquid Additives**
H.C. Zhao, Y.L. Qiao, Y. Zang and Q. Zhang 1593

**Graphene Modified Cotton Textiles**
W.L. Gu and Y.N. Zhao 1598

**Microstructure and Anti-Friction Effect of Ball-Milled Expanded Graphite**
H. Zhang 1602

**Enhanced Field Emission from Carbon Nanotubes Coated by Nanoparticles of Turbostratic Stacked Graphenes**
Q.T. Li, R. Hu, X.R. Zhao, Z.G. Li and Y.P. Liu 1606

**Porosity Development in Carbon Nanofibers by Physical and Chemical Activation**
F. Suárez-García, J.I. Paredes, M. Pérez-Mendoza, J. Nauroy, A. Martínez-Alonso and J.M.D. Tascón 1612

**Modeling and Simulations on $CO_2$ Storage Using Graphene**
Y.T. Chen and Y. Chan 1631

**Hydrothermally Synthesized Magnetically Separable RGO Supported Nanocomposite for Water Purification**
M.K. Joshi, H.R. Pant, H.J. Kim, N.N. Liao, J.H. Kim, B.K. Shrestha, C.H. Park and C.S. Kim 1635

**Preparation of Graphene/$Fe_3O_4$/Polypyrrole Nanocomposite and its Adsorption for Cr(VI) Ions**
W. Yao and Y. Lu 1639

**Comparing Different Kinds of Materials for Adsorption of Methylene Blue**
Y.P. Shi, S.X. Zhong, M.L. Wu and J.R. Chen 1643

**Adsorption of Cd(II) from Aqueous Solution by Magnetic Graphene**
J. Liu, S.W. Yuan, H.Y. Du and X.Y. Jiang 1647

**Synthesis of $FeC_2O_4$-Graphene Composites and their Application in Removal Dyes**
S.S. Wu, Y.M. Wang, Q.M. Jia, L.L. Gu and Y.L. Sun 1651

**Progress of Graphene-Based Composites for Adsorption of Pollutants in Wastewater**
M. Zhou, L.L. Luo, S.X. Zhong, J.Y. Yang and J.R. Chen 1656

**Advances of Graphene for Adsorption of Dyes in Wastewater**
J.Y. Yang, Y.Q. Chen, Y.C. Ma, X. Zhang, L.L. Luo, S.X. Zhong and J.R. Chen 1660

**Graphene/$SnO_2$/Citric Acid Nanocomposites as the Excellent Sorbent for Removal of Crystal Violet and Methylene Blue**
J.P. Song, Q. Ma, S.M. Shuang, Y. Guo and C. Dong 1665

**The Synthesis and Characterization of the Graphene Oxide-Polyamine Composites Using for the Recovery of Heavy Metal Ions**
G.Z. Wang, T. Chen, J. Gao, J. Yin, R. Ma and C.J. Yan 1670

**Synthesis of Reduced Graphene Oxide for Helianthine Removal**
C.B. Wang 1674

**Synthesis of Phosphoric Acid /Graphene Composites for Water Purification**
C.B. Wang 1678

**Monolithic Porous Graphene/Poly(Vinyl Alcohol) Gels: Preparation, Structure and Dye Adsorption**
P. Wang and Y.P. Guo 1682

**Study on the Loadings of $Co_3O_4$ Supported on rGO as the Catalyst for Degradation of Orange II in Water by AOPs Based on Sulfate Radicals**
P.H. Shi, H.G. Zheng, W.F. Yao, Q. Wu, S.Y. Tan and H.J. Pang 1688

**Advances in Graphene for Adsorption of Heavy Metals in Wastewater**
L.L. Luo, X.X. Gu, J. Wu, S.X. Zhong and J.R. Chen 1692

**The Study of Catalytic Oxidation of NOx Using $Mn_3O_4$/GO/PMS**
X.Z. Sun and D.X. Li 1696

**Preliminary Study on Effects of Nanoscale Amendments on Hyperaccumulator Indian Marigold Grown on Co-Contaminated Soils**
J.J. Du and Q.X. Zhou 1700

**Study on the Catalytic Activity of Graphene Oxide**
Y.Q. He, N.N. Zhang, Y. Long, H. Sun, H.X. Qiu and J.P. Gao 1705

**Synthesis of $Co_3O_4$/RGO as Catalyst for Degradation of Orange II in Water by Advanced Oxidation Processes Based on Sulfate Radicals**
P.H. Shi, S.B. Zhu, R.J. Su, J.T. Ren, D.X. Li and S.H. Xu 1709

**Self-Assembled Graphene for Determination of Catechol in Wastewater at Modified Glassy Carbon Electrode**
M.F. Chen, X.Y. Ma and X. Li 1713

**Study of Ozone Decomposition Using $TiO_2$-Graphene Composites**
X. Tan, Q.Q. Shang and S.Y. Wang 1718

**Graphene Oxide Oxidized by NaClO as a Highly Effective Adsorbent for Fast Removal of Dye Rhodamine B**
J.Y. Chen, Y. Liu, J.J. Gou and Y.M. Hao 1724

**Theoretical Investigation of the Adsorption of $Nh_3$ on B-Doped Graphene**
D.M. Bi, L. Qiao, X.Y. Hu and W. Zhi 1728

**Photocatalytic Performance of BiOCl Nanosheets Composite with Graphene**
B.T. Liu, L.L. Tian and L.L. Peng 1733

**Study on Photocatalytic Properties of Graphene/$TiO_2$ Composite Prepared by Impregnation Method**
Z.F. Wang, Y.H. Zhang, H. Fang, J.Z. Wang and B.S. Sun 1737

**Photocatalytic Enhancement in Methylene Blue Degradation of $TiO_2$ Photocatalysts via Graphene Hybridization**
F. Zhou, Y.Q. Fu and X. Wan 1744

**Enhanced Photocatalytic Performance of Oriented $ZnWO_4$ Nanorods via Graphene Hybridization**
F. Zhou and S. Zhan 1749

**Enhanced Photocatalytic Activity of H-C-$TiO_2$/Graphene Based on the Synergistic Effect between Surface Defects and Ti-C Bond**
L. Zeng, M.H. Li and W.L. Song 1754

**Preparation and Photocatalytic Activity of Titanium Dioxide-Cuprous Oxide Heterostructure on Graphene**
J.H. Liu, X. Li and S. Gu 1762

**Preparation of Graphene and γ-$Fe_2O_3$ Doped Titanium Dioxide and its Photocatalytic Properties**
D.Q. Chen, Y. Li and Y.Q. Chen 1767

**The Properties and Enhanced Photocatalytic Behaviour of $TiO_2$-RGO Nanocomposites**
F.J. Wu, W. Liu, J.W. Mai, J.L. Qiu, S.T. Zhang and W.Y. Zhou 1772

**Enhanced Photocatalytic Activity of $TiO_2$/Graphene Oxide Nanocomposites Prepared by the Sol-Gel Method**
C.H. Cao 1776

**Photocatalytic Degradation of Indigo Carmine by ZnO-$Cu_2O$/Graphene Oxide Composites Synthesized via Hydrothermal Method**
H.D. Wu, L.S. Chen and J.C. Hu 1782

**Preparation of Sandwich-Like $TiO_2$/Graphene/$TiO_2$ Films and its Application in Photocatalysis**
H.P. Wu, D.W. He, Y.S. Wang, B.Y. Yang, H.T. Xu, J.F. Li, H.T. Wang, J.G. Wang and M. Fu 1787

**Current Perspective of Semiconductor and its Composites with Unusual Surfaces for the Use of Photocatalysis: Review**
T. Selvamani and S. Anandan 1793

**Structure Sensitivity of $H_2O$ Adsorption on Graphene-Supported $Bi_2WO_6$**
X.Q. Hu, C. Lin, L.X. Tang and X.W. Liu 1841

**Synthesis and Photo-Catalytic Properties Characterization of Graphene/$TiO_2$ Nanotube Composites**
C.X. Li, L. Zhang, D.Y. Jiang and Q. Li 1846

**Preparation and Photocatalysis Properties of $TiO_2$/Graphene Nanocomposites**
D.F. Wang, D. Chen, G.X. Ping, C. Wang, H.Z. Chen and K.Y. Shu 1850

**Synthesis and Photo-Catalytic Performance of ZnO/Graphene Composites**
C.X. Li, X.D. Zhang, D.Y. Jiang and Q. Li 1854

**Polyelectrolyte-Induced Dispersion of Graphene Sheets in the Hybrid AgCl/PDDA/Graphene Nanocomposites**
Y.Q. Wang, L. Sun and B. Fugetsu 1858

**Preparation and Structure of $BiVO_4$-Graphene Composites**
B. Zhang, Y.L. Wang, L.H. Huang and S.Z. Tan 1862

**Photocatalysts for Solar-Induced Water Disinfection: New Developments and Opportunities**
W.J. Wang, J.C. Yu and P.K. Wong 1866

**The Effects of Inoculum in Fermented Glutinous Rice for Nanotechnology Applications**
S.F. Nik, N.F.A. Zainal, A.A. Azira, F. Mohamed, S. Abdullah, A.Z. Ahmed and M. Rusop Mahmood 1893

**Coupled ZnO/$TiO_2$ Nanorods Deposited in the Pores of Expanded Graphite Prepared by Microwave Irradiation**
M.C. Zhu, E.Q. Wang, Y.C. Zhang and D.X. Li 1897

**Extrusion Printed Graphene/Polycaprolactone/Composites for Tissue Engineering**
S. Sayyar, R. Cornock, E. Murray, S. Beirne, D.L. Officer and G.G. Wallace 1905

**Electrochemical Detection of Bacteria Using Graphene Oxide Electrodeposited on Titanium Implants**
S. Sirivisoot, Y. Parcharoen and T.J. Webster 1912

**Nonenzymatic Electrochemical Detection of Glucose Using Well-Distributed Gold Nanoparticles on Graphene/Carbon Nanotube Nanohybrids**
C.Y. Lu, J.F. Xia, Z.H. Wang, Y.Z. Xia and F.F. Zhang 1921

**Carbon Nanomaterials for Drug Delivery**
M. Kakran and L. Li 1925

**Characterization of Antibacterial Effects of Novel Silver Nanoparticles: A Case Study on *Pseudomonas* as a Model for Gram-Negative Bacteria**
T.T. He, Y.Z. Zhou, J. Yang and H.F. Shi 1930

**Silver Nanoparticles - Graphene Oxide Nanocomposite for Antibacterial Purpose**
S.W. Chook, C.H. Chia, Z. Sarani, M.K. Ayob, K.L. Chee, H.M. Neoh and N.M. Huang 1934

**Advances in Synthesis and Properties of Poly(ε-caprolactone)/Carbon Nanocomposites**
L. Liu, T. Yu, P. Wang, G.S. Wang and Z.Y. Wei 1939

***In Vitro* Cytotoxic Studies of Ultrafine $TiO_2$/Graphene Oxide Sheet Nanocomposites in Human Alveolar Epithelial Cells**
J. Gao, X.S. Yuan, Y. Wang, L. Cao, P.Y. Dong and B.C. Cao 1944

**Surface Functionalization of Graphene Layer-Encapsulated Magnetic Nanoparticles by Inductively Coupled Plasma**
M. Nagatsu, T.E. Saraswati and A. Ogino 1954

**Polyamide Decorated Graphene Sheet as a Potential Antimicrobial Agent: Synthesis, Characterization**
E. Fathali, S. Rahimnejad and M. Yousefi 1958

**Effects of Graphene Oxide on the Structure of Human γ-Globulins**
R. Feng, Y.P. Jiao and C.R. Zhou 1963

**Graphene Oxide Reinforced Degradable Polyurethane for Anterior Cruciate Ligament Tissue Engineering**
J.L. Zhang, L. Guo, L. Chen, S.H. Li and G. Wu 1967

**Thermo-Responsive Supramolecular Hybrid Hydrogels Formed by Graphene Oxide-Grafted-Poly(Ethylene Glycol) and α-Cyclodextrin**
S.H. Kong, M. Zhou, X.F. Ye and X. Qian 1971

**Enrichment of Peptide with Graphene for MALDI-TOF MS Analysis**
N.S. Ye, Y.L. Xie, C. Liu and J. Li 1975

**Studies of Optimum Conditions for Cross-Linking Immobilization of Alkaline Protease on Graphene Oxide**
R.J. Su, W.F. Zhang, P.H. Shi, M.C. Zhu and D.X. Li 1979

**Selective Determination of Dopamine at Poly Sulfosalicylic Acid/Graphene Modified Electrode with Composite Properties of Biochemical Materials**
Q.H. Han, J.F. Xia, Z.H. Wang, Y.Z. Xia and F.F. Zhang 1984

**Capture of Charged Polymer in Salt Solution**
X.L. Wei, J.J. Sha and Y.F. Chen 1988

**Growth of GaN Film on Graphene by HVPE**
S.Y. He, B. Cao, Q. Yu, L. Qi, C.H. Wang, Y. Xu, J.C. Zhang and Q. Sun 1997

**Synthesis and Characterization of Reduced Graphene Oxide Film as Electronic Material**
J. Yang, C.L. Zang, L. Sun, N. Zhao and Y.Z. Zhou 2002

**Drain-Current Deep Level Transient Spectroscopy Investigation on Epitaxial Graphene/6H-SiC Field Effect Transistors**
S. Roensch, S. Hertel, S. Reshanov, A. Schöner, M. Krieger and H.B. Weber 2006

**Electrical Characterization of the Graphene-SiC Heterojunction**
T.J. Anderson, K.D. Hobart, L.O. Nyakiti, V.D. Wheeler, R.L. Myers-Ward, J.D. Caldwell, F.J. Bezares, D.K. Gaskill, C.R. Eddy, F.J. Kub, G.G. Jernigan, M.J. Tadjer and E.A. Imhoff 2010

**Suppression of Hole Current in Graphene Transistors with N-Type Doped SiC Source/Drain Regions**
Y. Nagahisa and E. Tokumitsu 2014

**High Temperature Stability of Oxygen Functionalized Epitaxial Graphene/Metal Contact Interfaces**
V.K. Nagareddy, S.C. Hernández, V.D. Wheeler, L.O. Nyakiti, R.L. Myers-Ward, C.R. Eddy, J.P. Goss, N.G. Wright, S.G. Walton, D.K. Gaskill and A.B. Horsfall 2018

**Electrical Nanocharacterization of Epitaxial Graphene/Silicon Carbide Schottky Contacts**
F. Giannazzo, S. Hertel, A. Albert, A. La Magna, F. Roccaforte, M. Krieger and H.B. Weber 2022

**Gated Epitaxial Graphene Devices**
D. Waldmann, J. Jobst, F. Speck, T. Seyller, M. Krieger and H.B. Weber 2026

**High Performance RF FETs Using High-k Dielectrics on Wafer-Scale Quasi-Free-Standing Epitaxial Graphene**
J.A. Robinson, M.J. Hollander, M. LaBella, K. Trumbull, M. Zhu, R. Cavalero and D. Snyder 2030

**Graphene-Silicon Schottky Junction Fabricating by Laser Reduced Graphene Oxides**
R.Q. Shao 2036

**Electrodeposition of Zinc Oxide on Graphene Tips Electrochemically Exfoliated and $O_2$-Plasma Treated**
E. Saito, E.F. Antunes, M. Pianassola, F.H. Christovan, J.P.B. Machado, E.J. Corat and V.J. Trava-Airoldi 2040

**Controlled Synthesis of Carbon Nanowalls for Carbon Channel Engineering**
H. Kondo, M. Hori, W. Takeuchi and M. Hiramatsu 2045

**Oxygen-Plasma Treated Graphene Nanoplatelet/Multi-Walled Carbon Nanotube/Polycarbonate Hybrid Nanocomposites for Anti-Electrostatic Discharge Applications: Preparation and Properties**
P. Akkachai, H. Kittipong, A. Darunee and P. Duanghathai 2052

**Nano Electronics: A New Era of Devices**
I. Kaur, S. Yadav, S. Singh, V. Kumar, S. Arora and D. Bhatnagar 2062

**Dynamics Research on Electron-Stimulated Desorption of Fluorine from Fluorinated Graphene Surface**
L. Guo, X.K. Chen, L.X. Wang, S.Z. Cao, X.H. Bai, C. Zhang, Y.M. He and H. Gao 2080

**MeV Electron-Beam Induced Clusterization of Platinum Chloride on Graphene for Transparent Conductive Electrodes**
M.J. Cha, W.S. Song, Y.S. Kim, I.K. Song, D.S. Jung, S. Lee, S.H. Kim, S.E. Park and C.Y. Park 2086

**Investigation Progress on Microelectronic Materials: Carbon Nanotube and Graphene**
G.Y. Wang 2092

**Side Gate Graphene and AlGaN/GaN Unipolar Nanoelectronic Devices**
R. Göckeritz, K. Tonisch, W. Jatal, L. Hiller, F. Schwierz and J. Pezoldt 2095

**Fabricating $TiO_2$ Coated ZnO Nanowire Array/Graphene Heterostructure**
Y.Q. He, S.Y. He, N.N. Zhang, W.C. Wang, H. Sun, W. Wang and H.X. Qiu 2099

**Preparation of Doped Graphene Quantum Dots with Bright and Excitation-Independent Blue Fluorescence**
H. Li, H.P. He and Z.Z. Ye 2103

**Tuneable Resonance Properties of Graphene by Nitrogen-Dopant**
H.F. Zhan, Y. Wei and Y.T. Gu 2107

**The Role of the Electrode Size of to the Elecronic Transport Properties**
Y.L. Peng, Y.H. Zhou, X.H. Qiu and L.L. Zhou 2114

**Highly Transparent and Conductive Graphene Electrode**
S.Y. Bae, I.Y. Jeon and J.B. Baek 2118

**Controlling the Carrier Concentration of Epitaxial Graphene by Ultraviolet Illumination**
V. Eless, R. Yakimova and R. Pearce 2122

**Strong Nonlinear Optical Response of Bilayer Graphene in the Terahertz Regime**
Y.S. Ang and C. Zhang 2127

**Current Status of Graphene Transistors**
M.C. Lemme 2131

**Brilliant Blue-Functionalized Reduced Graphene Oxide with Excellent Stability and Solubility in Water**
A.L. Yu, M.S. Lin, A. Xie, X. Cai, S.Z. Tan, X.J. Zhang and Z.D. Lin 2142

**Progress in Graphene-Based Two-Dimensional Heterostructures and their Photoelectric Properties**
H.Y. Wang and A.P. Huang 2147

**New Development of Graphene Material and Device**
L.H. Song, J. Ji and G. Chen 2152

**Enhancing the Fluorescence of Graphene Quantum Dots with a Oxidation Way**
T. Han, X.J. Zhou and X.C. Wu 2157

**Graphene Based Transparent Conductive Electrode**
Y.N. Wang, P.F. Gu, J.J. Cao, T.Q. Lv, T.Q. Zhang, Y.D. Wang and Y. Zhang 2162

**Three-Dimensional Micro-Channel Structure of Graphene Field-Effect Transistor**
H.Z. Liu, W.H. Liu, J.H. Liu and X. Li 2166

**T- and Y-Branched Three-Terminal Junction Graphene Devices**
J. Pezoldt, R. Göckeritz, B. Hähnlein, B. Händel and F. Schwierz 2170

**Research on the Performance Change by Adding Graphene to Copper**
T.T. Fan 2174

**Influence of ssDNA Immobilization on the Conductance of Solution Gated Graphene Transistors**
M. Song, C. Ju and Y.F. Jia 2178

**Two Dimensional Graphene/h-BCN Based Devices with Large Ion/Ioff Ratio for Digital Applications**
G. Fiori, S. Bruzzone and G. Iannaccone 2182

***In Situ* CCVD Grown Graphene Transistors with Ultra-High On/Off-Current Ratio in Silicon CMOS Compatible Processing**
P.J. Wessely, F. Wessely, E. Birinci, B. Riedinger and U. Schwalke 2186

**Graphene in Transistor Technology**
J.Y. Cai and X. Wang 2194

**Properties of Graphene Side Gate Transistors**
B. Hähnlein, B. Händel, F. Schwierz and J. Pezoldt 2198

**Dielectric-Tuned Diamondlike Carbon Materials for an Ultrahigh-Speed Self-Aligned Graphene Channel Field Effect Transistor**
S. Takabayashi, M. Yang, S. Ogawa, Y. Takakuwa, T. Suemitsu and T. Otsuji 2202

**Hybrid Structure for Solar Cells Based on SWCNT/CdS**
M. Houshmand, M.H. Zandi and N.E. Gorji 2208

**Study on Dye-Sensitized Solar Cells Based on Graphene / Pt Counter Electrode**
H.J. Wang, L.G. Jin, S. Wang, C. Wang and T.Y. Liu 2220

**On the Role of Graphene in Polymer-Based Bulk Heterojunction Solar Cells**
F. Yu, M. Bahner and V.K. Kuppa 2225

**Synthesis and Characterization of Graphene/$Cu_2SnS_3$ Quantum Dots Composites**
C.X. Li, J. Guo, D.Y. Jiang and Q. Li 2239

**Preparation of Layered Double Hydroxide and its Graphene Composite Films as Electrodes for Photoelectrochemical Cells**
S. Azuma, G. Kawamura, H. Muto, N. Kakuta and A. Matsuda 2243

**Synthesis and Photoelectrical Properties of Graphene-$Cu_xO$ Nanostructures**
Q.Q. Zhu, J.H. Yu, X.X. Wang, L.L. Xu, L. Cao and L.F. Dong 2248

**Application of Graphene Oxide and $TiO_2$ in the Fabrication of Dye Sensitized Solar Cells Module by Electrode Modification**
S.K. Prakash, H. Singh, H. Panjiar, S. Manhas and B.S.S. Daniel 2254

**Platinum-Incorporating Graphene Counter Electrode for $In_2O_3$-Based DSSC with Various Annealing Temperatures**
H. Abdullah, S. Mahalingam, A. Omar, R. Mohd Zikri, S. Shaari and I. Asshaari 2259

**Green and Economic Transparent Conductive Graphene Electrode for Organic Solar Cell: A Short Review**
R. Ahmad, M.S. Shamsudin, M.Z. Sahdan, M. Rusop and S.M. Sanip 2264

**Preparation of Graphene Films and their Applications in Dye-Sensitized Solar Cells**
T. Shen, Y. Shen, X.T. Ma, W.T. Gao, M. Cao, F. Gu and L.J. Wang 2270

**Multiple Transfer Used on Repairing Transparent and Electric Film Based on CVD - Grown Graphene**
P.F. Zhao, D.W. He, Y.S. Wang, M. Fu, H.P. Wu, H.T. Xu, P. Zhou and S.L. Li 2275

**Improved Performances of Graphite Counter Electrode for Dye-Sensitized Solar Cells by Incorporating Graphene Nanosheets**
S.J. Xu, Y.F. Luo, W. Zhong, X.Y. Liu, Z.H. Xiao and Y.P. Luo 2281

**Effect of Graphene Layer Number on the Performances of Graphene Nanosheets Counter Electrode for Dye-Sensitized Solar Cells**
S.J. Xu, Y.F. Luo, W. Zhong, Z.H. Xiao, Y.P. Luo and J.H. Lai 2285

**The Effect of Graphene/Ag Nanoparticles Layer on the Performances of Organic Solar Cells**
C.F. Ou and S.Y. Chen 2289

**Effect of PMMA and Graphene Addition on the Performances of Organic Solar Cells**
C.F. Ou and P.Y. Chen 2294

**Performance of Co-Donor Photovoltaic Devices Based on Graphene-Accceptor System**
J.G. Wang, Y.S. Wang, D.W. He, H.P. Wu, H.T. Wang, P. Zhou, Y.N. Zhang and M. Fu 2299

**Serine Sensor Based on Graphene Sheet Congo-Red Molecular Imprinted Polymer (GSCR-MIP) Organic Thin Film Transistor (OTFT)**
N.F.A. Halim, M.N. Ahmad, A.K.M.S. Islam, A.Y.M. Shakaff, Z. Zakaria and M.N. Derman 2307

**Electrochemically Reduced Graphene Oxide Film Modified Electrode for Detection of Hydrogen Peroxide**
J. Li, J. Yang, Z.J. Yang, P. Ji, Y.M. Zhou and G.W. Diao 2312

**Characterization of Graphene Oxide Thin Film According to Heat Treatment Condition for the Selective VOCs Sensing**
H.S. Ahn, B.K. Jung, J.C. Joo and J.R. Park 2316

**VOCs Sensing Property of Graphene Oxide Thin Film by Reduction Rate**
H.S. Ahn, H.J. Park, J.H. Oh, J.C. Joo and D.J. Kim 2322

**The Effects of Reduced Graphene Oxide (rGO) on ZnO Film UV-Detector**
S. Safa, R. Sarraf-Mamoori and R. Azimirad 2327

***In Situ* Self-Assembled Graphene-Polyaniline Nanocomposite Thin Films for Ammonia Gas Sensor**
N.J. Guo, H.L. Tai, Z.B. Ye and G.Z. Xie 2333

**Preparation of Silver Nanoparticles/Graphene Composite Films by Dip-Coating Method and their Surface-Enhanced Raman Scattering Property**
N. Zhao, S.B. Ma, Q.Q. Yan, Y.Z. Zhou, X.Q. Fu, X.N. Cheng and J. Yang 2337

**Sub 10nm Nanopore Sculpturing with Focused Electron Beam on Single Layer Graphene Oxide Film**
Z.X. Li, X.L. Cheng and Z.M. Wang 2342

**Self-Assembled Hybrid Films of Graphene/Carbon Nanotube Modified Electrode for Sensitive and Selective Determination of Rutin**
Z.H. Wang, S.Y. Yao, J.F. Xia, F.F. Zhang, X.M. Guo, Y.Z. Xia and Y.H. Li 2348

**Graphene Oxide-Reinforced Hollow Fiber Solid-Phase Microextraction Coupled with HPLC for the Determination of Parabens in Beer**
T. Gao and N.S. Ye 2352

**Development of FETs and Resistive Devices Based on Epitaxially Grown Single Layer Graphene on SiC for Highly Sensitive Gas Detection**
R. Pearce, R. Yakimova, L. Hultman, J. Eriksson, M. Andersson and A. Lloyd Spetz 2356

**Temperature Dependent Chemical Sensitivity of Epitaxial Graphene**
V.K. Nagareddy, D.K. Gaskill, J.L. Tedesco, R.L. Myers-Ward, C.R. Eddy, J.P. Goss, N.G. Wright and A.B. Horsfall 2360

**Synthesis and Characterization of (3-Aminopropyl)Triethoxysilane-Modified Epitaxial Graphene**
G. Burwell, S. Teixeira, A. Castaing and O.J. Guy 2364

**Passive Q-Switching with Graphene Saturable Absorber in Nd:YAG Operating at 1064nm**
M. Jiang, Z.Y. Ren, Y.P. Zhang, B.L. Lu, R.J. Zhang, J.X. Guo, Y.X. Zhou and J.T. Bai 2372

**Synthesis of High Quality Graphene Films by Atmospheric Pressure CVD and their Application in Laser Q-Switching**
M. Qi, Y.P. Zhang, W.L. Li, M. Jiang, X.L. Zheng, J.T. Bai and Z.Y. Ren 2376

**Ag Supported Si-Doped Graphene for Hydrogen Sulphide Detection: A First-Principles Investigation**
X. Qin, Q.Y. Meng and Y.F. Gao 2380

**Synthesis of Graphene Nanocomposites with Sandwiched Electroactive Methylene Blue for Electrochemical Application**
X.M. Guo, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2384

**Graphene Modified Molecular Imprinted Electrochemical Sensor for Specific Recognition of Bovine Serum Albumin**
F. Li, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2388

**Manganese Porphyrin Functionalized Graphene and its Application on Dimethoate Electrochemical Sensor**
Y.H. Wu, S.X. Luo and L.D. Chen 2392

**Preparation of GR/HRP/Chit Modified Electrode and its Electrochemical Behaviors**
H. Shu, Y.L. Shang, H. Cui, Q.J. Wan and N.J. Yang 2396

**Electrochemical Property of Graphene Oxide/Nafion/AuNPs Nanocomposite in Electrochemical Sensor**
J.B. Li, Y.R. Yan, B. Shen, Y.G. Li, W. Cheng and S.J. Ding 2401

**Graphene Oxide Based Selective VOCs Sensor for Indoor Air Quality Monitoring**
H.S. Ahn, B.K. Jung, J.R. Park and J.C. Joo 2405

**Carbon-Based Nanomaterials for Drugs Sensing: A Review**
B. Kasinathan and R.M. Zawawi 2409

**Investigation of a New High Sensitive Micro-Electromechanical Strain Gauge Sensor Based on Graphene Piezoresistivity**
M. Gamil, O. Tabata, K. Nakamura, A.M.R.F. El-Bab and A.A. El-Moneim 2436

**Graphene/Nylon-6 Chemiresistor Sensor for Trimethylamine Gas Sensing**
R.A.G. Rañola, J.M. Kalaw and F.B. Sevilla 2440

**The Study of Graphene Gas Sensor**
J. Nahlik, J. Voves, A. Laposa and J. Kroutil 2445

**Humidity Sensitive Properties of Graphene Oxide Investigated by Quartz Crystal Microbalance**
H.Y. Yu, Y.L. Yao and X.H. Wang 2449

**One Actuator and Several Sensors in One Device with only Two Connecting Wires: Mimicking Muscle/Brain Feedback**
T.F. Otero, J.G. Martinez, L. Valero, K. Asaka and Y.A. Ismail 2454

**Self-Assembled Combination of Graphene with Au Nanoparticle-Doped Copper-Hexacyanoferrate Multilayer for Sensitive Detection of Hydrazine**
D.J. Zhao, F. Yan, Y.F. Xuan, X.P. Dong and F.N. Xi 2464

**A Simple and High-Performance Hydrazine Sensor Based on Graphene Nano Platelets Supported Metal Nanoparticles**
Y. Liu, B.B. Li, W. Wei, Q.J. Wan and N.J. Yang 2470

**Ultrasensitive Determination of Rutin on Ag Nanoparticles- Poly(p-aminobenzene sulfonic acid)/Graphene Modified Glassy Carbon Electrode**
N. Sun, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2476

**Ammonia Gas Sensor Based on Aniline Reduced Graphene Oxide**
X.L. Huang, N.T. Hu, Y.Y. Wang and Y.F. Zhang 2480

**Particle Swarm Optimization Technique for DNA Sensor Model Based Nanostructured Graphene**
V. Popov 2486

**Advances in Graphene-Based Fluorescent Sensors for Heavy Metals**
L.L. Luo, M. Zhou, J.Y. Yang, S.X. Zhong and J.R. Chen 2490

**GaN MSM UV Sensor Using Multi-Layer Graphene Schottky Electrodes**
C.J. Lee, H.G. Cha, S.K. Hong, S.H. Doh, Y.S. Koo, B.J. Cho and S.H. Hahm 2494

**Nafion/Quercetin/Graphene Composite-Modified Glassy Electrode for Selective and Sensitive Detection of Dopamine**
D.M. Song, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2498

**Fabrication of Graphene/Carbon Nanotube Composite Modified Electrode for Selective and Sensitive Determination of Uric Acid**
Z.X. Liu, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2502

**Sensitive Determination of Rutin Using a Nafion/PMB/Graphene Composite-Modified Glassy Electrode**
F. Cai, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2506

**Electrocatalysis and Sensitive Determination of Sudan I at $Fe_3O_4$/Graphene Modified Glassy Carbon Electrodes**
S.X. Luo, Y.H. Wu and H. Gou 2510

**Graphene Nano-Biosensors for Detection of Cancer Risk**
O.J. Guy, G. Burwell, Z. Tehrani, A. Castaing, K.A. Walker and S.H. Doak 2514

**Glucose Biosensor Based on Pt Nanoparticles/Graphene Chitosan Bionanocomposites**
H.P. Liu, G.Y. Zhan, Q.Z. Dong, Y.A. Lv, J.F. Wang, C.A. Tao and Z.H. Hu 2521

**Graphene Oxide Modified DNA Electrochemical Biosensors**
M. Ma, X.P. Fan, Z. Dai, X. Liu, S.C. Xu, J. Wei, S. Shi and G.P. Chen 2526

**Copper (II) Oxide and Graphene as Composite Materials for Glucose Biosensors**
P. Keša, I. Hrmo, J. Parnica, V. Vesela and M. Antalík 2531

**Enhanced Direct Electrochemistry of Glucose Oxidase and Glucose Biosensing Based on $TiO_2$-Decorated Graphene Nanohybrids**
J. Wu, Q. Liu, K. Wang and J.R. Cai 2535

**A Label-Free Electrochemical Immunosensor for Carcinoembryonic Antigen Based on Graphene and Thionine**
J.M. Han and Z.F. Ma 2539

**Preparation of SERS Active Substrates Based on Ag/Graphene/Polymer Nanocomposites**
G. Siljanovska Petreska, J. Blazevska-Gilev, R. Tomovska and R. Fajgar 2543

**The Synthesis of Electrically Actuated Shape Memory Polymer Composites Reinforced by Nanopaper**
A.Y. Zhang and H.B. Lu 2547

**Hg Ion Detection with Monolayered Graphene and Gold in a Microfluidic Channel**
S.H. Lee, W.S. Jung and S.H. Kim 2551

**Single Step Synthesis of Gold Nanoparticles Decorated Graphene Oxide Using Aniline as Reducing Agent and Study its Application on Elecrocatalytic Detection of Tryptophan**
P. Divya, A. Sudarvizhi and K. Pandian 2557

**Detecting DNA Using a Single Graphene Pore by Molecular Dynamics Simulations**
W. Si, J.J. Sha, L. Liu, J.P. Li, X.L. Wei and Y.F. Chen 2567

**The Possibilities of Graphenes Application in Textronic Devices**
M. Puchalski, E. Skrzetuska and I. Krucińska 2571

**Molecular Dynamics Study of Confined Fluid in Graphene Nanopores**
K. Li, J.J. Sha, L. Liu, G.S. Wu, W. Si and Y.F. Chen 2576

**Strain Gauge Based on Graphene**
Y.J. Ren and C.F. Zhu 2580

**Determination of 17β-Estradiol Based on Electropolymerized-Molecularly Imprinted Polymer on Gold Nanoparticles-Graphene Modified Electrode**
T.H. Li, D. Wang, H.Z. Lan and N. Gan 2586

**A Spike-Like Ionic Current Behavior via Graphene Nanopore**
G.S. Wu, J.J. Sha, L. Liu and Y.F. Chen 2591

**Nanocoating of Polyaniline Layer on the Surface of Graphene Sheets for Ammonia Gas Detection**
Y.M. Cai, Z.Y. Qin and Z. Zhou 2595

**Multifunctional Non-Woven Carbon Nanopaper: Fabrication, Properties, and Applications**
J.H. Gou, F. Liang, Y.J. Xu and B. Mabbott 2599

**Size Effect of Ion Translocation through Nanopore by Molecular Dynamics**
I. Hanasaki, Y. Kuzuya and S. Kawano 2608

**Fast Detection of Local Anesthetic Ropivacaine by Impedance Method on Polypyrrole-Graphene Oxide**
R.J. Wu and M.Y. Chen 2612

**Facile Synthesis of PtAu Nanoparticles/Graphene Nanocomposites for Direct Electrochemistry and Electrocatalysis**
L.M. Lu, O. Zhang, T. Nie, J.K. Xu, K.X. Zhang, L.P. Wu and Y.P. Wen 2617

**Graphene Nanoribbon Based Gas Sensor**
M.J. Kiani, M.T. Ahmadi, E. Akbari, H. Karimi and F.K. Che Harun 2622

**Electrodeposition of Zinc Oxide NanoSheets on Exfoliated Tips of Carbon Nanotube Films**
E.F. Antunes, E. Saito, M. Pianassola, F.H. Christovam, V.J. Trava-Airoldi and E.J. Corat 2627

**Electrochemical Analysis and Applications of New Carbon Materials with Properties of Composite Materials**
X. Hua, G.J. Shen and Y. Du 2633

**Non-Covalent Functionalization of Graphene and Multiwalled Carbon Nanotubes Composites for Transparent Conductive Films**
C.L. Zhao, L. Xing, J.H. Xiang, H.Z. Sai, Z.Y. Li and F. Li 2643

**Adsorption of Hydrogen Molecule on the Intrinsic and Al-Doped Graphene: A First Principle Study**
Y.L. He, D.X. Liu, Y. Qu and Z. Yao 2648

**Studies of Li Intercalation into Epitaxial Graphene on SiC(0001)**
C. Virojanadara, S. Watcharinyanon, A.A. Zakharov, R. Yakimova and L.I. Johansson 2652

**Controlled Growth and Supercapacitive Behaviors of CVD Carbon Nanotube Arrays**
D.D. Zhao, Z. Yang, H. Wei and Y.F. Zhang 2656

**Effects of Conductive Supports on the Growth and Capacitive Performance of Nanostructured Manganese Oxides**
N. Guo and Z.Y. Qin 2664

***In Situ* Growth of Mesoporous NiO Nanoplates on Graphene Matrix as Anode Material for Lithium-Ion Batteries**
D.F. Qiu, Y.J. Xia, H.Q. Ma and G. Bu 2668

**An Improved Technique for the Exfoliation of Graphene Nanosheets and Utilization of their Nanocomposites as Fuel Cell Electrodes**
Y. Yürüm, B.S. Okan, F. Okyay, A. Yürüm, F. Dinç, N. Görgülü and S.A. Gürsel 2673

**Nanostructured Graphenes and Metal Oxides for Fuel Cell and Battery Applications**
Z.F. Li, J. Xie, L. Stanciu and Y. Ren 2677

**Enhanced Electrocatalytic Activity of Ni-B-Graphene Electrode for Direct Methanol Fuel Cell Applications**
Y. Cai, Y.J. Hou and J. Guo 2683

**A Review of Graphene Supported Electrocatalysts for Direct Methanol Fuel Cells**
Q. Liu, Q.J. Xu, J.C. Fan, Y. Zhou and L.L. Wang 2688

**Novel Synthesis of Well-Dispersive Pt/Graphene Cathode Electrocatalyst for Direct Methanol Fuel Cell**
Y.H. Zhou, Y. Li and L.T. Ren 2693

**Research on the Phenol Degradation in Microbial Fuel Cells with $Fe_3O_4$-Reduced Graphene Oxide Cathodic Catalyst**
G.H. Qi, X.Q. Li and J. Cao 2698

**Preparation and Properties of $TiO_2$(B)/Graphene Nanocomposites as Anode Materials Fo Lithium-Ion Batteries**
Y.P. Tang, S.M. Wang, J.F. Ding, G.Y. Hou and G.Q. Zheng 2703

**Investigation of Polyaniline Nanocomposites and Cross-Linked Polyaniline for Hydrogen Storage**
D.E. Demirocak, S. Kuravi, M.K. Ram, C.K. Jotshi, S. Srinivasan, A. Kumar, Y. Goswami and E. Stefanakos 2707

**Carbon Nanomaterials, Relevance to Solving the Hydrogen Storage Problem**
Y.S. Nechaev 2713

**Effect of Atomic Hydrogen Concentration in the Study of Adsorption on Graphene**
A.V. Pak and N.G. Lebedev 2757

**On the Solid Hydrogen Intercalation in Multilayer Carbohydride-Like Graphane Nanostructures, Relevance to the Storage Applications**
Y.S. Nechaev 2761

**A First-Principles Study of Hydrogen Molecules Adsorption on Graphene**
M.J. Roudi and T. Mahmoodi 2780

**Preparation of Graphene/Pd Nanoparticle Composites and their Hydrogen Storage**
Z.L. Hu, Y.F. Chen, N. Li, W. Zhang, H. Chen and W.Q. Gong 2784

**Synthesis of Graphene Oxide Frameworks and their Application in Electrocatalytic Preparation of Hydrogen Peroxide**
L.N. Zhou, H. Zhao, Y. Liu, J. Li, H.F. Shi, Y.G. Wu and D.S. Wei 2790

**Reduced Graphene Oxide for Room Temperature Hydrogen Storage Application**
A. Venkatesan, R.N. Patel and E.S. Kannan 2797

**A Scheme for Hydrogen Evolution from Natural Gas**
M.A. Bubenchikov, A.I. Potekaev and A.M. Bubenchikov 2802

**Hydrogen Storage of Platinum Atoms Adsorbed on Graphene: First-Principles Plane Wave Calculations**
Y.L. He and S.X. Wang 2806

**The Energy Storage Performance of the Graphene Oxide/Polyaniline Composite**
P.P. Qi, Y.L. Ruan, K. Wang and Z. Wang 2810

**Graphene-NiO Composite Electrode for Supercapacitors**
W. Zhou, M.L. Tan and X.S. Zhou 2814

**Hydrothermal Synthesis of Porous Graphene Nanosheets for Supercapacitors**
Z.L. Liu, F.J. Xia, Q.Z. Xue, Y.G. Du and Q.K. Guo 2818

**Liquid/Liquid Interfacial Polymerization to Fabricate Sulfonated Graphene/Polyaniline Nanocomposite for Supercapacitors**
Q.L. Hao, H.L. Wang, X.J. Yang, L.D. Lu and X. Wang 2822

**Microwave-Assisted Synthesis of Graphene Oxide-$MnO_2$ Composites for Supercapacitors**
Y.W. Duan, X. Sun, H.Y. Zhao and Z.B. Liu 2827

**Electrochemical Properties of Graphene Nanosheet/Polyaniline Nanocomposite as Electrode for Supercapacitors**
R.R. Yao, N.N. Yao, D.L. Zhao and L. Xu 2833

**Electrochemical Performance of Graphene Nanosheets as Electrode Material for Supercapacitors**
L.Y. Li, D.L. Zhao and D.D. Zhang 2838

**Polyaniline@$MnO_2$/Graphene Oxide Ternary Composites for Electrochemical Supercapacitors**
C. Pan, L. Dong and H.T. Gu 2844

**Graphene Oxide Nanoplate-$MnO_2$ Composites for Supercapacitors**
J.W. Deng, H. Pang, S.M. Wang and J.S. Zhang 2850

**Graphene and Metal Oxide Composites for Supercapacitors**
Y.F. Liu, Z.H. Jiang and G.H. Yuan 2854

**Polyaniline Grafted Amino-Functionalized Graphene Nanocomposite with Excellent Electrochemical Performance for Supercapacitor Electrode Materials**
Y. Liu, X.Y. Su, S.Y. Guang and H.Y. Xu 2858

**Synthesis and Electrochemical Performance of Porous Carbon/Carbon Electrode with Core/Shell Structure**
K.S. Kim and S.J. Park 2864

**Facile Synthesis of Graphene Nanosheets and their Anode Electrochemical Performances in Lithium Ion Batteries**
Q.S. Ge, D.F. Wang, G.X. Ping, D. Chen, M.Q. Fan, L.S. Qin, C.J. Lv and K.Y. Shu 2868

**Electrochemical Synthesis of Platinum-Reduced Graphene Oxide Hybrids for Methanol Oxidation**
G.Y. Shi, J.F. Xia, Z.H. Wang, Y.Z. Xia, F.F. Zhang and L.H. Xia 2872

**On the Chemical Reduced Large Specific Surface Area Graphene Oxide and its Electrochemical Performances**
L.L. Liu, H.J. Zhang, S. Li, C. Yang and P.X. Yang 2876

**Hydrothermal Synthesis and Electrochemical Performance of $LiFePO_4$/Graphene Composites for Lithium-Ion Batteries**
X.L. Lei, H.Y. Zhang, Y.M. Chen, W.G. Wang, Z.D. Huang and Y.P. Ye 2880

**Syntheses of $Fe_3O_4$ and $Fe_3O_4$/Graphene Composites and Electrochemical Properties Researches as Anodes for Lithium Ion Batteries**
L. Hua, K. Chen, W.P. Ke and L. Chen 2885

**Polypyrrole/Graphene Oxide Composite Electrodes for High Energy Density Supercapacitor**
Z.W. Yang, X. Fan, L.A. Guo and W.X. Jiang 2890

**Research on the Synthesis and Application of Graphene Composite Nanomaterials**
D.W. Yu, Y.L. Hou and X.L. Wang 2894

**Effect of Microstructure of Graphene Oxide Fabricated Composite Membranes on Alcohol Dehydration**
W.S. Hung, K.R. Lee and J.Y. Lai 2898

**Electrode Properties of Defect-Introduced Graphenes for Lithium-Ion Batteries**
W.Y. Lee, S. Suzuki and M. Miyayama 2903

**Carbon Nanomaterials with Different Dimensions for Anode of Li-Ion Batteries**
W. Ren, D.J. Li and H. Liu 2907

**The Formation of Cooper Pairs and their Role in Nondissipative Diamagnetic Currents in the Micro- and Macro-Scopic Sized Graphene Materials; Towards High-Temperature Superconductivity**
T. Kato 2913

**Single Crystalline $V_2O_5$ Nanowire/Graphene Composite as Cathode Material for Lithium-Ion Batteries**
Q. He, D.L. Zhao, Y.Y. Zhu and J.X. Zhang 2919

**Research Progress of Graphene-Based Composites in Supercapacitor**
Z.X. Hou, G.B. Li, S.H. Wang, M.H. Wang, X.D. Hu, Y. Zhou and S.M. Li 2925

**Synthesis and Measurement of $SnO_2$@C/graphene Nanocomposite for Lithium Ion Batteries**
H.T. Wang, D.W. He, Y.S. Wang, H.P. Wu and J.G. Wang 2928

**Reduced Graphene Oxide Decorated with $Fe_3O_4$ Nanoparticles as High Performance Anode for Lithium Ion Batteries**
H.L. Xu, Y. Shen and H. Bi 2932

**$SnO_2$/Graphene Nanocomposite as an Enhanced Anode Material for Lithium Ion Batteries**
H.T. Wang, D.W. He, Y.S. Wang, H.P. Wu and J.G. Wang 2937

**$MnO_2$/Graphene Nanocomposite for Use in High Performance Lithium-Ion Batteries**
X.Y. Zhu, J.J. Li, X.L. She and L.H. Xia 2941

**Graphene/Sulfur Nanocomposite for High Performance Lithium-Sulfur Batteries**
S.W. Ma, D.L. Zhao, N.N. Yao and L. Xu 2945

**Solution Exchange Method for Synthesis of Sulfur Graphene Composite**
M.S. Zheng, Z.K. Wei and Q.F. Dong 2950

**Electrocatalytic Oxidation of Methanol on Platinum/Graphene Hybrid Modified Glassy Carbon Electrode**
J.F. Xia, Y.F. Wang, Z.H. Wang, Y.Z. Xia, F.F. Zhang and S.Y. Yao 2954

**Platinum Nanoparticles Supported on Noncovalent Functionalized Graphene as Cathode Catalysts for Aluminum-Air Batteries**
Y.H. Zhou, C.J. Liu, Y. Li and L. Fu 2958

**Microstructures and Electrocatalytic Properties of Nitrogen Doped Graphene Synthesized by Pyrolysis of Metal Tetrapyrazinoporphyrazine**
Y.X. Fu, S.Y. Zhang, W. Li, H.J. Li and K.Z. Li 2963

**Performance of Fast Thermally Reduced Graphene Oxide for Supercapacitor**
H.J. Wang, D. Zhou, F. Peng and H. Yu 2970

**Adsorption of Methane on Pristine and Al-Doped Graphene: A Comparative Study via First-Principles Calculation**
W. Zhao and Q.Y. Meng 2974

**High Reversible Capacity of Nitrogen-Doped Graphene as an Anode Material for Lithium-Ion Batteries**
C.J. Fu, S. Li and Q. Wang 2978

**Large Reversible Capacity of Graphene Electrodes Used in Lithium-Ion Batteries**
L.Z. Bai, D.L. Zhao, J.M. Zhang and F. Li 2984

**Carboxylic Graphene-Supported Platinum and Platinum-Palladium Nanoparticles with High Electrocatalytic Activity for Methanol Oxidation**
Q. Zhou, G.C. Wang, L. Yang, Y. Yang and Y. Xu 2989

**The Preparation and Study of Graphene Supported $Co_xMn_{3-X}O_4$ Nanocomposites as Advanced Oxygen Reduction Reaction Electrocatalyst**
Q.P. Zhao, J.T. Jin, C.L. Li, Z.M. Wang, J.Y. Zhang, Q. Ma and J.F. Cui 2994

**Phoretic Deposition of Graphene on Manganese-Cobalt Oxide Composites for Supercapacitor Electrodes**
D.H. Gutierrez, J. Lake, C. Javier, A. Cheng, Z. Tanaka, N.J. Londoño and B. Chen 2998

**Polyaniline/Graphene Composite as Supercapacitor Electrode**
M.S. Zheng, Z.K. Wei and Q.F. Dong 3003

**Facile Synthesis and Performance of Reduced Graphene Oxide/Cobalt Oxide Composite for Supercapacitor**
H.J. Wang, D. Zhou, F. Peng and H. Yu 3007

**Synthesis and Characterization of $Li_{0.97}K_{0.03}FePO_4$/Graphene Composites by Carbonthermal Reduction Method**
Y. Wang, Z.S. Feng, L.L. Wang, J.J. Chen and Z.Y. He 3011

**Preparation and Characterization of Scalable and Multi-Functional High Conductivity Polymer Electrode Material**
K.J. Tan and Z.B. Yu 3015

**Preparation of Amino-Graphene Electrode Slice**
Y.H. Du, L.L. Lv, B. Liu and D.M. Zhao 3019

**Preparation of r-GO/Carbon Sphere/PANI Composites with a High Supercapacity**
J. Sun, X.Y. Teng and H. Bi 3023

**Preparation of Graphene-Like Carbon Materials as Electrodes of Electric Double Layer Capacitors**
H.W. Mi, J.H. Liu, H.Y. Sun, S.Q. Wu, H.P. Zhou, H.Q. Cao and J.Z. Chen 3028

**Preparation and Electrocatalytic Performance of Ag/Graphene Nanocomposite**
B.G. Liu, J. Mu, Y. Gao, Q.T. Jiang and D.X. Wu 3033

**Graphene Based Electrode Using in Rechargeable Lithium Ion Batteries**
C.X. Gao, D.W. He, M. Fu, Y.S. Wang, J.Q. He, H.T. Wang, Z.L. Zhuo and S.L. Li 3038

**Reduced Graphene Sheets as Catalysts for Oxygen Reduction Reaction in Alkaline Media**
J.J. Wu, Y. Wang and D. Zhang 3044

**Synthesis and Characterization of Graphene Sheets as an Anode Material for Lithium-Ion Batteries**
L. Dong, W. Ren, L. Dong and D.J. Li 3049

**Patent Analysis on Graphene Materials in Lithium-Ion Batteries**
J. Liu, M.H. Zhang, C. You, M. Su, Z.Y. Tang and P. Liu 3054

**Interaction of CO with CuO and CuO/graphene: Reactions Mechanism and the Formation of $CO_2$**
W.Y. Li, Q.L. Chen, W. Qin, N. Wang and J.L. Lai 3060

**Electro and Surface Properties of Graphene-Modified Stainless Steel for PEMFC Bipolar Plates**
Y.J. Kim, D.H. Kim, J.S. Kim, J.H. Jang, U.C. Jung and D.G. Nam 3067

**Fabrication of Homogeneously Dispersed Nanoneedle Manganese Dioxide/Graphene Composite for High-Performance Electrode Use in Supercapacitor**
M.J. Kim, K.H. Kim, M.Y. Yoo and J.H. Kim 3071

**Electrochemical Features of Bilirubin Oxidase Immobilized on Different Carbon Nanostructures**
J. Filip, J. Šefčovičová, P. Gemeiner and J. Tkac 3076

**Synthesis of Palladium Nanoparticles in Various Carbon Materials**
M.A. Bae, J.H. Baek and M.S. Lee 3081