



NDNC 2016

Poster Program

1. Diamond Synthesis

- P1-1** **Synthesis of Nanopolycrystalline Diamond from Nanodiamond and Onion-like carbon**
Qin Zou, Mingzhi Wang^{*}, Hu Tang, Yujiao Ke, Jianmin Li, Jinqiang Zhang, Xiaochen Jiao, Yucheng Zhao (College of Mechanical Engineering, State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P1-2** **Deposition of diamond coatings on WC-Co tools with a gradient tungsten barrier layers by microwave plasma CVD**
ASHKINAZI Eugeny^{1,2}, KHOMICH Alexander^{2,3*}, SEDOV Vadim^{1,2}, RYZHKOV Stanislav¹, KHOMICH Andrey^{1,3}, TSYGANKOV Piotr⁴, VINOGRADOV Dmitriy⁴ and RALCHENKO Viktor^{5,1,2} (¹General Physics Institute RAS, ²National Research Nuclear University, ³Institute of Radio Engineering and Electronics RAS, ⁴Moscow State Technical University, Russia. ⁵Harbin Institute of Technology, China)
- P1-3** **Growth Characteristics of Type IIa and IIb Natural and Synthetic Diamonds Revealed Through CL and UV Fluorescence Imaging**
Ulrika F.S. D'Haenens-Johansson (Gemological Institute of America (GIA), USA)
- P1-4** **Experiment, Heat Transfer, Flow and Chemical Reaction Model for Hot Filament Chemical Vapor Deposition of Diamond With Different Grain Sizes**
D.C. Barbosa^{1,2*}, P.R.P. Barreto¹, M.A. Fraga¹, E.M. Pillaca¹, R.S. Pessoa³, V.J. Trava-Airoldi¹, and E.J. Corat¹ (¹NINPE, Instituto Nacional de Pesquisas Espaciais, ²FATEC, Faculdade de Tecnologia de Taubaté, ³UNIVAP, Universidade do Vale do Paraíba, Brazil)
- P1-5** **Diamond growth on MoW-interlayered steel substrates**
V. Kundra¹, J.L. Sullivan¹, D. Coathup¹, H. Ye^{1,*}, X.L. Zhang², K. Cooke² and H. L. Sun² (¹School of Engineering and Applied Science, Aston University, ²Teer Coatings Ltd (Miba Coating Group), Droitwich, Berry Hill Industrial Estate, UK)
- P1-6** **Comparison of gas phase composition on formation of micro- and nano-crystalline diamond films using high power microwave plasma assisted CVD**
C.J. Tang^{1,2,*}, A.J.S. Fernandes², Haihong Hou¹, X.F. Jiang¹, Shuilin Tu¹, J.L. Pinto² and H. Ye³ (¹Department of Physics, Jiangsu Key Laboratory for Advanced Functional Materials, Changshu Institute of Technology, China. ² Department of Physics, I3N (Institute for Nanostructures, Nanomodelling and Nanofabrication, University of Aveiro, Campus Universitário de Santiago, Portugal. ³School of Engineering and Applied Science, Aston University, UK)
- P1-7** **Parameter space optimization for low temperature diamond growth by hot filament CVD**
Sh. Michaelson, S. Elfimchev, R. Akhvlediani, A. Hoffman^{*} (Schulich Faculty of Chemistry, Technion-Israel Institute of Technology, Israel)
- P1-8** **Growth of Diamond Film on the Hydrocooling Copper Substrate at Constant Temperature by DC Arc Plasma Jet**
Jianchao Guo^a, Chenyi Hua^b, Jinlong Liu^c, Junjun Wei^d, Liangxian Chen^e, Lifu Hei^f, Chengming Li^{g*} (Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China)
- P1-9** **Nanodiamond electronics: An investigation of the properties of boron-doped detonation nanodiamonds**

Abdulkareem Afandi¹, Ashley Howkins², Ian W. Boyd² and Richard B. Jackman^{1*} (¹London Centre for Nanotechnology and the Department of Electronic and Electrical Engineering, University College London, ²ETC, Bragg Building, Brunel University, UK)

- P1-10 Revisiting the gas flow rate effect on diamond films deposition with a new dome-shaped cavity type MPCVD reactor**
J. Su^{1,2}, Y. Li^{1,3}, Y. Liu¹, M. Ding¹, W. Tang^{1*} (¹Institute for Advanced Materials and Technology, University of Science and Technology Beijing, ²Now with Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, ³Now with Institute of Laser Technology, Academy of Sciences of Hebei Province, China)
- P1-11 Intrinsic stress evolution during diamond film initial growth**
Chenyi Hua, Xiongbo Yan, Junjun Wei*, Jianchao Guo, Jinlong Liu, Liangxian Chen, Lifu Hei, Chengming Li (Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China)
- P1-12 Simulation and Experimental Researches on Deposition Technology for HFCVD Diamond Films on Surfaces of Ultra-small Holes of Wire-drawing Dies**
Chaoyue Ding, Fanghong Sun* and Xinchang Wang (Shanghai Jiao Tong University, China)
- P1-13 Photoemission-Assisted Plasma-Enhanced CVD Growth of Diamond-like Carbon Films and its Characterization**
Rintaro Sugimoto^{1*}, Shuichi Ogawa¹, Takenori Takano², Koushi Adachi², Yasuji Muramatsu³, Yuji Takakuwa¹ (¹IMRAM, Tohoku University, ²School of Engineering, Tohoku University, ³School of Engineering, University of Hyogo, JAPAN)
- P1-14 The influence of marginal discharge plasma on diamond film high rate deposition**
An Kang, Liu Jinlong, Zhao Yun, Chen Liangxian, Guo Jianchao, Hua Chengyi, Wei Junjun, Hei Lifu, Li Chengming* (Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China)
- P1-15 Fabrication of low defect density diamond by epitaxial lateral overgrowth**
F.N. Li, J.W. Zhang, X.L. Wang, W. Wang, Z.C. Liu, H.X. Wang, (Institute of wide band gap semiconductors, Xi'an Jiaotong University, China)
- P1-16 The synthesis of non-shedding curved surface no-dopant polycrystal diamond thin film and its secondary electron emission**
Kongting Wei, Chenggao Zhang, Qiang Wei, Shengli Wu*, Hongxing Wang (Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, China)
- P1-17 Enhancement of thermal conductivity of freestanding CVD diamond films by growing on both nuclear and growth sides**
Jiwen Zhao¹, Bing Dai^{1*}, Kang Liu¹, Guoyang Shu¹, Ge Gao¹, Jiaqi Zhu^{1*}, Jiecai Han¹ (¹Center for Composite Materials and Structures, Harbin Institute of Technology, China)
- P1-18 Lateral Overgrowth of High quality Diamond Film on Stripe Patterned Ir/HPHT-diamond Substrate**
Y.F. Wang, S.Y. Li, F. Lin, W. Wang, J.W. Zhang, H.X. Wang*, X. Hou (Xi'an Jiaotong University, Xi'an, China)
- P1-19 Porous Diamond Membrane Fabricated by Templated Growth for Electrochemical Separation Processes**
Fang Gao*, Christian Giese, Georgia Lewes-Malandrakis, Christoph E. Nebel (Fraunhofer Institute for Applied Solid State Physics (IAF), Germany)
- P1-20 Fabrication of nanocrystalline diamond film by HFCVD method without an Ar gas**

system

Hao Li, Zhongjian Li, Lecheng Lei, Bin Yang*(College of Chemical and Biological Engineering, Zhejiang University, China)

- P1-21 Effects of microwave frequency, input power and working gas on plasma performance in microwave plasma reactor for CVD diamond film**
X.J. Li^{1*}, SH.Q. Zheng¹, G. Chen¹, Y.S. Zheng¹, R. Li¹, W.Z. Tang² (¹The Ningbo branch of ordnance science institute of China, ²Beijing University of Science and Technology, China)
- P1-22 Low temperature growth of diamond films using with liquid methanol and argon mixtures in microwave plasma CVD reactor**
Li YANG^{1,2,3,5}, Caiyi JIANG^{1,3,5}, Shenghui GUO^{1,2,3,5}, Jiyun GAO⁴, Tu HU^{1,3,5}, Jinhui PENG^{1,2,3,5}, Libo ZHANG^{1,2,3,5*} (¹State International Joint Research Center of Advanced Technology for Superhard Materials, ²State Key Laboratory of Complex Nonferrous Metal Resources Clean Utilization, ³Faculty of Metallurgical and Energy Engineering, Kunming University of Science and Technology, China ⁴National Local Joint Laboratory of Engineering Application of Microwave Energy and Equipment Technology, China, ⁵School of Chemistry and Environment, Yunnan Minzu University, China)
- P1-23 Numerical simulation of ICP-RF plasma jet applied into diamond deposition**
Yang Bai, Yong-gang Zuo, Jia-jun Li, Hao Liu, He-wei Yuan, Guang-chao Chen, (College of Materials Science and Opto-Electronic Technology, University of Chinese Academy of Sciences, China)

2.Doping/Engineering

- P2-1 Study of carrier dynamics in single-crystal and polycrystalline Diamond**
Y. Song^{1,2}, H.X. Wang^{1*}, B.D. Peng², G.Z. Song², B.K. Li², L. Cao² (¹Institute of Wide Bandgap Semiconductors and Devices, XI'an Jiaotong University, ²State Key Laboratory of Intense Pulsed Radiation Simulation and Effect, Northwest Institute of Nuclear Technology, China)
- P2-2 Influence of boron doping level on properties and erosion behavior of boron-doped micro-crystalline diamond (BDMCD) film**
Xinchang Wang*, Xiaotian Shen, Fanghong Sun and Bin Shen (State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University, China)
- P2-3 Boron doped nanocrystalline diamond film electrode decorated with gold nanoparticles for highly sensitive non-enzymatic sensing of glucose**
Yousheng Zou*, Yuhang Dong and Haibo Zeng (School of Materials Science and Engineering, Institute of Optoelectronics and Nanomaterials, Nanjing University of Science and Technology, China)
- P2-4 Channelling radiation of electron in high-quality HPHT diamond single crystals**
T.N. Tran Thi¹, S. Connell², H Backe³, W Lauth³, D. Caliste⁴, J. H ärtwig^{1,2} (¹European Synchrotron Radiation Facility (ESRF), Grenoble, France. ² University of Johannesburg, South Africa. ³Johannes Gutenberg-University Mainz, Institute for Nuclear Physics, Germany)
- P2-5 Highly Conductive Nitrogen-Doped Ultrananocrystalline Diamond Films: Organic Amine Molecules as Liquid Nitrogen Source**
Wen Yuan, Liping Fang, Ying Xiong*, Bing Wang* (State Key Laboratory Cultivation Bases of Non-Metal Composite and Functional Material, Southwest University of Science & Technology, China)
- P2-6 Observation of new vibronic luminescence band H19 in irradiated and annealed diamonds**

KHOMICH Andrey^{1,2}, RALCHENKO Victor^{3,1,4}, KHOMICH Alexander^{2,4,5*},
KHMELNITSKY Roman⁵, KRIVOBOK Vladimir⁵, MASCHENKO Vladislav⁶,
KARKIN Eugeny⁷, AVERIN Aleksey⁶ and KONOV Vitaliy^{1,4} (¹General Physics
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³Harbin Institute of Technology, China. ⁴National Research Nuclear University MEPhI,
Russia. ⁵Physical Institute RAS, Russia. ⁶Institute of Physical Chemistry and
Electrochemistry RAS, Russia. ⁷Institute of Metal Physics UB RAS, Russia)

P2-7 Preparation of a Nanostructured BDD Electrode and its Application for Degradation of the Simulation Wastewater of Phenol

Dan Zhang¹, Mukfung Yuen², Zhaozhi Liu¹, Bin He² Feng Xu^{1*}, Dunwen Zuo¹ and Wenjun Zhang^{2*} (¹College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, China. ²Center of Super-Diamond and Advanced Films, City University of Hong Kong, China)

P2-8 Improvement of single crystalline diamond substrate morphology via ion beam milling

Jiannan Hu, Mingqing Ding, Lili Li, Guodong Bai, Dong Li, Xinghui Li, Hanyan Li, Yinfu Hu, Jun Cai, Jinjun Feng, Fujiang Liao (National Key Laboratory of Science and Technology on Vacuum Electronics Beijing Vacuum Electronics Research Institute, China)

P2-9 Boron-doped diamond with bulk-like properties at the near-atomic scale

A. Pakpour Tabrizi^{2*}, F. Mazzola^{*1}, J.A. Miwa³, F. Arnold³, M. Bianchi³, P. Hofmann⁴, J. W. Wells¹ and R. B. Jackman² (¹Department of Physics, Norwegian University of Science and Technology (NTNU), Norway. ²London Centre for Nanotechnology and Department of Electronic and Electrical Engineering, University College London (UCL), U.K. ³Aarhus University, Department of Physics and Astronomy, Denmark. ⁴Aarhus University, Department of Physics and Astronomy and I-Nano, Denmark)

P2-10 Fabrication of arrays of high-aspect-ratio diamond nanoneedles via maskless ECR-assisted microwave plasma etching

Yang Yang^{1*}, Xianfeng Chen², Yongbing Tang¹ and Wenjun Zhang^{2*} (¹Functional Thin Films Research Center, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, ²Department of Physics and Materials Science, Centre Of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, China)

P2-11 Sand blasting pretreatment of WC-Co hard metal substrates to increase the adhesion of CVD diamond coatings

Xiaotian Shen, Fanghong Sun* and Xinchang Wang (Shanghai JiaoTong University, China)

P2-12 Diamond single crystal nano-cone/wire arrays constructed from diamond films by reactive ion etching

M.F. Yuen, B. He*, W.J. Zhang (Center of Super-Diamond and Advanced Films (COSDAF), and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong)

P2-13 Optimization and Characterisation of O₂/CF₄ ICP Reactive Ion Etch on Single Crystal Diamond Substrates

Marie-Laure Hicks, William Parfitt, Joseph Welch and Richard B. Jackman (London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, UK)

P2-14 Enhanced Tribological Performance of diamond films enabled by electrophoretic depositing graphene film as solid lubricant

S.L.Chen, B.Shen* and F.H.Sun (Shanghai Jiao Tong University, China)

- P2-15** **Wear performance of diamond coated WC-10%Co tools with CrN interlayer**
 Maneesh Chandran^{1*}, Fiona Sammler², Rozalia Akhvlediani¹, and Alon Hoffman^{1*}
 (¹Schulich Faculty of Chemistry, Technion- Israel Institute of Technology, Israel.
²Fraunhofer Institute for Production Systems and Design Technology, Germany)
- P2-16** **Preparation of Copper Patterns on Diamond and the Adhesion Strength Evaluation**
 Jia-jun Li, Yong-gang Zuo, Yang Bai, Hao Liu, He-wei Yuan, Guang-chao Chen*
 (College of Materials Science and Opto-Electronic Technology, University of Chinese
 Academy of Sciences, China)

3. Biological and Biomedical / NV center

- P3-1** **Spontaneous differentiation of human neural stem cells on nanodiamond**
 Alice Taylor, Citalali Gonzalez, Barbora Vagaska, Patrizia Ferretti and
 Richard B. Jackman (London Centre for Nanotechnology and Department of Electronic
 and Electrical and Engineering, University College London, UK)
- P3-2** **Nanodiamonds as fluorescent biomarkers and adsorbents of heavy
 metals**
 K. Laptinskiy¹, S. Burikov¹, S. Dolenko², E. Khusainova¹, T. Laptinskaya¹, O.
 Sarmanova¹ and T. Dolenko¹ (¹Faculty of Physics of Lomonosov Moscow State
 University, ²D.V. Skobeltsyn Institute of Nuclear Physics, M.V. Lomonosov Moscow
 State University, Russia)
- P3-3** **Revelation of nanodiamond – DNA interactions in Raman, IR and
 fluorescence spectra of water suspensions of nanodiamonds**
 K. Laptinskiy¹, S. Burikov¹, E. Khusainova¹, J. M. Rosenholm², O. Shenderova³, I.
 Vlasov^{4,5} and T. Dolenko¹ (¹Faculty of Physics of Lomonosov Moscow State
 University, Russia. ²Laboratory for Physical Chemistry, Center for Functional
 Materials, Åbo Akademi University, Finland. ³Adamas Nanotechnologies, Inc, Raleigh,
 USA. ⁴General Physics Institute, Russian Academy of Sciences, Russia. ⁵National
 Research Nuclear University MEPhI, Russia)
- P3-4** **Nanodiamond Interaction with Blood Proteins In Vitro and In Vivo Studies**
 Yu-Chung Lin^{1*}, Lin-Wei Tsai¹, Elena Perevedentseva¹, Andrei E. Lugovtsov²,
 Alexander. Priezhev² and Chia-Liang Cheng¹ (¹Department of Physics, National Dong
 Hwa University, Taiwan. ²Physics Department and International Laser Center, M.V.
 Lomonosov Moscow State University, Russia)
- P3-5** **Science and Technology of Biocompatible Ultrananocrystalline Diamond (UNCD)
 Coating for a New Generation of Dental Implants**
 D.G. Olmedo^{1,2}, M.B. Gugliemotti^{1,2}, B. Patel^{3,4}, I. Marques^{3,4}, M. Fernada Alfaro^{3,4}, T.
 Shokufar^{4,5}, C. Takoudis^{4,6}, S. Campbell³, C. Sukotjo^{3,4}, M.T. Mathew^{3,4,7}, A. C. Duran-
 Martinez⁸, P. Gurman⁸, O. Auciello^{8,9} (¹Department of Oral Pathology, School of
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 Nanomedicine (IBTN), USA. ⁵Michigan Technological University, Department of
 Mechanical Engineering, USA. ⁶University of Illinois at Chicago, Department of
 Bioengineering, USA. ⁷Rush University Medical Center, Department of Orthopedics,
 USA. ⁸Materials Science and Engineering, University of Texas at Dallas, Richardson,
 USA. ⁹Bioengineering, University of Texas at Dallas, Richardson, USA)

- P3-6 Drug loading and efficiency of nanodiamond-cancer drug complexes for application in drug delivery**
 Lu-Ang Wang^{1*}, Zhe-Rui Lin¹, Yu-Chung Lin¹, Kuan-Ting Wu², E. Perevedentseva^{1,3}, Chia-Liang Cheng^{1**} (¹Department of Physics, National Dong Hwa University, Taiwan. ²Department of Physics, National Taiwan University, Taiwan. ³P. N. Lebedev Physics Institute, Russian Academy of science, Russia)
- P3-7 Shape-controlled of three-dimensional self-assembly graphene by hydrothermal reaction time to biological application**
 Meng-Li Zhao¹, Ye Cao¹, Huan-Huan Gong¹, De-Jun Li^{1*}, Rong-Xin Wan², Han-Qing Gu² (¹College of Physics and Materials Science, Tianjin Normal University, ²Tianjin Institute of Urological Surgery, Tianjin Medical University, China)
- P3-8 The effect of autophagy modulation on drug delivery using nanodiamond in cancer treatment**
 Z.- R. Lin¹, Y.- C. Lin¹, L.- A. Wang¹, E. Perevedentseva^{1,2} and C.- L. Cheng¹ (¹Department of Physics, National Dong Hwa University, Taiwan. ² P. N. Lebedev Physics Institute, Russian Academy of Science, Russia)
- P3-9 Eco-friendly mass production of poly(p-phenylenediamine)/graphene oxide nanoplatelet composites and their electrorheological characteristics**
 Yanlin Cao¹, Hyung Jin Choi², Wen Ling Zhang^{1*} and Jingquan Liu^{1*} (¹College of Chemical Science and Engineering; Laboratory of Fiber Materials and Modern Textile, the Growing Base for State Key Laboratory, Qingdao University, China. ²Department of Polymer Science and Engineering, Inha University, Korea)
- P3-10 Individual CNT growth for neuronal intra-cellular recording**
 Sungmyung Kang, Alice Taylor, Richard B. Jackman (London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, UK)
- P3-11 Bottom-up Electrochemical Preparation of Solid-State Carbon Nanodots Directly from Nitriles/Ionic Liquids Using Carbon-Free Electrodes and the Applications in Specific Ferric Ion Detection and Cell Imaging**
 Fushuang Niu, Yuanhong Xu, and Jingquan Liu* (College of Materials Science and Engineering; Laboratory of Fiber Materials and Modern Textile, the Growing Base for State Key Laboratory; Collaborative Innovation Center for Marine Biomass Fibers, Materials and Textiles of Shandong Province; Qingdao University, China)
- P3-12 Silicon-related Color Centers in Diamond: Not Only SiV**
 Vadim SEDOV^{1,2*}, Victor RALCHENKO^{3,1,2}, Andrew KHOMICH^{1,4}, Vladimir KRIVOBOK⁵, Alexander KHOMICH⁴ and Vitaly KONOVI^{1,2} (¹General Physics Institute RAS, Russia. ²National Research Nuclear University MEPhI, Russia. ³Harbin Institute of Technology, China. ⁴Institute of Radio Engineering and Electronics RAS, Russia. ⁵Lebedev Physical Institute RAS, Russia)
- P3-13 Thermal oxidation induced photoluminescence of SiV centers in ultrananocrystalline diamond films**
 Yingshuang Mei, Xiaojun Hu*, Shaohua Lu (College of Materials Science and Engineering, Zhejiang University of Technology, China)
- P3-14 Effects of morphology and oxygen surface termination for Silicon-vacancy photoluminescence in nanocrystalline diamond films**
 Chengke Chen, Xiaojun Hu* (College of Materials Science and Engineering, Zhejiang University of Technology, China)
- P3-15 Nitrogen vacancy spin resonance of mechanical oscillator with driven microwave cavity**

Ren Ren^{1*}, Ying-Jing Ren², Xuan Li¹, CE Fu¹ and Rui-Qi Lu¹ (¹Department of optics Information, Xi'an Jiao Tong University, ²The Internet of Things, Beijing University of Posts and Telecommunications, China)

4.Graphene

- P4-1 Phase transformation of graphdiyne under high temperature**
Lingyu Liu, Meng Hu, Yilong Pan, Zihe Li, Julong He, Dongli Yu, Yongjun Tian, Zhisheng Zhao*(State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P4-2 Hierarchical Composite Structure of Few-Layers MoS₂ Nanosheets Supported by Vertical Graphene on Carbon Cloth for High-Performance Hydrogen Evolution Reaction**
Zhenyu Zhang, Wenjun Zhang*(Center of Super-Diamond and Advanced Films (COSDAF), and Department of Physics and Materials Sciences, City University of Hong Kong, China)
- P4-3 Direct fabrication of High-quality Monolayer Graphene on Insulating Substrates by Rapid Thermal Treatment**
Rui Huang¹, Zefei Wu², Yanqing Guo¹, Jie Song¹, Zhenxu Lin¹ and Ning Wang² (¹Department of Physics and Electronic Engineering, Hanshan Normal University, ²Department of Physics, the Hong Kong University of Science and Technology, China)
- P4-4 Growth of thickness-controlled epitaxial graphene on on-axis 6H-SiC (C-face) substrate in graphite enclosure**
Guo Hui¹, Hu Yanfei^{1*}, Chong Laiyuan¹ and Zhang Yuming¹ (¹School Of Microelectronics, Key Laboratory of Wide Band-Gap Semiconductor Materials and Devices, Xidian University, China)
- P4-5 Magneto-optical effect of graphene**
Hai-Xia Da^{1*} and Xiao-Hong Yan^{2*} (¹Nanjing University of Posts and Telecommunications, College of Electronic Science and Engineering, Key Laboratory of Radio Frequency and Micro-Nano Electronics of Jiangsu Province, ²College of Science, Nanjing University of Aeronautics and Astronautics, China)
- P4-6 Nonlinear Conductivity Behavior of Epoxy Based Nanocomposites with Graphene and Carbon Black**
H. Li, C. Wang, Z.H. Guo, Y.X. Zhang, P.Liu and Z.R. Peng* (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China)
- P4-7 Oxygen reduction reaction on graphene in electro-Fenton: In situ generation of H₂O₂ as hydroxyl radical precursors for oxidation of organic compounds**
Chen-Yu Chen¹, Cheng Tang¹, Hao-Fan Wang¹, Cheng-Meng Chen^{2*}, Xiaoyuan Zhang^{3*}, Xia Huang^{3*} and Qiang Zhang^{1*} (¹Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, ²Key Laboratory of Carbon Materials, Institute of Coal Chemistry, Chinese Academy of Sciences, ³State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, China)
- P4-8 Influence of the twisted angles and the growing parameters of transferred graphene by a polarizing Raman**
Qin Lu, Jincheng Zhang*, Dong Wang, Jing Ning, Meishan Mu, Yue Hao (The State Key Discipline Laboratory of Wide Band Gap Semiconductor Technology, Xidian University, China)
- P4-9 Investigation of twist angle and in-plane strain on bandgap tuning of WS₂-graphene**

heterostructures

Meishan Mu, Dong Wang*, Jing Ning, Qin Lu, Jincheng Zhang, Yue Hao (The State Key Discipline Laboratory of Wide Band Gap Semiconductor Technology, Xidian University, China)

- P4-10 Mechanical and Frictional Behaviors of Strained Multilayer Graphene**
Lei Yang^{1*}, Qi Zhang² and Dongfeng Diao³ (¹Key Laboratory of Education Ministry for Modern Design and Rotor-Bearing System, Xi'an Jiaotong University, ²Collaborative Innovation Center of High-End Manufacturing Equipment, Xi'an Jiaotong University, ³Institute of Nanosurface Science and Engineering (INSE), Shenzhen University, China)
- P4-11 An ab initial study of the ammonia adsorption on graphene on metal and its effect on the contact resistance**
Weihua Liu*, Yang Song and Guiming Cao (Department of Microelectronics, School of Electronics and Information Engineering, Xi'an Jiaotong University, China)
- P4-12 A Feasible Route for Synthesis of Three Dimension Carbon Micro Ball/Reduced Graphene Oxide with High Electrochemical Properties**
Aning Feng^{1*}, Juanjuan Wang¹, Lei Miao² and Bailing Jiang¹ (¹School of Materials Science and Engineering, Xi'an University of Technology, ²Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences, China)
- P4-13 Hydrothermal synthesis of MoSe₂/nitrogen-doped reduced graphene oxide heterostructure for enhanced photoelectrochemical hydrogen production**
Long Zhang¹, Lan Sun¹, Yuhong Huang², Kewei Xu^{1,3,*} and Fei Ma^{1,*} (¹State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, ²College of Physics and Information Technology, Shaanxi Normal University, ³Department of Physics and Opt-electronic Engineering, Xi'an University of Arts and Science, China)
- P4-14 Investigation of the Electronic Structure and Optical Properties of Nitrogen Doped Graphenes by First-principle Calculations**
Chen Yang^{1*} and Yangping Li² (¹Shaanxi Province Thin Film Technology and Optical Test Open Key Laboratory, School of Photo-electrical Engineering, Xi'an Technological University, ²School of Materials Science and Engineering, Northwestern Polytechnical University, China)
- P4-15 The Study of Thermal Characteristics of Single Layer Graphene with Stacked Single Crystal Graphene Using Molecular Dynamics Methods**
Wen Wang¹, Xin Li^{1,*}, Ming Fang¹, Weihua liu¹ and Xiaoli Wang² (¹School of Electronics and Information Engineering, Xi'an Jiaotong University, ²School of Science, Xi'an Jiaotong University, China)
- P4-16 Study on a facile method for fabricating large-area conductive graphene film on glass substrate**
Xinchen Ran, Minqiang Wang (Xi'an Jiaotong University, China)
- P4-17 Thermal CVD Synthesis of Graphene Flowers and Quantum Dots by Controlled Growth and Etching Processes**
Ying Ren Chen, Gideon Chen and Yonhua Tzeng* (Institute of Microelectronics, Department of Electrical Engineering, National Cheng Kung University, Taiwan)
- P4-18 The Synthesis and Applications of Graphene/Au Nanorods Composites**
Simin Lu and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)
- P4-19 ZnO nanosheet-graphene composite synthesized via a simple solvothermal treatment exhibiting enhanced photocatalytic performance**
Xueling Song and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)

- P4-20 One-step Electrochemical Polymerization of Polyaniline Flexible Counter Electrode Doped by Graphene**
 Qi Qin*, Fang He and Wangxi Zhang (School of Materials and Chemical Engineering, Zhongyuan University of Technology, China)
- P4-21 Secondary electron emission of graphene-coated copper**
 Meng Cao*, Ming Weng, Xiu-Sheng Zhang and Yong-dong Li (Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Department of Electronic Science and Technology, Xi'an Jiaotong University, China)
- P4-22 Graphene Electroconductivity: the Influence Water at the Grafene-Substrate Interface**
 Vadim D. Frolov*, Pavel A. Pivovarov and Vitaly I. Konov (A.M. Prokhorov General Physics Institute of RAS, Russia)
- P4-23 Synthesis of high quality, oxide-free graphene flakes by Electrochemical Exfoliation of Graphite cathode**
 Yuan ZHANG^{1,2} and Youlong XU^{1,2*} (¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, ²Shaanxi Engineering Research Center of Advanced Energy Materials & Devices, Xi'an Jiaotong University, China)
- P4-24 Synthesis of Short and ZnCl₂-treated Graphene Oxide Nanoribbons and Their Electrochemical Properties**
 Chia-Liang Sun*, Shun-Yi Lai, Chia-Heng Kuo, Chen-Fu Pan and Chun-Hao Su (Department of Chemical and Materials Engineering, Chang Gung University, Taiwan)
- P4-25 Modulated Deformation of Lipid Membrane due to Reduction of Graphene Oxide Substrate under Laser Irradiation**
 Jiaojiao Liu¹, Bing Yuan^{1*}, Kai Yang¹ and Yuqiang Ma² (¹Center for Soft Condensed Matter Physics and Interdisciplinary Research, Soochow University, ²National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, China)
- P4-26 Inductive Heating Property of Superparamagnetic Graphene Nanosheets-Fe₃O₄ Nanoparticles Hybrid in an AC Magnetic Field for Localized Hyperthermia**
 Cheng Li, Dong-Lin Zhao*, Fei-Fei Sun and Ran-Ran Yao (State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, China)
- P4-27 Dramatic Mechanical Increments of Carbon Fiber and Amine Functionalized Graphene Nanosheets Multi-scale Synergetic Reinforced Epoxy Matrix Composites**
 Dong-Lin Zhao*, Xia-Jun Wang, Dong-Dong Zhang and Ran-Ran Yao (State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, China)
- P4-28 Spontaneous nuclei-free area on copper substrate and growth competition between graphene domains**
 Quanfu Li, Weihua Liu*, Xin Li and Xiaoli Wang (Department of Microelectronics, School of Electronics and Information Engineering, Xi'an Jiaotong University, China)
- P4-29 Tribo-electricity behavior of polydimethylsiloxane and its effect on a graphene channel**
 Weimiao Qu, Weihua Liu*, Xin Li and Xiaoli Wang (Department of Microelectronics, School of Electronics and Information Engineering, Xi'an Jiaotong University, China)
- P4-30 Nanoporous graphene and graphene quantum dots: clean synthesis, structural characterization and applications**
 Tae Hee Han (Hanyang University, South Korea)

- P4-31 Computer Simulation of the Interaction of 7, 8 and 9 Atomic Linear Carbon Clusters with Nanographene**
YADGAROV Ishmumin^{1*}, STELMAKH Vasiliy¹ and DZHURAKHALOV Abdiravuf²
(¹Institute of Ion-Plasma and Laser Technologies, Uzbekistan. ²University of Antwerp, Belgium)
- P4-32 Catalyst-free Synthesis of N-, B-, S-, F-, and Bi-doped Graphene via arc discharge with different solid dopants: Melamine, Boronic acid, Ammonium sulfate, Teflon and Bismuth oxide**
Y. L. Nan, B. Li, S.C. Shen, P. Zhang and X. L. Song* (State Key Laboratory for Mechanical Behavior of Materials, School of Materials Science and Engineering, Xi'an Jiaotong University, China)
- P4-33 Direct measurements of ultrafast structural dynamics in Graphene by low energy femtosecond electron diffraction**
Duan Luo^{1,2}, Xing Wang^{1*}, Jinshou Tian¹, Wenlong Wen¹, Yonglin Wei¹, Hulin Liu¹, Xiaofeng Sai¹, Yu Lu¹, Junfeng Wang¹ (¹State Key Laboratory of Transient Optics and Photonics and Key laboratory of Ultrafast Photoelectric Diagnostics Technology, Xi'an Institute of Optics and Precision mechanics, Chinese academy of Sciences, ²Graduate School of Chinese Academy of Sciences (CAS), China)
- P4-34 High-activity single-atom catalysts for CO oxidation on B/Fe codoped graphene**
Xiaonan Wang, Xiaoyang Zhang, Shifei Qi*, Jianfeng Jia, Xiaohong Xu and Haishun Wu (School of Chemistry and Materials Science, China)
- P4-35 Preparation and supercapacitor performance of S doped graphene**
ZHAO Ting Kai*, GUO Xin Ai, JIN Wen BO, JI Xiang Lin, DANG A Lei and LI Tie Hu (School of Materials Science and Engineering, Northwestern Polytechnical University, China)
- P4-36 Research on preparation, characterization and performance of the graphene**
Miao Zheng*, Zhong Rongxia and Zhao JianFeng (The Air Force Engineering University, China)
- P4-37 First-principles investigation of novel chemical routes for the efficient graphene hydrogenation**
Yevhen Horbatenko¹, Min Choi², Rodney S. Ruoff^{1,2}, Christopher W. Bielawski^{1,2} and Noejung Park^{1,3*} (¹IBS Center for Multidimensional Carbon Materials, Ulsan National Institute of Science and Technology, ²Department of Chemistry, Ulsan National Institute of Science and Technology, ³Department of Physics, Ulsan National Institute of Science and Technology, Korea)

5. Carbon

- P5-1 A Novel Approach for Large-area Carbon Quantum Dots Flexible Film**
Yuan Yu and Jinfang Zhi* (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China)
- P5-2 A novel carbon from compressing large diameter carbon nanotubes**
Yilong Pan, Yufei Gao, Meng Hu, Mei Xiong, Julong He, Yongjun Tian, Zhisheng Zhao (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P5-3 Phase transformation of carbon onion under high temperature and high pressure**
H. Tang, M.Z. Wang*, Q. Zou and Y.J. Ke (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P5-4 Carbon dot-based fluorescence turn-on sensor for hydrogen peroxide with a photo-**

induced electron transfer mechanism

Minhuan Lan, Yanfei Di and Wenjun Zhang* (Center of Super-Diamond and Advanced Films (COSDAF), and Department of Physics and Materials Sciences, City University of Hong Kong, China)

- P5-5 Design of Fe-N-Doped Porous Carbon for Oxygen Reduction Reaction**
Jin-Cheng Li, Peng-Xiang Hou, Shi-Yong Zhao and Chang Liu* (Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China)
- P5-6 Thermal Conductivity and Gas Adsorption Performance of Cu-BTC Mental Organic Framework and Carbon Fiber Paper Composites**
W. Zhang^{1*}, H. Wang² and Z.G. Qu² (¹School of Science, Xi'an Jiaotong University, ²MOE Key Laboratory of Thermo-Fluid Science and Engineering, School of Energy and Power Engineering, Xi'an Jiaotong University, China)
- P5-7 Quantitative analysis of $sp^3/(sp^2+sp^3)$ ratio in DLC films using NEXAFS and solid-state NMR**
XiaoLong Zhou^{1*}, Tsuneo Suzuki¹, Seiichi Kawahara¹, Kazuhiro Kanda², Keiji Komatsu¹ and Hidetoshi Saitoh¹ (¹Graduate School of Engineering, Nagaoka University of Technology, Japan. ²Laboratory of Advanced Science and Technology for Industry, University of Hyogo, Japan)
- P5-8 Numerical Simulation Study of Proton Radiation Tolerance of the Tetrahedral Amorphous Carbon (ta-C) Films**
Xiaoyan Wang^{1,2}, Xin Liu¹, Yanwu Wang¹ and Yuqing Zhao¹ (¹Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, ²School of Electronics and Information Engineering, Taiyuan University of Science and Technology, China)
- P5-9 Effect of different surface textures on the forming and properties of interface between ta-C coatings and substrate**
Xiaoyan Wang^{1,2}, Shudong An¹, Xiaobo Wang¹, Xian Chen¹, Yanwu Wang¹ and Yuqing Zhao¹ (¹Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, ²Taiyuan University of Science and Technology, Electronics and Information Engineering, China)
- P5-10 Carbon quantum dots/Bi₂O₃ heterostructured nanoparticles with enhanced photocatalytic activity**
Qinghe Que, Wenxiu Que*, Yonglei Xing and Xingtian Yin (Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic and Information Engineering, Xi'an Jiaotong University, China)
- P5-11 Preparation and characterization of carbon quantum dot/Bi₂O₂CO₃ hybrid photocatalyst with an enhanced photocatalytic activity**
Yonglei Xing, Wenxiu Que*, Qinghe Que and Xingtian Yin (Electronic Materials Research Laboratory, International Center for Dielectric Research, Key Laboratory of the Ministry of Education, School of Electronic and Information Engineering, Xi'an Jiaotong University, China)
- P5-12 Low Dimension Carbon Materials Grown by Atomic Layer Deposition**
Yijun Zhang¹, Ming Liu^{1*}, Wei Ren^{1*}, Zuo-Guang Ye^{2,1*} (¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, China, ²Department of Chemistry and 4D LABS, Simon Fraser University, Canada)
- P5-13 Effects of VHF plasma CVD treatment for amorphous carbon layer (ACL)**

Youngchul Choi, Yoongon Kim, Jongwook Jeung, Youngsoo Kwon, Hongjae Shin, Hyoungchan Ha and Jaihyung Won (Advanced Development Team, Wonik IPS, 75, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea)

P5-14 Deposition amorphous carbon layer by pulse plasma PECVD

Youngchul Choi, Changhak Shin, Sangmin Lee, Junghoon Ryu, Hongjae Shin, Min Kim, Hyoungchan Ha and Jaihyung Won (Development 2 Team, Wonik IPS, 75 Jinwisandanro, Jinwimyeon, Pyeongtaeksi, Gyeonggido, Korea)

P5-15 Birch-type reduction of graphite fluoride

Xu Zhang¹, Karel Goossens¹, Wei Li¹, Christopher W. Bielawski^{1,2} and Rodney S. Ruoff^{1,2,3*} (¹Center for Multidimensional Carbon Materials (CMCM), Institute for Basic Science (IBS), ²Department of Chemistry, Ulsan National Institute of Science and Technology (UNIST), ³School of Materials Science and Engineering, UNIST, Korea)

P5-16 Effect of Ag concentration on Structural, mechanical, Antibacterial properties of Ag/DLC coatings

Lei Dong¹, Jian-Gang Yu¹, De-Jun Li^{1*}, Rong-Xin Wan² and Han-Qing Gu² (¹College of Physics and Materials Science, Tianjin Normal University, ²Tianjin Institute of Urological Surgery, Tianjin Medical University, China)

P5-17 Tuning properties of carbon dots by heteroatom incorporation

Shengliang Hu* (School of materials Science and Engineering, North University of China, China)

P5-18 Preparation of adamantane-based sp³-rich carbon materials

Xiong Chen¹, Sun Hwa Lee¹ and Rodney S. Ruoff^{1, 2*} (¹Center for Multidimensional Carbon Materials (CMCM), Institute for Basic Science (IBS), ²Department of Chemistry and School of Materials Science and Engineering, Ulsan National Institute of Science and Technology (UNIST), Korea)

P5-19 Ab Initio Investigation on Cu/Cr Codoped Amorphous Carbon Nanocomposite Films with Giant Residual Stress Reduction

Xiaowei Lia*, Peng Guob, Lili Sunc, Aiyang Wangd* and Peiling Kee (Key Laboratory of Marine Materials and Related Technologies, Key Laboratory of Marine Materials and Protective Technologies of Zhejiang Province, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China)

P5-20 Polymeric amorphous carbon films with high hardness

Xiaoli Wei, Fuming Wang*, Ling Zhang and Xiaping Chen (Department of Physics, Xiamen University, China)

P5-21 A controllable method for synthesizing buck carbon nano-onions at HPHT

Yanbin Zheng^{1, 2}, Qiang Tao¹ and Pinwen Zhu^{1*} (¹State Key Laboratory of Superhard Materials, College of physics, Jilin University, China. ²Changchun University of Chinese Medicine, China)

P5-22 Reducing dimensions of nanocarbons in electric arc plasma via rapid flow treatment

B. Li, Y. L. Nan, P. Zhang and X. L. Song* (State Key Laboratory for Mechanical Behavior of Materials, School of Materials Science and Engineering, Xi'an Jiaotong University, China)

P5-23 Nano-Carbon Pixel Arrays for Ionizing Particles Monitoring

CONTE Gennaro^{1*}, PACILLI Marco¹, ALLEGRINI Paolo¹, SALVATORI Stefano², OLIVA Pietro², KOMLENOK Max³, BOLSHAKOV Andrey³, RALCHENKO Victor^{4,3} and KONOV Vitaly³ (¹University Roma Tre, Italy. ²University Niccolò Cusano, Italy. ³A.M. Prokhorov General Physics Institute, RAS, Russia. ⁴Harbin Institute of Technology, China)

P5-24 High-performance supercapacitor material based on Various activated carbons

nanostructures

Lei Dong¹, Ruixian Liu¹, Conglai Long¹, Huanhuan Gong¹, De-Jun Li^{1*}, Rong-Xin Wan² and Han-Qing Gu² (¹College of Physics and Materials Science, Tianjin Normal University, ²Tianjin Institute of Urological Surgery, Tianjin Medical University, China)

P5-25 Formation of Nano-Carbon by In-Liquid Plasma Method

Abdulrahman Alsaeedi*, Yutaro Ueno and Yoshiyuki Show (Tokai University, Department of Electrical and Electronic System Engineering, School of Engineering, Japan)

P5-26 Raman identification of C₇₀ monomers, dimers and oligomers

Bertil Sundqvist^{1,2*} (¹State Key Laboratory of Superhard Materials, Jilin University, China. ²Department of Physics, Umeå University, Sweden)

P5-27 The temperature dependence of carbon dot fluorescence from 5 K to 320 K.

Philipp Reineck*, Desmond Lau and Brant C. Gibson (ARC Centre of Excellence for Nanoscale BioPhotonics, School of Applied Sciences, RMIT University, Australia)

P5-28 Electromagnetic wave absorption properties of silicon-based polymer derived ceramics containing nanocarbon

Xiaowei Yin (Northwest Polytechnical University, China)

P5-29 Comparison of Electrolyte in Diamond-like Carbon Films Liquid Electrochemical Deposition

Yangyang He^{1*}, Yan Cong^{1*}, Guifeng Zhang², Dedi Liu¹, Ying Zhao¹ and Volker Buck³ (¹Institute of Nano-photonics, School of Physics and Materials Engineering, Dalian Nationalities University, China. ²School of Materials Science and Engineering, Dalian University of Technology, China. ³Thin Film Technology Group, Faculty of Physics, University Duisburg-Essen and CeNIDE, Germany)

P5-30 Comparative study of structure and wetting properties of diamond-like carbon films by W and Cu doping

Sun Lili, Li Xiaowei, Guo Peng and Wang Aiyong* (Key Laboratory of Marine Materials and Related Technologies, Key Laboratory of Marine Materials and Protective Technologies of Zhejiang Province, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China)

P5-31 Facile fabrication of ultra-low density, high-surface-area, broadband antireflective carbon aerogels as ultra-black materials

Xi Yang^{1*}, Jiayi Zhua¹, Zhibing Fu¹, Junhui He², Chaoyang Wang¹, Weidong Wu¹ and Lin Zhang¹ (¹Research Center of Laser Fusion, China Academy of Engineering Physics, ²Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China)

P5-32 A facile method for the deposition of thermally stable diamond like carbon films via carbon dioxide precursor gas

Sekhar C. Ray^{1*}, Susanta Sinha Roy², Ravi Kant Upadhyay², Mark A. Millar³ and James A. McLaughlin³ (¹Department of Physics, College of Science, Engineering and Technology, University of South Africa, South Africa. ²Department of Physics, School of Natural Sciences, Shiv Nadar University, India. ³Nanotechnology and Integrated Bio-Engineering Centre (NIBEC), University of Ulster at Jordanstown, Shore Road, United Kingdom)

P5-33 Growth of graphene-liked carbon films on 6H-SiC wafer by chlorination-annealing method at low temperature

Guo Hui, Hu Yanfei*, Zhang Yuming and Chong Laiyuan (School Of Microelectronics, Key Laboratory of Wide Band-Gap Semiconductor Materials and Devices, Xidian University, China)

P5-34 Synthesis, Characterization of meso-Position Sulfur embedded Quinoidal

Bisanthene

Li Jinling*, Wang Haikuo, Xie Baozhan, Song Weiqiang and Peng Jin (School of Material Science & Engineering, Henan University of Technology, China)

- P5-35 Residual stress analysis of amorphous ceramic interlayered diamond film on cemented carbide substrate by using finite element method**
Yuxiao Cui, Bin Shen and Fanghong Sun* (School of Mechanical Engineering, Shanghai Jiao Tong University, China)
- P5-36 Laser ablation in solution synthesis of highly photoluminescent carbon nanodots with tunable emission for Fe³⁺ detection**
Vanthan Nguyen^{1,2}, Lihe Yan¹, Jinhai Si^{1*} and Xun Hou¹ (¹Xi'an Jiaotong University, China. ²Le Quy Don Technical University, Vietnam)
- P5-37 High Pressure Study of the Rotor-stator Compound C60-cubane**
M.R. Du, M.G. Yao and B.B. Liu*, (State Key Laboratory of Superhard Materials, Jilin University, China)

6.Diamond Surface/ Characterization

- P6-1 Electron emission from diamond surfaces for night vision applications**
Joseph Welch and Richard B. Jackman (London Centre for Nanotechnology and Department of Electronic & Electrical Engineering, University College London, UK)
- P6-2 Electrical Surface Properties of Ultrananocrystalline Diamond and Microcrystalline Diamond Films on HfO₂ Layers via Hot Filament Chemical Vapor Deposition**
J.J. Alcantar-Peña^{1,2}, E.M.A. Fuentes-Fernandez¹, G. Lee¹, D. Berman-Mendoza², A. Gabriela-Montaño^{1,3}, K. Ramos-Corella^{1,3}, M. Quevedo¹ and O. Auciello^{1,4*} (¹Materials Science and Engineering, University of Texas at Dallas, USA. ²Investigación en Electrónica, Universidad de Sonora, Mexico ³Investigación en Polímeros y Materiales, Universidad de Sonora, Hermosillo, Mexico. ⁴Bioengineering, University of Texas at Dallas, Richardson, TX 75080)
- P6-3 Determination of Indium Oxynitride/Diamond interface Band Alignments by X-ray photoelectron spectroscopy**
L.Yang, S. Guo, B. Dai, H.L. Yu, P. Lei, J.C. Han and J.Q.Zhu* (Center for Composite Materials and Structures, Harbin Institute of Technology, China)
- P6-4 Effect of High Microwave power on Hydrogen Defect Formation in Nanocrystalline Diamond Films**
C.J. Tang^{1,2*}, J.L. Pinto², X.F. Jiang¹ and H. Ye³ (¹Department of Physics, Jiangsu Key Laboratory for Advanced Functional Materials, Changshu Institute of Technology, China. ²Department of Physics, I3N (Institute for Nanostructures, Nanomodelling and Nanofabrication), University of Aveiro, Campus Universitário de Santiago, Portugal. ³School of Engineering and Applied Science, Aston University, UK)
- P6-5 Fracture strength and toughness of CVD polycrystalline diamond films**
Chengming Li*, An Kang, Liangxian Chen, Jianchao Guo, Chengyi Hua, Xiongbo Yan, Jinlong Liu, Junjun Wei and Lifu Hei (Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China)
- P6-6 An investigation on dielectric properties of diamond films in the millimeter wave range of the K-Ka band**
Yanqing Liu*, Minghui Ding, Xinru Lu and Weizhong Tang (Institute for Advanced Materials and Technology, University of Science and Technology Beijing, China)
- P6-7 Surface structure of phosphorus terminated diamond (100) surface**

Dong Fan, Shaohua Lu and Xiaojun Hu* (College of Materials Science and Engineering, Zhejiang University of Technology, China)

P6-8 High quality hetero-epitaxial growth of AlN films on CVD diamond by RF sputtering

Liangxian Chen^{1*}, Hao Liu¹, Sheng Liu¹, Yichao Wang², Jianchao Guo¹, Chengyi Hua¹, Jinlong Liu¹, Junjun Wei¹, Lifu Hei¹ and Chengming Li¹ (¹Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China. ²School of Electrical and Computer Engineering, Australia)

P6-9 Research on Secondary Electron Emission Effects of Diamond Film Prepared with MP-CVD method

Qiang Wei, Shengli Wu*, Wenbo Hu, Jintao Zhang and Hongxing Wang (Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, China)

P6-10 The carrier transport characteristics of H-terminated diamond films prepared by using molecular hydrogen and atomic hydrogen

J.L. Liu¹, L.X. Chen¹, J.C. Guo¹, C.Y. Hua¹, J.J. Wei¹, L.F. Hei¹, Q. Liu², J.J. Wang³, Z.H. Feng³ and C.M. Li^{1*} (¹Institute for Advanced Materials and Technology, University of Science and Technology Beijing, ²State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, ³Science and Technology on ASIC laboratory, Hebei Semiconductor Research Institute, China)

P6-11 Mechanism of graphitization and optical degradation of CVD diamond films by rapid heating treatment

Xiongbo Yan, Junjun Wei*, Jianchao Guo, Chengyi Hua, Jinlong Liu, Liangxian Chen, Lifu Hei and Chengming Li (Institute of Advanced Materials and Technology, University of Science and Technology Beijing, China)

P6-12 Ti coated on the surface of diamond by molten salt synthesis with microwave radiation

Wangxi Zhang*, Baoyan Liang, Yanzhi Wang and Yanxiang Feng (School School of Materials and Chemical Engineering, Zhongyuan University of Technology, China)

P6-13 Diffraction topography as an industrial tool for the characterisation of crystalline quality of diamond at BM05

T N. Tran Caliste, J. Hartwig, J. Morse, E. Ziegler and R. Barret - ESRF S. Connell (University of Johannesburg, South Africa)

P6-14 Surface Modification of Detonation Nanodiamond in Gas-Phase to Improve the Dispersibility in Liquid Media

Ming Liu*, Atsushi Kume, Masahiro Nishikawa and Hisayoshi Ito (Daicel Corporation, Central Research Center, Japan)

P6-15 Direct determination of barrier height of Au-ohmic electrode on hydrogen-terminated diamond (001) surface

Shozo KONO^{1*}, Tokuyuki TERAJI², Daisuke TAKEUCHI³, Masahiko OGURA³, Hideyuki KODAMA¹ and Atsuhito SAWABE¹ (¹Dept. Electr. Engi. Electro. Aoyama Gakuin Univ * Present Affil.: Research Organ. for Nano & Life Innovation, Waseda Univ, ²NIMS, ³AIST, Japan)

P6-16 Influence of NH₃/H₂ anneal on O-terminated single-crystal diamond in a system of metal organic chemical vapor deposition

Zeyang Ren, Jinfeng Zhang*, Jincheng Zhang* and Yue Hao (State Key Discipline Laboratory of Wide Band-Gap Semiconductor Technology, School of Microelectronics, Xidian University, China)

P6-17 Study on the property of diamond coated micro- or nanostructured diamond films

Ting Zhang¹, Ying Ren^{2*}, Yangyang He³, Guifeng Zhang⁴ and Wenjun Zou² (¹School of Chemistry and Chemical Engineering, Henan University of Technology, ²Faculty of Material Science and Engineering, Henan University of Technology, ³Institute of Nano-photonics, School of Physics and Materials Engineering, Dalian Nationalities University, ⁴State Laboratory of Materials Modification by Laser, Ion and Electron Beams, School of Materials Science and Engineering, Dalian University of Technology, China)

P6-18 Improved tribological performance of DLC coated refrigerator compressor reed valve by unbalanced magnetron sputtering

Liming Qin¹, Dan Qian¹, Tao Wang², Jiawei Xue¹, Zhilong He² and Zhongxiao Song^{1*} (¹State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an, Shaanxi 710049, ²School of Energy and Power Engineering, Xi'an Jiaotong University, China)

P6-19 Electrical properties and microstructure of ion implanted nanocrystalline diamond and graphene nanoribbon hybrid films

Xiaojun Hu*, Shaohua Lu, Chengke Chen, Xiao Li, Yingshuang Mei, Zongchun Yang and Dong Fan (College of Materials Science and Engineering, Zhejiang University of Technology, China)

P6-20 Phonon confinement effects in Raman spectra of ion and neutron irradiated diamonds

KHOMICH Alexander^{1,2,3*}, KHMELNITSKY Roman³, KHOMICH Andrey^{1,4}, RALCHENKO Victor^{5,2,4}, VLASOV Igor⁴, POKLONSKI Nikolay⁶, POKLONSKAYA Olga⁶, KARKIN Eugeny⁷, SKURATOV Vladimir⁸, SYRYKH Gennadiy⁹, HU Xiaojun¹⁰ (¹Institute of Radio Engineering and Electronics RAS, Russia. ²National Research Nuclear University, Russia. ³Physical Institute RAS, Russia. ⁴General Physics Institute RAS, Russia. ⁵Harbin Institute of Technology, China. ⁶Belarusian State University, Belarus. ⁷Institute of Metal Physics UB RAS, Russia. ⁸Joint Institute for Nuclear Research, Russia. ⁹RRC "Kurchatov Institute", Russia. ¹⁰Zhejiang University of Technology, China)

P6-21 Temperature-Dependent Fluorescence in nanodiamonds

Li-Xia Su¹, Qing Lou¹ and Chong-Xin Shan^{1,2*} (¹School of Physical Engineering, Zhengzhou University, China. ²State Key Laboratory of Luminescence and Applications, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, China)

7. Diamond Application

P7-1 The improvement on the electron field emission properties of nanocrystalline diamond films by plasma post-treatment process for the application as cathodes in microplasma devices

Sheng-Chang Lin¹, Chien-Jui Yeh¹, Divinah Manoharan², Keh-Chyang Leou¹ and I-Nan Lin^{2*} (¹Department of Engineering and System Science, National Tsing Hua University, ²Department of Physics, Tamkang University, Taiwan)

P7-2 Diamond coatings on cemented carbide substrates with SiC as an interlayer: preparation and erosion resistance tests

G. Wang¹, Y. Li^{1,2}, X. Lu¹, M. Ding¹, W. Tang^{1*} and B. Zhang³ (¹Institute for Advanced Materials and Technology, University of Science and Technology Beijing, ²Now with Institute of Laser Technology, Academy of Sciences of Hebei Province, ³Baihui Xingye (Beijing) Technology Co. China)

- P7-3 An all-diamond ISFET for water monitoring in extreme environments**
William Parfitt, Ralph Jennings-Moors, Alex Pakpour-Tabrizi, Joseph Welch and Richard B. Jackman (London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, UK)
- P7-4 Fabrication of nanodiamond composite material for heavy metal electrochemical detection application**
C. R. Lin^{1,2*}, M. K. BenDao^{1,2} and C.W.Liou^{1,2} (¹National Taipei University of Technology, Department of Mechanical Engineering, ²National Taipei University of Technology, Institute of Manufacturing Technology, Taiwan)
- P7-5 Fabrication and characterization of microlens with high fill factor on diamond**
Tianfei Zhu, Jiao Fu, Fei Wang, Wei Wang, Hong-Xing Wang* and Xun Hou (Institute of wide band gap semiconductors, Xi'an Jiaotong University, China)
- P7-6 All Single Crystal Diamond Micro-switch for Micro-electromechanical Systems**
Jiao Fu, Fei Wang, Tianfei Zhu, Fengnan Li, Zhangcheng Liu, Wei Wang, Hong-Xing Wang* and Xun Hou (Xi'an Jiaotong University, China)
- P7-7 Adsorption and Deposition of Micro Diamond Particles in Preparing Diamond Magnetic Abrasives by Electroless Composite Plating**
Yang Bin¹, Lu Wenzhuang^{1,2*}, Feng Wei¹, Yang Xu¹ and Zuo Dunwen¹ (¹College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, ²Jiangsu Key Laboratory of Precision and Micro-Manufacturing Technology, China)
- P7-8 Hybrid diamond/graphite films as anodic stripping voltammetry electrodes for trace Ag⁺ and Cu²⁺ detection**
Nan Huang¹, Yuning Guo^{1,2}, Bing Yang¹, Chun Wang¹, Hao Zhuang², Qingquan Tian¹, Zhaofeng Zhai¹, Lusheng Liua and Xin Jiang^{*1,2} (¹Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China. ²Institute of Materials Engineering, University of Siegen, Germany)
- P7-9 Mass fabrication and application of CVD diamond coated mechanical seals**
Xuelin Lei^{1*}, Yun He¹ and Fanghong Sun² (¹School of Mechanical Engineering, East China University of Science and Technology, ²School of Mechanical Engineering, Shanghai Jiao Tong University, China)
- P7-10 Towards controlled positioning of nanodiamond arrays for photonic applications**
Ashleigh H. Heffernan*, Andrew D. Greentree and Brant C. Gibson (Centre of Excellence for Nanoscale BioPhotonics, School of Science, RMIT University, Australia)
- P7-11 CVD diamond deposition on carbon fibre composites for use in electrochemistry as electrodes**
Roland Haubner* and Mario Lessiak¹ (Technische Universität Wien, Institute of Chemical Technologies and Analytics, Austria)

8. Diamond Device

- P8-1 Three-dimensional metal electrodes in CVD diamond UV detector**
Guoqing Shao, Renan Bu, Zhangcheng Liu, Fengnan Li, Wei Wang and Hong-Xing Wang* (Institute of Wide Bandgap Semiconductors, Xi'an Jiaotong University)
- P8-2 Comparison of fast pulsed X-ray detectors based on polycrystalline and single crystal diamond**

L.Y.LIU^{1,2*}, X.P.OUYANG^{1,2*}, J.F.ZHANG^{1,2}, L.CHEN² and C.L.SU² (¹Xi'an Jiaotong University, ²Northwest Institute of Nuclear Technology, China)

P8-3 Carbon Nanotubes Electrodes Fabrication on Diamond for UV Detection

Zhangcheng Liu, Fengnan Li, Chao Hu, Fei Wang, Wei Wang, Jingwen Zhang and Hongxing Wang* (Institute of Wide Bandgap Semiconductors, Xi'an Jiaotong University, China)

P8-4 Effect of TiO₂ Film Thickness on The Properties of TiO₂/Diamond UV Photodetector

Zhangcheng Liu, Shuoye Li, Fengnan Li, Guoqing Shao, Wei Wang, Jingwen Zhang and Hongxing Wang* (Institute of Wide Bandgap Semiconductors, Xi'an Jiaotong University, China)

P8-5 Diamond Schottky Barrier Diode with TiO₂ Field Plate Structure

Dan Zhao, Chao Hu, Zhangcheng Liu, Wei Wang and Hongxing Wang* (Institute of Wide Bandgap Semiconductors, Xi'an Jiao Tong University, China)

P8-6 Vertical Diamond M-I-P Schottky Barrier Diode with Fluorine-Termination

Chao Hu, Jingwen Zhang, Zhangcheng Liu, Fengnan Li, Wei Wang, Shuoye Li, Fang Lin and Hong-xing Wang* (Xi'an Jiaotong University, China)

P8-7 Single crystal diamond waveguide based directional coupler fabricated by quasi-isotropic plasma etching

Yunxiao Li, Yanfeng Zhang*, Yujie Chen, Chunchuan Yang, Lin Liu and Siyuan Yu (State Key Laboratory of Optoelectronic Materials and Technologies, School of Electronics and Information Technology, School of Physics and Engineering, Sun Yat-sen University, China)

P8-8 Diamond as a Hole Source for ZnO Lasers

C. X. Shan^{1,2*}, Y. J. Lu¹ and D. Z. Shen² (¹School of Physics and Engineering, Zhengzhou University, China. ²State Key Laboratory of Luminescence and Applications, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, China)

P8-9 Fabrication and characterization of 3D diamond UV detector

Kang LIU, Bing DAI, Jiecai HAN, Jiwen ZHAO, Guoyang SHU, Ge GAO and Jiaqi ZHU* (Center for Composite Materials and Structures, Harbin Institute of Technology, China)

9. Carbon Nanotube

P9-1 Carbon Nanotube Field Effect Transistors with Superior Extrinsic Radio Frequency Performance

Yang Yang^{1,*}, Shuai Huo¹, Xinxin Yu¹, Zhengyi Cao¹, Yun Wu¹, Jianjun Zhou¹, Dongguo Zhang¹, Zhonghui Li¹, Haiyan Lu¹, Zhensheng Wang¹, Yuechan Kong¹, Gehan Amaratunga², Tangsheng Chen¹ (¹Science and Technology on Monolithic Integrated Circuits and Modules Laboratory, Nanjing Electronic Devices Institute, China, ²Department of Engineering, University of Cambridge, UK)

P9-2 Unsaturated-sulfur-rich MoS₂ nanosheets decorating onto SWNT Film for flexible electrocatalysis

Daobin Liu, Changda Wang, Weiyu Xu, Qi Fang and Li Song* (National Synchrotron Radiation Laboratory, CAS Center for Excellence in Nanoscience, University of Science and Technology of China, China)

- P9-3 Enhanced Performance of Quantum-dot Light-emitting Diodes by Incorporating Single-walled Carbon Nanotubes**
J.H.Yang^{1,2}, J.T.Lee^{1,2}, J.Y.Lee¹, S.J.Ahn² and W.K.Yi^{1*} (¹Department of Chemistry, Hanyang University, ²Center of Advanced Instrumentation, Korea Research Institute of Standards and Science, Korea)
- P9-4 Efficient adsorption of organic dyes on a flexible single-wall carbon nanotube film**
J.Luan, P.X.Hou and C.Liu* (Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China)
- P9-5 Synthesis of Metallic Single-Wall Carbon Nanotubes and Their Applications**
Peng-Xiang Hou*, Jin-Cheng Li, Man Song and Chang Liu (Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China)
- P9-6 Two-dimensional carbon nanotube structures for wide-diameter and broadband optical beam collimation**
José V. Anguita*, James Clark and S. Ravi P. Silva (Advanced Technology Institute (ATI), University of Surrey, UK)
- P9-7 Enhancing Electron Field Emission Properties of Carbon Nanowalls on Glass Substrates by Post-Annealing Process**
Kun-Yi Lee¹, Chun-Han Lai¹ and Wen-Ching Shih^{2*} (¹Department of Electrical Engineering, China University of Science and Technology, ²Graduate Institute of Electrical Engineering, Tatung University, Taiwan)
- P9-8 Few Layer Graphene and Multiwall Carbon Nanotubes for Low-Dimensional High-Density Magnetic Recording Media: A comparative study**
Sekhar C.Ray^{1*} and W.F.Pong² (¹Department of Physics, College of Science, Engineering and Technology, University of South Africa, Private Bag X6, Science Campus, South Africa. ²Department of Physics, Tamkang University, Taiwan)
- P9-9 Poly[(2-methoxy,5-octoxy)1,4-phenylenevinylene] with Functionalized single-walled Carbon Nanotubes for solar cell**
Wen Ding, Yanxin Xing, Linzhang Zhao, Zhenhuan Tian, Minyan Zhang, Weihang Zhang and Feng Yun* (Key Laboratory for Physical Electronics and Devices of the Ministry of Education & Shaanxi Key Lab of Information Photonic Technique, School of Electronic & Information Engineering, Xi'an Jiaotong University, China)
- P9-10 Pulsed field emission of CNT cathodes**
Xianqi Wei¹, Xiaoli Wang^{1,2}, Weihua Liu², Guiming Cao² and Xin Li² (¹School of Science, Xi'an Jiaotong University, ²Department of Microelectronics, School of Electronics and Information Engineering, Xi'an Jiaotong University, China)
- P9-11 Printed Hysteresis-Free N-type Carbon Nanotube Transistors Using Polymer-sorted Semiconducting Single-walled Carbon Nanotube Inks**
Wenya Xu, Jianwen Zhao* and Zheng Cui* (Printable Electronics Research Center (PERC), Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, China)
- P9-12 Selective Dispersion of Semiconducting Carbon Nanotubes by Isoindigo-Based Copolymer for Printed Thin-film Transistors and Gas Sensors**
Chunshan Zhou, Jianwen Zhao* and Zheng Cui* (Printable Electronics Research Center (PERC), Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, China)
- P9-13 Theoretical insight of Pt₂-nNin (n=0~2) clusters on metallic (9, 0) single-walled carbon nanotube support**

Shiping Huang*, Ning Wang and Fangfang Zhao (State Key Laboratory of Organic-Inorganic Composites, Beijing University of Chemical Technology, China)

P9-14 Preparation and Characterization of Carbon Nanotube-Gemcitabine-Lentian Composites

Zhang Ping¹, Yi Wenhui^{1*}, Hou Jin², Yoo Sweejiang¹, Jinhai Si¹ and Hou Xun¹ (¹Key Laboratory for Information Photonic Technology of ShaanXi Province, School of Information and Electronics Engineering & Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, ²Department of Pharmacology, School of Basic Medical Sciences, Xi'an Medical College, China)

P9-15 Construction of an anti-cancer targeting nano-vehicle with carbon nanotubes and tamoxifen

Yi Wenhui^{1*}, Hou jin², Yoo Sweejiang¹, Chen Weiping¹, Li Yingchun¹, Jinhai Si¹ and Hou Xun¹ (¹Key Laboratory for Information Photonic Technology of ShaanXi Province, School of Information and Electronics Engineering & Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, ²Department of Pharmacology, School of Basic Medical Sciences, Xi'an Medical College, China)

P9-16 Effect of high-pressure wet-jet milling process on the electrical percolation of MWCNT/PTFE composite film

Anas Almowarai and Yoshiyuki Show (Department of Science and Technology, School of Science and Technology, Tokai University, Japan)

P9-17 Fabrication of electrical double-layer capacitor (EDLC) using single wall carbon nanotube

Yugo TOCHIYA and Yoshiyuki SHOW* (Tokai University, Department of Electrical and Electronic System Engineering, School of Engineering, Japan)

P9-18 Pt/CNT catalyst formed by in-liquid plasma method for fuel cells

Shuai YANG, Yutaro UENO and Yoshiyuki SHOW* (Tokai University, Department of Electrical and Electronic System Engineering, School of Engineering, Japan)

P9-19 The Photo-thermal effect and anti-tumor behavior of MWCNTs-DOX

Hou Jin¹, Yi Wenhui^{2*}, Yoo Sweejiang², He Xin², Li Yingchun², Chen Weiping², Zhang Haiyan², Jinhai Si² and Hou Xun² (¹Department of Pharmacology, School of Basic Medical Sciences, Xi'an Medical College, ²Key Laboratory for Information Photonic Technology of ShaanXi Province, School of Information and Electronics Engineering & Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, China)

P9-20 Revealing Island-Like Carboxyl Groups Distribution on Single Wall Carbon Nanotubes

Yi Wenhui*, Yoo Sweejiang, Liang Guo, Si Jinhai and Hou Xun (Key Laboratory for Physical Electronics and Devices of the Ministry of Education & Key Laboratory for Information Photonic Technology of ShaanXi Province, School of Information and Electronics Engineering, Xi'an Jiaotong University, China)

P9-21 Photo Emission Characteristics of CNT Based Light Emitting Diode

Jinnah Barkatul Alim^{1*} and Tasauf Islam^{2*} (¹House- 53, Road- 27, Bloack- A, Banani, Dhaka- 1213, Bangladesh. ²U-40, Nurjahan Road, Mohammadpur, Dhaka. Bangladesh)

P9-22 The Self-Assembly of Carbon Nanotube/Polymer Composites Studied by Hybrid Particle-Filed MD-SCF Simulation Method

Ying Zhao*, DaPeng Dong, YangYang He, NaiSen Yu and Bin Dong (Institute of Nano-Photonics, School of Physics and Materials Engineering, Dalian Nationalities University, China)

- P9-23 Nitrogen-doped aligned carbon nanotube/graphene sandwiches for high-performance lithium-sulfur batteries**
Cheng Tang, Qiang Zhang*, Meng-Qiang Zhao, Jia-Qi Huang, Xin-Bing Cheng, Gui-Li Tian, Hong-Jie Peng and Fei Wei* (Department of Chemical Engineering, Tsinghua University, China)
- P9-24 Effects of Semi-conductive Layer with Carbon Nanotube on Charge Injection in Epoxy Resin**
H.Li*, C.Wang, H.Feng, P.Liu and Z.R.Peng (State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China)
- P9-25 Double-Wall Carbon Nanotube Films for Capacitive Deionization**
Guo-Xian Li, Peng-Xiang Hou and Chang Liu* (Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China)

10.Graphene Device and Application

- P10-1 Study on Individual ZnO Nanowire UV Detector Coated by Graphene**
Wenting Zhang, Xiaolong Zhao, Xiaomeng Qi, Wenbo Peng and Yongning He* (School of Electronic and Information Engineering, Xi'an Jiaotong University, China)
- P10-2 Industrial Scale Few Layer Graphene from Food Waste and its Application as Conductive Ink (EU project: PLASCARB)**
K. Huang¹, K. Kampioti¹, F. Hof¹, C. Jaillet-Bartholome,¹ A. Derre¹, P. Poulin¹, C. Paukner² and A. Penicaud¹ (¹Centre de Recherche Paul Pascal-CNRS, University of Bordeaux, France. ²FGV Cambridge Nanosystems, Cambridge, United Kingdom)
- P10-3 Crumpled graphene balls for efficient lubrication**
Xuan Dou, Andrew Robert Koltonow and Jiaying Huang* (Department of Materials Science and Engineering Northwestern University)
- P10-4 Growing MoO₂ on graphene sheets for lithium-ion batteries**
Yu Zhou, Hui Xie, Yuan Sang and Li Song* (National Synchrotron Radiation Laboratory, CAS Center for Excellence in Nanoscience, University of Science and Technology of China, China)
- P10-5 Humidity Sensor Based on Metal Organic Frameworks/ Graphene Oxide thin films**
W. Zhang¹*, S.Y. Meng¹, X.L. Zhao² and Y.N. He²* (¹School of Science, Xi'an Jiaotong University, ²School of Electronic and Information Engineering Xi'an Jiaotong University, China)
- P10-6 Dual-Gate MOSFET with CVD Bilayer Graphene Channel**
Dongming Wu*, Gideon Chen and Yonhua Tzeng** (Institute of Microelectronics, Department of Electrical Engineering, National Cheng Kung University, Taiwan)
- P10-7 Graphene encapsulated and SiC reinforced silicon nanowires as an anode material for lithium ion batteries**
Yang Yang¹*, Jian-Guo Ren², Xianfeng Chen², Yongbing Tang¹ and Wenjun Zhang²* (¹Functional Thin Films Research Center, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, ²Department of Physics and Materials Science, Centre Of Super-Diamond and Advanced Films (COSDAF), City University of Hong Kong, China)
- P10-8 Nitrogen and Phosphorus Dual-doped Graphene-Based Porous Carbon for High-Performance Lithium-Sulfur Batteries**
Chen-Yu Chen¹, Cheng Tang¹, Hao-Fan Wang¹ and Qiang Zhang¹* (¹Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, China)

- P10-9** **Suppression of multipactor in microwave devices with graphene-coated copper**
H.Wang¹, R. Wang^{1,2}, S. Lin¹, M. Cao¹ and Y.D.Li^{1,*} (¹Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, ²National Key Laboratory of Science and Technology on Space Microwave, China Academy of Space Technology, China)
- P10-10** **In situ hybridization of perovskite oxide and graphene framework as superb electrocatalysts for oxygen evolution reaction**
Bo-Quan Li, Tang Cheng, Zhang Qiang* (Department of Chemical Engineering, Tsinghua University, China)
- P10-11** **Spatially-confined nanosized NiFe LDHs in graphene frameworks for superior OER catalysis**
Cheng Tang, Han-Sen Wang, Hao-Fan Wang, Qiang Zhang*, Gui-Li Tian, Jing-Qi Nie and Fei Wei (Department of Chemical Engineering, Tsinghua University, China)
- P10-12** **High Reversible Capacity of Reduced Graphene Oxide/Si Nanocomposites as Anode Material for Lithium-ion Batteries**
Ran-Ran Yao, Dong-Lin Zhao*, Cheng Li and Fei-Fei Sun (State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, China)
- P10-13** **Gas Sensing Behaviors of Graphene-Metal Contact**
Quanfu Li, Weihua Liu*, Guiming Cao, Xin Li and Xiaoli Wang (Department of Microelectronics, School of Electronics and Information Engineering, Xi'an Jiaotong University, China)
- P10-14** **Co₃O₄ single-particle-chain nanofibers via electrospinning and their composite with Graphene oxide sheets towards high-performance supercapacitors**
Yunshi Liu and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)
- P10-15** **Sensitivity Investigation for the Dependence of monolayer and stacking Graphene NH₃ Gas Sensor**
Hui Song¹, Xin Li^{1*}, Ping Cui¹, Shixi Guo¹, Weihua liu¹ and Xiaoli Wang² (¹School of Electronics and Information Engineering, Xi'an Jiaotong University, ² School of Science, Xi'an Jiaotong University, China)
- P10-16** **Design of Graphene Heat Spreader Structure and Morphology for Thermal Management**
Ming Fang¹, Wen Wang¹, Xin Li^{1*}, Weihua Liu¹ and Xiaoli Wang² (¹School of Electronics and Information Engineering, Xi'an Jiaotong University, ²School of Science, Xi'an Jiaotong University, China)
- P10-17** **Flower-like CoNi₂S₄ Grown on Graphene Decorated Nickel Foam as High Performance Supercapacitor**
Lemu Girma Beka¹, Xin Li^{1*}, Xianjun Xia² and Weihua Liu¹ (¹School of Electronics and Information Engineering, Xi'an Jiaotong University, ²School of Science, Xi'an Jiaotong University, China)
- P10-18** **Enhanced Reversible Capacity of Hollow Graphene Spheres/SnO₂ Nanocomposites as Anode Material for Lithium-ion Batteries**
Ran-Ran Yao, Dong-Lin Zhao*, Zhao-Hua Mo and Ji-Xiang Chen (State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, China)
- P10-19** **Room-temperature highly sensitive graphene-graphene oxide-graphene lateral heterogeneous structure gas sensor for VOCs detection**

Shixi Guo, Xin Li, Ping Cui, Weihua Liu and Xiaoli Wang (¹School of Electronics and Information Engineering, Xi'an Jiaotong University, ² School of Science, Xi'an Jiaotong University, China)

P10-20 In situ growth of NiCo₂S₄ nanostructures on spiral-type graphene nickel wire for flexible supercapacitor device

Xianjun Xia, Lemu Girma Beka, Xin Li*, Weihua Liu and Xiaoli Wang (¹School of Science, Xi'an Jiaotong University, ²School of Electronics and Information Engineering, Xi'an Jiaotong University, China)

P10-21 Laser micronanoprocessing of graphene oxide and its devices fabrication

Li Guo^{1,2*}, Peilong Li¹ and Jiangfeng Song¹ (¹Institute of Materials, China Academy of Engineering Physics, ²Changchun University Of Technology, China)

P10-22 One-step synthesis of graphene quantum dots from defective CVD graphene and their application in IGZO UV thin film phototransistor

Huihui Zhu^{1,2}, Ao Liu³, Fukai Shan^{3*}, Wenrong Yang⁴, Wenling Zhang², Da Li² and Jingquan Liu^{1,2*} (¹Shandong Provincial Key Laboratory of Detection Technology for Tumor Markers, College of Chemistry and Chemical Engineering, Linyi University, China. ²College of Chemical Science and Engineering, Lab of New Fiber Materials and Modern Textile, Growing Base for State Key Laboratory, Qingdao University, China. ³College of Physics Science, Lab of New Fiber Materials and Modern Textile, Growing Base for State Key Laboratory, Qingdao University, China. ⁴School of Life and Environmental Sciences, Deakin University, Australia.)

P10-23 One-pot Synthesis of Graphene-CdTe Quantum Dots Composites for Ion Sensor

Yanping Miao and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)

11. Carbon Device and Application

P11-1 Nanocarbon Coated Copper Surface Enhanced Raman Scattering Substrates As Molecular Sensors

Yuchun Chen, Chenglung Chung and Yonhua Tzeng* (Institute of Microelectronics, Department of Electrical Engineering, National Cheng Kung University, Taiwan)

P11-2 Advanced lithium-sulfur batteries with high energy density and long lifespan: The contribution of nanocarbon

Qiang Zhang, Jia-Qi Huang, Hong-Jie Peng and Xin-Bing Cheng (Department of Chemical Engineering, Tsinghua University, China)

P11-3 Synthesis of mesoporous anatase TiO₂ hollow spheres composed with graphitic carbon for enhanced photocatalysis and lithium ion battery applications

Changchao Jia and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)

P11-4 Nitrogen-doped nano-sheet carbon for supercapacitor applications

Jianbo Zhu^{1,2}, Youlong Xu^{1,2*} and Yuan Zhang² (¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, ²Shaanxi Engineering Research Center of Advanced Energy Materials & Devices, Xi'an Jiaotong University, China)

P11-5 Achieving high tribological performance of Cr/GLC films in artificial seawater by structural design

Li Lei, Li Xiaowei, Guo Peng, Ke Peiling and Wang Aiyong* (Key Laboratory of Marine Materials and Related Technologies, Key Laboratory of Marine Materials and

Protective Technologies of Zhejiang Province, Ningbo Institute of Materials
Technology and Engineering, Chinese Academy of Sciences, China)

- P11-6 The Tribological properties of Diamond-like Carbon Films for wear protection in artificial hip joints**
Ying Ren^{1*}, Friederike Deuerler² and Volker Buck³ (¹Faculty of Material Science and Engineering, Henan University of Technology, China. ²Faculty D-Department of Mechanical Engineering, University of Wuppertal, Germany. ³Thin Film Technology Group, Faculty of Physics, University of Duisburg-Essen and CENIDE, Germany)
- P11-7 Producing Industrial Coolant by Hydroxylation of diesel soot particulates: A simple and facile source of carbon nanomaterial**
SHYAM Kumar Choudhary (Research and Development, India)
- P11-8 One-step electropolymerization of PANI on stainless steel as integrated cathodes for high-capacity lithium-ion batteries**
Xianfeng Du^{1,2*}, Sen Liang¹, Ning Wu¹ and Youlong Xu^{1,2} (¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, ²Shaanxi Engineering Research Center of Advanced Energy Materials & Devices, Xi'an Jiaotong University, China)
- P11-9 Onion-like carbon hydrogel nanocomposite as electrode material for ultrafast supercapacitor**
Changda Wang, Daobin Liu, Yasir A. Haleem and Li Song* (National Synchrotron Radiation Laboratory, CAS Center for Excellence in Nanoscience, University of Science and Technology of China, China)
- P11-10 Nanocarbon catalysts for one-step oxidative-adsorptive desulfurization**
Y.Q. Zhang and R. Wang* (School of Environmental Science and Engineering, Shandong University, China)

12.GaN / Diamond and other Carbon Materials

- P12-1 Research of ZnO UV detector with a ZnO-TFT switch control**
Zijian Pan, Yongning He*, Xiaolong Zhao and Wenbo Peng (School of Electronic and Information Engineering, Xi'an Jiaotong University, China)
- P12-2 Study of ZnO Schottky Alpha Particle Detector Based on TRIM Simulation**
Zhiyong Huang, Leidang Zhou, Xiaolong Zhao, Songchang Zhang and Yongning He* (Xi'an Jiaotong University, China)
- P12-3 Structure characterization and electrical properties study of TiN film produced by RF magnetron sputtering**
Dan Wang, Yongning He*, Xiaomeng Qi and Xiaolong Zhao (School of Electronic and Information Engineering, Xi'an Jiaotong University, China)
- P12-4 Characterization of Neutron-irradiation Effects on ZnO X-ray Sensor**
Xiaolong Zhao¹, Yongning He*, Liang Chen², Zhongbing Zhang², Wenbo Peng¹ and Xiaoping Ouyang² (¹School of Electronic and Information Engineering, Xi'an Jiaotong University, ²Radiation Detection Research Center, Northwest Institute of Nuclear Technology, China)
- P12-5 Metastable metallic and semiconducting germanium allotropes from first-principles studies**

Kun Luo, Jinhui Zhai, Zhisheng Zhao, Yu Shu, Dongli Yu, Julong He* (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)

- P12-6 First-principles study of two-dimensional-conductive superhard BC_xN phases**
Yufei Gao¹, Yingju Wu¹, Quan Huang², Mengdong Ma¹, Kun Luo¹, Xiaohong Yuan¹, Yilong Pan¹, Zhisheng Zhao¹, Julong He¹ and Dongli Yu^{1*} (¹State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, ²Center for High Pressure Science & Technology Advanced Research, China)
- P12-7 Superhard orthorhombic phase of B₂CO compound**
C. Liu, Z.S. Zhao, K. Luo, M. Hu, M.D. Ma and J.L. He* (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P12-8 First-principle studies of structural properties of layered CNH molecules**
Xiaohong Yuan, Yuanchun Zhao and Dongli Yu* (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)
- P12-9 Effect of UV/Ozone and Oxygen Plasma Treatment on AlGa_xN surface of AlGa_xN/GaN Ion-Sensitive Field-Effect Transistor**
Lei Wang, Yutaro Maeda, Yuyu Bu and Jin-Ping Ao* (Institute of Technology and Science, Tokushima University, Japan)
- P12-10 Fabrication of Large-scaled Multilayer C₃N₄ Ultrathin Flake by Mechanical Grind Method with Enhanced Photocatalysis Performance**
Y. Y. Bu¹, W. B. Li² and J. -P. Ao*¹ (¹Institute of Technology and Science, Tokushima University, Japan. ²School of Environment and Safety Engineering, Qingdao University of Science and Technology, China)
- P12-11 Photocatalytic Property of TiO₂/nC/rGO Composites Synthesized by Template Method**
Yaning Feng^{1*}, Dan Luo¹, Juanjuan Wang¹, Lei Miao² and Bailing Jiang¹ (¹School of Materials Science and Engineering, Xi'an University of Technology, ²Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences, China)
- P12-12 Synthesis of MFe₂O₄ (M = Co, Ni, Mn) nanotubes with tunable hollow structures by single-nozzle electrospinning**
Debao Liu and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)
- P12-13 Fabrication of multifunctional glass fiber/polymer composites based on ALD**
Chao Sun¹, Jie Zhang^{1*}, Xue-feng Gu¹, Ming Liu¹, Wei Ren^{1*} and Zuo-Guang Ye^{1,2*} (¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, China. ²Department of Chemistry and 4D LABS, Simon Fraser University, Canada)
- P12-14 Conductive Nanostructured Scaffolds Render Low Local Current Density to Inhibit Lithium Dendrite Growth**
Rui Zhang, Xin-Bing Cheng, Chen-Zi Zhao, Hong-Jie Peng, Jia-Le Shi, Jia-Qi Huang, Jinfu Wang, Fei Wei and Qiang Zhang* (Department of Chemical Engineering, Tsinghua University, China)
- P12-15 Nucleation of epitaxial graphene on GaN by PECVD**
Zongyao Li^{1,2}, Yu Xu^{3,4}, Bing Cao^{1,2*}, Lin Qi^{1,2}, En Zhao^{1,2}, Song Yang^{1,2}, Chinhua Wang^{1,2}, Jianfeng Wang^{3,4} and Ke Xu^{3,4} (¹College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, ²Key Lab of Advanced Optical Manufacturing Technologies of Jiangsu Province & Key Lab of Modern Optical Technologies of Education Ministry of China, Soochow University, ³Suzhou Institute of Nano-Tech and Nano-Bionics

(SINANO), Chinese Academy of Sciences (CAS), ⁴Suzhou Nanowin Sci & Technol Co Ltd, China)

P12-16 Adsorption of 2D Materials on Sapphire: Effect of Rotational Configuration and Surface Termination

Kester W. J. Wong¹ and Sang Kyu Kwak^{1,2*} (¹Center for Multidimensional Carbon Materials (CMCM), Institute for Basic Science (IBS), ²School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), Korea)

P12-17 Graphitic Carbon Nitride Based Heterostructures with Visible Light Photocatalytic Activity

Yumeng Liu and Ping Yang* (School of Material Science and Engineering, University of Jinan, China)

P12-18 Strength characters of two dimensional C-BN hybrid nanomaterials with grain boundary

Yinfeng Li* and Anran Wei (Department of Engineering Mechanics, School of Naval Architecture, Ocean and Civil Engineering (State Key Laboratory of Ocean Engineering and Collaborative Innovation Center for Advanced Ship and Deep-Sea Exploration, Shanghai Jiao Tong University, China)

P12-19 Effect of composition and processing on Ti₂SC powder by microwave hybrid heating
Chun Long Guan* (School of Material Science and Engineering, Henan University of Technology, China)

P12-20 Hot Carrier Effect on Efficiency Droop in InGaN/GaN Light-Emitting Diodes

Yang Huang^{1,2,3}, Zhiqiang Liu^{1,2,3*}, Xiaoyan Yi^{1,2,3*}, Yao Guo^{1,2,3}, Shaoteng Wu^{1,2,3}, Guodong Yuan^{1,2,3}, Junxi Wang^{1,2,3}, Guohong Wang^{1,2,3}, Jinmin Li^{1,2,3} (¹R&D Center for Semiconductor Lighting, Chinese Academy of Sciences, ²State Key Laboratory of Solid State Lighting, ³Beijing Engineering Research Center for the 3rd Generation Semiconductor Materials and Application, China)

P12-21 Growth of GaN Crystals by Na-Sn Flux Method

Hangfei Hao, Zhenrong Li*, Xi Wu, Shiji Fan and ZhuoXu (Electronic Materials Research Laboratory and Key Laboratory of Education Ministry and International Center for Dielectric Research, Xi'an Jiaotong University, China)

P12-22 Effects of growing temperature on GaN single crystals growth by Na flux method

Xi Wu, Hangfei Hao, Zhenrong Li*, Shi Ji Fan and Zhuo Xu (Electronic Materials Research Laboratory and Key Laboratory of Education Ministry and International Center for Dielectric Research, Xi'an Jiaotong University, China)

P12-23 Effect of nitrogen ratio on microstructure and mechanical properties of CN coated by high power impulse magnetron sputtering

Wei-Chih Chen^{1,2}, Fu-Chi Yang¹, Chi-Lung Chang^{3*}, F. S. Shieu¹, Da-Yung Wang^{2,3} (¹Department of Materials Science and Engineering, National Chung Hsing University, ²Surface Engineering Research Center, MingDao University, ³Department of Materials and Energy Engineering, MingDao University, Taiwan)

P12-24 Effect of OES feedback control on the properties of nc-TiC/a-C:H coated by high power impulse magnetron sputtering

Wei-Chih Chen^{1,2}, Fu-Chi Yang¹, Chi-Lung Chang^{3*}, F. S. Shieu¹ and Da-Yung Wang^{2,3} (¹Department of Materials Science and Engineering, National Chung Hsing University, ²Surface Engineering Research Center, MingDao University, ³Department of Materials and Energy Engineering, MingDao University, Taiwan)

P12-25 Catalyst-free direct growth of graphene on sapphire for GaN epitaxy

Yu Xu^{1,2}, Zongyao Li^{3,4}, Lin Qi^{3,4}, En Zhao^{3,4}, Bing Cao^{3,4}, De Min Cai², Yuming Zhang^{1,2}, Guoqiang Ren^{1,2}, Jicai Zhang^{1,2}, Jianfeng Wang^{1,2} and Ke Xu^{1,2*} (¹Suzhou

Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences (CAS), ²Suzhou Nanowin Sci & Technol Co Ltd, ³College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, ⁴Key Lab of Advanced Optical Manufacturing Technologies of Jiangsu Province & Key Lab of Modern Optical Technologies of Education Ministry of China, Soochow University, China)

P12-26 Surface transfer doping of cubic boron nitride films by MoO₃ and tetrafluoro-tetracyanoquinodimethane (F₄-TCNQ)

B.He, T.-W.Ng, M.-F.Lo, C.-S.Lee and W.J.Zhang* (Center of Super-Diamond and Advanced Films (COSDAF), and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong)

P12-27 Electrons transfer properties in lattice disorder structure based on correlated electronic ferromagnetic system

Ren Ren^{1*}, Ying-Jing Ren², Xuan Li¹, Lin Liu¹ and Rui-Qi Lu¹ (¹Department of optics Information, Xi'an Jiao Tong University, ²The Internet of Things, Beijing University of Posts and Telecommunications, including country, China)

P12-28 Experimental Evaluation on Rheological Characteristics of Nano-Montmorillonite Modified Asphalt Binder

CHEN Zheng^{1,2*} and HAO Peiwen³ (¹College of Materials&Mineral Resources, Xi'an University of Architecture & Technology, ²Postdoctoral Mobile Station of Traffic and Transportation Engineering, Chang'an University, ³College of Continuing Education, Chang'an University, China)

P12-29 A Charged Particle Detector based on 4H Silicon Carbide with superior charge collection efficiency

L.Y.LIU^{1,2*}, J.L.LIU², X.OUYANG³, Z.B.ZHANG², L.CHEN², J.L.RUAN², G.CHEN⁴, A.LIU⁴, S.BAI⁴, X.C.RUAN³ and X.P.OUYANG^{1,2*} (¹Xi'an Jiaotong University, ²Northwest Institute of Nuclear Technology, ³China Institute of Atomic Energy, ⁴Nanjing Electronic Devices Institute, China)

P12-30 One-step synthetic route for B₄C nanoparticle coated with carbon

Mengdong Ma, Yufei Gao, Meng Hu, Yingju Wu, Zihe Li, Zhisheng Zhao and Julong He* (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)

P12-31 Metallic and semiconductive BN allotropes from compressed BN nanotubes

Mei Xiong, Yilong Pan, Yongjun Tian, Dongli Yu, Julong He and Zhisheng Zhao (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China)