Poster Program

[P.001]

Dependence of microstructure, mechanical and tribological characteristics of MCN (M = Zr、Ta、Nb、Cr、Hf) coatings on the M choice: experiment and first-principles calculation study

Mengjuan Yin*, Wenping Liang, Qiang Miao, Haiyang Yu, *Nanjing University of Aeronautics and Astronautics, China*

[P.002]

Anomalous Hall effect and topological Hall effect in the noncollinear antiferromagnet V0.3NbS2

Huan Wang, Tian-Long Xia*, *Renmin University of China, China*

[P.003]

Phase transition analysis of VO_2 film in mid-infrared optical modulation property

Fei Xia*, Gang Gao, *Harbin Institute of Technology, China*

[P.004]

Preparation of composite PEO coating on aluminum alloy by in situ doping of nano-SiO_2 particles

Zhu Liye*[1], Liu Haitao[1], Zhang Wei[2], Chen Qianqian[3], Wang Fuhui[3], [1]*Chifeng University, China,*[2]*Institute of Metal Research Chinese Academy of Sciences, China,*[3]*Northeastern University, China*

[P.005]

Single atom catalysts in the environmental catalysis: From synthesis to application

Rongkui Su*[1], Zhixiang Wang[2], Hanqing Wang[1], Xin Ge[1], Yiting Luo[3], xiancheng Ma[1], [1]*Central South University of Forestry and Technology, China,*[2]*Central South University of Forestry and Technology, China,*[3]*Hunan First Normal University, China*

[P.006]

Modeling the thermal efficiency of a cryosurface for the deposition of inorganic substances at low temperatures

Olga Vorobyova*[1,2], Dmitriy Sokolov[1,2], [1]*Al-Farabi Kazakh National University, Kazakhstan,*[2]*Almaty Technological University, Kazakhstan*

[P.007]

Enhancing hydrogen peroxide production from seawater: a novel zirconium phosphate modification strategy for electrocatalysts

Qiuchen He*, Chenglin Zhang, Su Zhan, Feng Zhou, *Dalian Maritime University, China*

[P.008]

Optical tunability in strained α-MoO3: from isotropy to giant enhancement of anisotropy

Zhengfeng Guo*[1,2], Jingbo Sun[2], Ji Zhou[2], Honggang Gu[1], Shiyuan Liu[1], [1]*State Key Laboratory of Intelligent Manufacturing Equipment and Technology, Huazhong University of Science and Technology, China,*[2]*State Key Laboratory of New Ceramics and Fine Processing, School of Materials Science and Engineering, Tsinghua University, China*

[P.009]

Cd adsorption and detection by silver clusters supported on carbon dots surface: a computational study

Ruben Ambrusi[1], Yael Robein[2], Maria Estela Pronsato[1], Alfredo Juan*[1], Graciela Brizuela[1], [1]*National University of the South Institute of Physics of the South, Argentina,*[2]*South Institute of Chemistry, Argentina*

[P.010]

The effect of He-ion irradiation and annealing process to the PEC properties of CdTe/CdS/Pt photocathode

Meng Cao, Weifan He*, Zhenzhao Zhang, Zhen Xu, Qingzhi Hu, Jiahao Deng, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.011]

Design cation vacancy in RuO_2 as highly active electrocatalysts for acidic water oxidation

Yang Jiao*[1], Pan Hui[2], [1]*University of Macau, Macao,*[2]*University of Macau, Macao*

[P.012]

Boron nitride nanoplatelets induced significantly improved anti-corrosion behavior of plasma-sprayed Ni3Al composite coatings

Xiaolong Lu*[1,2], Fan Lv[2], Ying Song[3], Yongguang Wang[2], Yao Chen[2], [1]*Chinese Academy of Sciences Suzhou Institute of Nano-tech and Nano-Bionics, China,*[2]*Soochow University, China,*[3]*Changshu Institute of Technology, China*

[P.013]

Effect of surface morphology and microstructure on the corrosion behavior of Inconel 718 superalloy prepared by laser additive and subtractive hybrid manufacturing

Zifa Xu*, *Qilu University of Technology, China*

[P.014]

Benefits of Cryo-XPS for Battery Analysis

Jonathan Counsell*[1], Liam Soomary[1], Simon Hutton[1], Khadisha Zahra[1], Yandong Gong[2], Siqi Cai[2], Yuanyuan Cui[2], [1]*Kratos Analytical Ltd, UK,*[2]*Shimadzu China, China*

[P.015]

Advanced oxidation processes involving the discharge plasma, photocatalysis and electrocatalysis for the degradation of the octadecylamine and 4-dodecylmorpholine

Siyuan zhang*[1], Xuri Li[2], Liang Ma[1], Miao Lu[1], Haining Liu[1], Zhijian Wu[1], Xiushen Ye[1], [1]*Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, China,*[2]*Qinghai University, China*

[P.016]

Low melting point metal alloys-based metal microneedle array electrodes for ECG detection

Jianbin Mao, Soonmin Seo*, *Gachon University, Republic of Korea*

[P.017]

Optical and electrical properties in Nd:YLF waveguides induced by swift Kr ion irradiation

Mei Qiao*[1], Tiejun Wang[1], Yong Liu[2], Shicai Xu[1], [1]*Dezhou University, China,*[2]*Shandong University, China*

[P.018]

Enhancing mechanical and IR optical properties of SiN_x/BN periodical coatings through optimization of deposition conditions.

Pengyuan Wu*, Boyang Shen, Penkov Oleksiy, *Zhejiang University, China*

[P.019]

Microstructure evolution and electrical behaviors for high performance Cu_2O/Zr-doped β-Ga_2O_3 heterojunction diodes

Jiangyiming Jiang*, Yun Tian, *Shandong University, China*

[P.020]

On-surface synthesis of two types of cyano-substituted polyfluorene derivatives via ullman coupling on AU(111)

Boyu Fu*[1], Jinming Cai[2], Jianchen Lu[1], [1]*Kunming University of Science and Technology, China,*[2]*Kunming University of Science and Technology, China*

[P.021]

Structural transformation and electronic structure of transition metal mono-chalcogenides

Gefei Niu*, Jinming Cai, Jianchen Lu, *Kunming University of Science and Technology, China*

[P.022]

Effect of a seed layer on the properties of CdZnTe thick films prepared by close-spaced sublimation method

Ke Xu, Keke Ding*, Ke Tang, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.023]

Properties of Li-doped NiO films prepared by magnetron sputtering on flexible substrates

Keke Ding*, Haofei Huang, Ke Tang, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.024]

Preparation study of cadmium zinc telluride thick-film radiation detectors based on sapphire substrates

Qunfang Wang[1], Haofei Huang[1], Keke Ding*[2], Ke Tang[1], Linjun Wang[1], Jian Huang[1], *[1]Shanghai University, China,[2]Shanghai University, China*

[P.025]

Transparent and flexible solar-blind ultraviolet photodetectors based on NiO/Ga_2O_3 heterojunction

Ke Tang*, Zhichao Qian, Haofei Huang, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.026]

High-Performance Ga_2O_3-based p-i-n heterojunction solar-blind ultraviolet photodetectors

Ke Tang*, Lei Zhang, Zhichao Qian, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.027]

Investigation on preparation process parameters optimization of n-Ga_2O_3/p-Si heterojunction solar-blind UV photodetector prepared by magnetron sputtering

Ke Tang*, Haofei Huang, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.028]

Hetero-interface boosted high-performance α-Ga_2O_3 thin-film phototransistors
Haofei Huang*, Zhichao Qian, Ke Tang, Jian Huang, Linjun Wang, *Shanghai University, China*

[P.029]

Effect of tin buffer layer on the performance of ga2o3-based solar-blind uv photodetectors

Hengzhi Xing, Haofei Huang*, Ke Tang, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.030]

High-performance Ga_2O_3 solar-blind photodetector based on thermal oxidized Ga buffer-layer

Haofei Huang*, Hengzhi Xing, Ke Tang, Jian Huang, Linjun Wang, *Shanghai University, China*

[P.031]

CO_2 electrochemical reduction to valuable products on the $Cu_2O(111)$ surface: a first-principles study

Hongling Liu*, Hui Pan, *University of Macau, Macao*

[P.032]

The effect of Al_2O_3 surface passivation layer prepared by ALD method on the performance of CdZnTe detectors

Longhui Lin*, Jian Huang, Ke Tang, Linjun Wang, *Shanghai University, China*

[P.033]

High performance flexible self-powered Ga_2O_3 UV solar-blind photodetectors with asymmetric electrodes

Ke Tang, Wei Zhang, Longhui Lin*, Linjun Wang, Jian Huang, *Shanghai University, China*

[P.034]

High performance Li-NiO/Si UV detectors with ZnO as the intermediate layer

Lujun Wang[1], Haofei Huang[1], Ke Tang[1], Meng Cao[1], Linjun Wang[1], Jian Huang[1], Longhui Lin*2, [1]*Shanghai University, China,*[2]*Shanghai University, China*

[P.035]

Antifouling superhydrophilic membranes coated with cysteine-functionalized silicone nanofilaments for efficient oil-water separation

Hengchang Liu[1,2,3], Deqi Wang[1], Haikang Huang[1], Wenting Zhou[1], Zonglin Chu*[1,2], [1]*Hunan University, China,*[2]*Greater Bay Area Institute for Innovation of Hunan University, Guangzhou, China,*[3]*NanChang Normal University, China*

[P.036]

Research on in-situ preparation of aluminum nitride layer on aluminum substrate surface

Yujing Li*[1,2], Kaijun Yang[1,3,2], Siyu Ji[1,1], Jinpeng Zhu[1,2], Qingkui Li[1,3,3], Jilin He[1,3,2], [1]*Zhengzhou University Henan Province Industrial Technology Research Institute of Resources and Materials, China,*[2]*Zhengzhou University Zhongyuan Critical Metals Laboratory, China,*[3]*Zhengzhou University School of Materials Science and Engineering, China*

[P.037]

Development of laboratory unit for zinc oxide treatment with hydrogen peroxide vapors

Ekaterina Vikulina*[1,2], Liudmila Istomina[1], Ilya Senin[1,2], Konstantin Sakharov[3], Sergey Andreev[1], [1]*F.F. Erisman Institute of Hygiene, Russia,*[2]*MIREA Russian Technological University M V Lomonosov Institute of Chemical Technology, Russia,*[3]*Nanyang Technological University, Singapore*

[P.038]

Interfacial oxygen-bridge chemical bonding reinforced electrochemical performance of MnO_2/CNT heterostructure for asymmetric supercapacitor

Yin Sun*[1], Shuhuang Tan[1], Zhaoqing Gao[2], Chengqi Sun[1], Shoujun Zhang[1], Yuxuan Sheng[1], Haibang Zhang[3], Junjie Zhang[4], Naibao Huang[5], [1]*Guangdong Ocean University, China,*[2]*Institute of Metal Research Chinese Academy of Sciences, China,*[3]*Jingdezhen Ceramic University, China,*[4]*Civil Aviation Flight University of China, China,*[5]*Dalian Maritime University, China*

[P.039]

Crystalline-amorphous Interfaces strategy for high-performance microwave absorption in traditional carbon-based materials

Weiping Ye*, Zhuangyi Zhou, Rui Zhao, Weidong Xue, *University of Electronic Science and Technology of China, China*

[P.040]

Improving interfacial adhesion strength of PET-Cu current collectors using SWCNT film

Zhaoqing Gao*[1,2], Zhenqiang Guo[1,2], Huicong Yang[1,2], Wutong Ding[1,2], Peng-Xiang Hou[1,2], Feng Li[1,2], Chang Liu[1,2], [1]*Institute of Metal Research Chinese Academy of Sciences, China,*[2]*University of Science and Technology of China, China*

[P.041]

Comprehensive ellipsometric study of temperature-dependent dielectric functions in monolayer $MoSe_2$

Liusheng Huang*[1,2], Honggang Gu[1], Shiyuan Liu[1], [1]*Key Laboratory of Intelligent Manufacturing Equipment and Technology, Huazhong University of Science and Technology, China,*[2]*School of Optical and Electronic Information, Huazhong University of Science and Technology, China*

[P.042]

The influence of laser shock processing on the microstructure and high-temperature oxidation behavior of Ni-based single crystal superalloys

Wangwang Ding*[1], Jiajun Wu[2], Xiaodie Cao[2], Yan Chen[3], Dongxing Zhang[1], Qiuquan Guo[1], Jun Yang[1], [1]*University of Electronic Science and Technology of China, China,*[2]*Shantou University, China,*[3]*University of Science and Technology Beijing, China*

[P.043]

Study on the effect of sandblasting pretreatment on the bonding properties of OSB and Chinese fir hybrid cross-laminated timber

Yi Wang, Haiyang Zhang*, Jiawei Tang, Zhiqiang Wang, *Nanjing Forestry University, China*

[P.044]

Study on tribological properties of carbon fiber surface-enhanced 7075 al alloy

Mu Yuan*, Qingnan Meng, Xinyue Mao, Shiyin Huang, Sifan Wang, Yuting Qiu, *Jilin University, China*

[P.045]

Design and modulation of GeTe/Sb_2Te_3 quantum well films for enhancing thermoelectric properties

Guangcai Ma*, Jiale Miao, Zhaoyang Liu, Yanyan Yuan, Rui Lan, *Jiangsu University of Science and Technology, China*

[P.046]

Near Ambient Pressure UV photoelectron spectroscopy for work function studies of dielectric samples

Fuzeng Wang*, Guido Grundmeier, Teresa de los Arcos de Pedro, *Paderborn University Subject Technical Chemistry, Germany*

[P.047]

UV-visible light photocatalytic activity of electrospun Eu, Yb-doped ZnO nanofibers

Marta Zaborowska*, Tomasz Tański, *Silesian University of Technology, Faculty of Mechanical Engineering, Poland*

[P.048]

Exploring the hydrogen production from NH3 and CH4 on pristine and Ag-Doped graphene: impact on electronic and optical properties - a multiscale computational study

Amil Aligayev*[1,2], Javier Dominguez-Gutierrez[2], Stefanos Papanikolaou[2], Qing Huang[1], [1]*University of Science and Technology of China, China,*[2]*National Centre for Nuclear Research, Poland*

[P.049]

Tandem electroreduction of CO_2 to ethylene over Cu doped zeolite imidazole framework (ZIF-8)

Dongli Meng*, Xingze Huang, *College of Materials and Chemical Engineering, Minjiang University , Fuzhou, Fujian 350108, China*

[P.050]

Growth of Mg-Cl crystals of abnormal stoichiometries on Au interfaces

Kexin Li*[1,2], Siyuan Zhang[1], Mingzhe Dong[1], Chunyan Wang[1,2], Xiushen Ye[1], Haining Liu[1], Zhijian Wu[1], Guosheng Shi[3], [1]*Key Laboratory of Comprehensive and Highly Efficient Utilization of Salt Lake Resources, Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, Xining, Qinghai 810008, China,*[2]*University of Chinese Academy of Sciences, 19 A Yuquan Road, Shijingshan District, China,*[3]*Shanghai Applied Radiation Institute, State Key Lab. Advanced Special Steel, Shanghai University, NO.99 Shangda Road, Baoshan District, Shanghai 200444, China*

[P.051]

In situ integration of v-Te/Si 2D/3D photodetectors toward ultra-broadband response technologies

Jianting Lu*, *National Key Laboratory of Science and Technology on Reliability Physics and Application of Electronic Component, China*

[P.052]

High performance biochar derived from mycelium leather waste for energy storage applications

Shenglong Li*[1], Shan Cao[1], Xintong Li[1], Yizhi Zhang[1], Xinde Wang[1], Xiaojing Zhang[1], Wenhui Lu[1], Yang Wang[2], [1]*Qilu University of Technology, China,*[2]*Shandong Normal University School of Chemistry Chemical Engineering and Materials, China*

[P.053]

Self-assembled surface can upgrade electrical conductivity in bi-continuous phase polymer composites

Han Zhang*[1,2], Zhen Zhang[3], Tingting Chen[4,5], Chang Liu[1,2], Shuanghua Wang[1,2], Jun Zhang[1,2], [1]*Department of Polymer Science and Engineering, College of Materials Science and Engineering, Nanjing Tech University, China,*[2]*Jiangsu Collaborative Innovation Center for Advanced Inorganic Function Composites, China,*[3]*Fiber and Biopolymer Research Institute, Department of Plant and Soil Science, Texas Tech University, USA,*[4]*College of Safety Science and Engineering, Nanjing Tech University, China,*[5]*Jiangsu Key Laboratory of Hazardous Chemicals Safety and Control, Nanjing Tech University, China*

[P.054]

Strong high-temperature oxidation resistant of AlCoCrFeNi high entropy alloy coating on the γ-TiAl alloy

Yuanyuan Sun*[1,2], Qiang Miao[3], Wenping Liang[3], [1]*Nanjing University of Aeronautics and Astronautics, China,*[2]*National University of Singapore, Singapore,*[3]*Nanjing University of Aeronautics and Astronautics, China*

[P.055]

Pulse-modulated gas-liquid discharge plasma for the octadecylamine and 4-dodecylmorpholine degradation: performance, degradation pathways and mechanism

Xuri Li*, *Qinghai University, China*

[P.056]

A comprehensive surface quality evaluation method for Nomex honeycomb composite materials based on resolution scale

Yu Zhang*[1], Feng Feng[1], Pingfa Feng[1,2], [1]*Division of Advanced Manufacturing, Shenzhen International Graduate School, Tsinghua University, China,*[2]*Department of Mechanical Engineering, Tsinghua University, China*

[P.057]

Enhanced PEC properties of CZT: In thin films by ICP etching

Meng Cao, Zhenzhao Zhang, Weifan He, Qingzhi Hu*, Zhen Xu, Jiahao Deng, Jian Huang, Linjun Wang, *Shanghai University, China*

[P.058]

Effect of defect regulation to the physical and electric properties of He ions irradiated CZT detectors

Meng Cao, Qingzhi Hu*, Weifan He, Zhenzhao Zhang, Zhen Xu, Jian Huang, Linjun Wang, *Shanghai University, China*

[P.059]

Fingerprint-like wrinkles with physical unclonable functions for anti-counterfeiting strategies

Chuanxing Wang*, Haoran Zhang*, Chaoheng Zhang, Liangzheng Du, Haoyi Zhang, Lei Pan*, *Nanjing University of Aeronautics and Astronautics, China*

[P.060]

Light-manipulated droplet climbing and pinning on a lubricant photothermal PDMS surface

Chaoheng Zhang*, Haoran Zhang*, Chuanxing Wang, Chen Wu, Lei Pan*, *Nanjing University of Aeronautics and Astronautics, China*

[P.061]

Research on a novel carbon-based film for improving the electrical conductivity of 316L bipolar plate

Xiaoxing Yang*[1], Cunlong Zhou[1], Tianxiang Wang[2], Jingwei Zhao[3], [1]*Taiyuan University of Science and Technology, China,*[2]*Taiyuan Iron and Steel Group Co Ltd, China,*[3]*Taiyuan University of Technology, China*

[P.062]

Experimental study of surface segregation in Cu-Ni alloy thin films

XinLiang Yan*[1], Jiangyong Wang[2], H.C. Swart[3], J.J. Terblans[3], Songyou Lian[2], [1]*Guangdong Medical University, China,*[2]*Shantou University, China,*[3]*University of the Free State, South Africa*

[P.063]

Purification of the LiCl-KCl molten salt system involved in the preparation Li employed by high-temperature molten salt electrolysis

Chunyan Wang*[1,2], Yanping Wang[1,2], Haining Liu[1], Wenjie Han[1], Siyuan Zhang[1], Xiushen Ye[1], Zhijian Wu[1], [1]*Key Laboratory of Comprehensive and Highly Efficient Utilization of Salt Lake Resources, Qinghai Province Key Laboratory of Resources Chemistry of Salt Lakes, Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, Xining, Qinghai 810008, PR China, China,*[2]*University of Chinese Academy of Sciences, 19 A Yuquan Road, Shijingshan District, Beijing 100049, PR China, China*

[P.064]

Influence of peak power density and bias voltage on the structure and mechanical properties of AlCrN and AlCrTiN coatings deposited by HiPIMS

Chi-Lung Chang[1], Guan-Lun Shen[1], Fu-Chi Yang[2], Jian-Fu Tang*[3], [1]*Ming Chi University of Technology Department of Materials Engineering, Taiwan,*[2]*National Taiwan University of Science and Technology Department of Mechanical Engineering, Taiwan,*[3]*Lunghwa University of Science and Technology Department of Electronic Engineering, Taiwan*

[P.065]

Catalyzing CO to produce two-carbon products at the edge of MoS_2 doped with metal atoms.

Jiangke Tao*, Hui Pan, *University of Macau, Macao*

[P.066]

Optimal temperature conditions for cryocondensation of thin films of aqueous mixtures on the surface of a cryopanel

Olga Vorobyova[1,2], Dmitriy Sokolov*[1,2], [1]*Al-Farabi Kazakh National University, Kazakhstan,*[2]*Almaty Technological University, Kazakhstan*

[P.067]

Preparation of tungsten carbide coated diamond particles by a molten salts rout

Sifan Wang*, Qingnan Meng, Xinyue Mao, Mu Yuan, Shiyin Huang, Yuting Qiu, Baochang Liu, *Jilin University, China*

[P.068]

Difference between contact length and droplet width of droplet impact on hydrophobic/superhydrophobic surfaces

Zhifeng Hu*[1], Haojiang Ran[2], He Shan[1], Fuqiang Chu[2], Ruzhu Wang[1], [1]*Shanghai Jiao Tong University, China,*[2]*University of Science and Technology Beijing, China*

[P.069]

Effect of heating on oxygen vacancy concentration and optical-electronic properties of RF magnetron sputtering MoO_x thin films

Xiaoqing Xu*[1], Kaijun Yang[1], Yujing Li[1], Jinpeng Zhu[1], Yaguang Chen[2], Chong Chen[1], Qingkui Li[1], Benshuang Sun[1], Jilin He[1], [1]*Zhengzhou University, China,*[2]*Fonlink Photoelectric (Luoyang) Co.,Ltd., China*

[P.070]

Temperature-dependent optical properties of the transition metal dichalcogenides HfX_2 (X=S,Se)

Qihang Zhang*, Zhengfeng Guo, Honggang Gu, Shiyuan Liu, *Huazhong University of Science and Technology, China*

[P.071]

Preparation and tribological properties of Ni-Cr-MoS_2 coating on the textured surface

Zhi Li[1], Xiaoguang Han[1,2], Yujie Shao*[1], Yingchun Shan[1,2], [1]*Dalian Maritime University, China,*[2]*Dalian Key Laboratory of Internal Combustion Engine Tribology and Reliability Engineering, China*

[P.072]

The sealing effect of thermodynamic behavior by HIPIB irradiation on micro-arc oxidation (MAO) film

Yujie Shao*[1], Xiaoguang Han[1,2], Yingchun Shan[1,2], Yi Wei[1], [1]*Dalian Maritime University, China*,[2]*Dalian Key Laboratory of Internal Combustion Engine Tribology and Reliability Engineering, China*

[P.073]

Coexistence of digital and analog resistive switching behaviors in nanocrystalline yttrium-iron-garnet thin film devices achieved by electrode engineering

Chuangye Yao*, Tao Tian, *XiangNan University, China*

[P.074]

The effect of HiPiMS gradient modulation period on the mechanical properties of DLC multilayer films prepared on ACM rubber.

Changxin Han*, Qiaoyuan Deng, Feng Wen, *Hainan University, China*

[P.075]

Study on plasma crystallization densification and insulation thermal conductivity of aluminum anodic oxidation coating

Yifeng Yang*[1], Cancan Liu[2], Hongtao Li[2], Hao Wang[1], Wenqiang Wang[1], [1]*Nanjing Tech University, China*,[2]*Nanjing Tech University, China*

[P.076]

Investigation on the electrochemical chracteristics and interfacial contact resistance of TiC-coated titanium in a polymer fuel cell environment

Hyun-Kyu Hwang*, Seong-Jong Kim, *Mokpo national maritime university, Republic of Korea*

[P.077]

Investigation of electropolishing conditions and electrochemical characteristics of titanium in eco-friendly electrolyte solution

Hyun-Kyu Hwang*, Seong-Jong Kim, *Mokpo national maritime university, Republic of Korea*

[P.078]

Neurosynaptic-like behavior of ruddleson-popper phase Ba_2TiO_4 ferroelectric memristors for High-Performance neuromorphic computing

Dongliang Li*, Dongping Yang, Xingui Tang, *Guangdong University of Technology, China*

[P.079]

Photoelectric synapse based on $SrTiO_3/TiO_2$ heterojunctions for photoelectric response modulation and resistive switching

Dong-ping Yang*[1], Dong-liang Li[2], Xin-Gui Tang[2], [1]*School of Physics & Optoelectric Engineering, Guangdong University of Technology, Guangzhou, 510006, China, China,*[2]*School of Physics & Optoelectric Engineering, Guangdong University of Technology, Guangzhou, 510006, China*

[P.080]

Highly dispersed Ru-Pt Alloy nanoclusters catalyst grown on graphene oxide (GO) for pH-universal hydrogen evolution

Yang Junge*, *University of Macau, Macao*

[P.081]

A van der Waals ferroelectric diode based on α-In_2Se_3/MoS_2 heterojunction

Ruibin Duan*[1], Dengqin Xu[1], Minghe Zhang[1], Junchen Dong[2], Dunshan Yu[1], Dedong Han[1,3,4], Xing Zhang[1,5], [1]*Peking University, China,*[2]*Beijing Information Science and Technology University, China,*[3]*Beijing Advanced Innovation Center for Integrated Circuits, China,*[4]*Beijing Superstring Academy of Memory Technology, China,*[5]*Peking University Shenzhen Graduate School, China*

[P.082]

Study on black micro-arc oxidation coating of magnesium alloy in vanadium-free system

Shiquan Zhou*, Rui Tong, Xiang Tao, Bo Chen, Cancan Liu, Hongtao Li, *Nanjing Tech University, China*

[P.083]

Upcycling of waste polyethylene terephthalate into hierarchical porous carbons for high performance supercapacitor

Li-Ming Lu[1], Tzu-Hsien Hsieh[2], Jarrn-Horng Lin*[1], [1]*National University of Tainan, Taiwan,*[2]*CPC Corp, Taiwan*

[P.084]

Effect of ultra-high dose ^{60}Co γ-ray irradiation on 1/f noise characteristics of terahertz Schottky diodes

Yuebo Liu*, Jiahui Yan, Xiyu Chen, Hongyue Wang, Teng Ma, *China Electronic Product Reliability and Environmental Testing Research Institute, China*

[P.085]

Interfacial properties prediction of carbon fiber composites via multi-scale nanomaterial enhancement and wetting parameter analysis

ChunHang Shang*[1], FuLi Wang[1], Jun Shen[2], Ting Zheng[1], [1]*Harbin Engineering University, China,*[2]*University of Science and Technology Beijing School of Civil and Environmental Engineering, China*

[P.086]

Surface analysis of stainless steel electrode cleaned by atmospheric pressure plasma

Mengjia Dang*, Jia Zhang, Cheng Luo, Yongshan Ba, Qingkai Li, Mengjiao Lin, Xin Liu, *Xidian University,Xi'an,710126, China*

[P.087]

Unraveling the friction response from deformation behaviour of piezoelectric damping composites

Liyuan Zhang[*1,2,3], Conglin Dong[1,2,3], Chengqing Yuan[1,2,3,4], Xiuqin Bai[1,2,3], Tun Cai[1,2,3], [1]*State Key Laboratory of Maritime Technology and Safety, Wuhan University of Technology, Wuhan 430063, China,*[2]*School of Transportation and Logistics Engineering, Wuhan University of Technology, Wuhan 430063, China,*[3]*Reliability Engineering Institute, National Engineering Research Center for Water Transportation Safety, Wuhan 430063, China,*[4]*East Lake Laboratory, Wuhan 430202, China*

[P.088]

Raman spectroelectrochemical determination of paraquat in complex samples

Henry Kavazoi[*1], Celina Miyazaki[1], Carlos Constantino[1], Cibely Martin[2], Priscila Alessio[1], [1]*Sao Paulo State University Julio de Mesquita Filho - Presidente Prudente Campus, Brazil,*[2]*Sao Paulo State University Julio de Mesquita Filho - Ilha Solteira Campus, Brazil*

[P.089]

Paraquat detection through *in situ* surface-enhanced Raman spectroscopy

Henry Kavazoi[*], Celina Miyazaki, Carlos Constantino, Priscila Alessio, *Sao Paulo State University Julio de Mesquita Filho - Presidente Prudente Campus, Brazil*

[P.090]

Electrochemical sensing of methylene blue: innovations with molecularly imprinted membranes

Victoria Katata[1,2], Celina M Miyazaki[1], Coral Salvo[2], Maria Luz Rodríguez-Méndez[2], Priscila Alessio[*1], [1]*São Paulo State University, Brazil,*[2]*University of Valladolid, Spain*

[P.091]

Surface structure modification of ReSe2 nanosheets viacarbon ion irradiation

Mei Qiao, Tiejun Wang[*], *Shandong Key Laboratory of Biophysics, China*

[P.092]

Gas-phase approaches to the modification of carbon surfaces by F- and S-containing groups

Gauhar Mussabek[*1,2], Saule Baktygerey[1,2], Nazym Zhylkybayeva[1,2], Dana Yermukhamed[1,2], Gulmira Yar-Mukhamedova[1], Yerzhan Taurbayev[1], Vitaliy E. Diyuk[3], Vladyslav V. Lisnyak[3,1], [1]*National Nanotechnological Laboratory of Open Type, Al-Farabi Kazakh National University, Kazakhstan,*[2]*Institute of Information and Computational Technologies, Kazakhstan,*[3]*Faculty of Chemistry, Taras Shevchenko National University of Kyiv, Ukraine*

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Mechanical properties and fretting wear resistance behavior of CrN coatings on Zr-4 alloy prepared by double glow plasma alloying technology

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Fabrication of $Bi_2O_2(OH)NO_3$/AgBr heterojunction photocatalyst for Rhodamine B dye removal under solar light irradiation

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Molecular dynamics simulations provide insights into carbon nanotube loading strategies for peptide drugs

Qu Chen[*], *Zhejiang University of Science and Technology, China*

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Combining organic and inorganic 2D nanomaterials integrated with smartphone for rapid milk adulterant detection

Tamires Pereira[1], Danilo dos Santos[2], Rafaela Andre[2], Daniel Correa[*2], [1]*Federal University of Sao Carlos, Brazil,*[2]*Embrapa Instrumentation, Brazil*

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Improving the stability of perovskite functional film by modifying the composition to further obtain sustainable solar cells

Zhansaya Omarova, Darkhan Yerezhep, Doszhan Akalim[*], Aidos Lesbayev, *Satbayev University, Kazakhstan*

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Study of the influence of hydrogen bonds on the formation and stabilization of perovskite functional thin films

Zhansaya Omarova, Darkhan Yerezhep, Doszhan Akalim[*], Aidos Lesbayev, *Satbayev University, Kazakhstan*

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Effect of Buffer Layer on Electrochemical characteristics and Contact Resistance of TiC and TiN Coatings for Applications in Metallic Bipolar Plate of PEMFCs

Dong-Ho Shin[*], Seong-Jong Kim, *Mokpo National Maritime University, Republic of Korea*

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Characteristics of CrAlN Coating to Improve Performance of Stainless Steel for Metallic Bipolar Plate of PEMFCs

Dong-Ho Shin*[1], Jae-Un Kim[2], Seong-Jong Kim[1], [1]*Mokpo National Maritime University, Republic of Korea,*[2]*JNLTECH CO., Ltd., Republic of Korea*

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Collagen coatings containing silver nanoparticles on the Ti-6Al-4V alloy by plasma electrolytic oxidation and electrochemical deposition methods for oral soft tissue

Han-Cheol Choe*, Sun Jin Park, *Chosun University College of Dentistry and Graduate School of Dentistry, Republic of Korea*

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Effect of Heat Treatment on Tribological and Electrochemical Characteristics of TiAlN-Coated Stainless Steel for Hydrogen Valve Applications

Seong-Jong Kim*, Dong-Ho Shin, Hyun-Kyu Hwang, *Mokpo National Maritime University, Republic of Korea*

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MoS_2 nanoparticles-doped TiO_2 coatings on Ti-6Al-4V alloy by plasma electrolytic oxidation method for functional implant surface

Sidra Sadaf Nisar*, Han Cheol Choe, *Chosun University College of Dentistry and Graduate School of Dentistry, Republic of Korea*

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Enhancement of mechanical and thermal properties of diamond particles via vanadium carbide coatings

Wang Xueqi*, Tu Jianbo, Baochang Liu, *Jilin University, China*

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Coatings of Cu NPs-incorporated MWCNT with hydroxyapatite on Ti-6Al-4V alloy by plasma electrolytic oxidation process: enhanced their corrosion resistance and anti-bacterial activities for dental implants

Mahendran Logesh*, Han-Cheol Choe, *Chosun University College of Dentistry and Graduate School of Dentistry, Republic of Korea*

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Emission spectroscope diagnose and numerical investigation of the Effect of anode nozzle contour on the low pressure plasma jet in YSZ coating deposition

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Wollastonite-Forsterite composite coatings on the plasma electrolytic oxidized Ti-6Al-4V alloy for dental implant

So Yun Joo*[1], Jong Kook Lee[2], Han-Cheol Choe[1], [1]*Chosun University College of Dentistry and Graduate School of Dentistry, Republic of Korea,*[2]*Chosun University, Republic of Korea*

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Fabricating highly dispersed nanoscale Fe3O4 electrocatalysts with enhanced performance for ORR, OER and Zn-Air battery

Junjie Zhang*, *Civil Aviation Flight University of China, China*

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Mechanically synthesized TCP and OCP coatings on the plasma electrolytic oxidized titanium alloys for bio-implant use

Kyeong-Tae Kim*, Mahendran Logesh, Han-Cheol Choe, *Chosun University College of Dentistry and Graduate School of Dentistry, Republic of Korea*

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TEM characterization of yttrium deficient YBCO films grown by fluorine-free metal-organic decomposition

Dean Liu*[1], Yue Wu[1], Jiangtao Shi[2], Mengrui Zhao[1], Haoliang Xiang[1], Yue Zhao[1], [1]*Shanghai Jiao Tong University, China,*[2]*Northwest Institute for Non-ferrous Metal Research, China*

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The characteristics of nickel silicide thin films formed by solid/liquid-state reactions using UV nanosecond laser annealing

Hyun Cho*, Dae-Hong Ko, *Yonsei University, Seoul, Republic of Korea*

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Influence mechanism of chromium and iron on the gasification reactivity of coke and density functional theory

Ruisong Tan*[1], Haijuan Wang[2], Jiajun Gong[2], Bo Song[1], Xiangjun Liu[3], [1]*University of Science and Technology Beijing, China,*[2]*University of Science and Technology Beijing, China,*[3]*Inner Mongolia University of Science and Technology, China*

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Etching mechanism of photoelectrochemical mechanical polishing in silicon sol for GaN

Yuewen Sun*, Zhigang Dong, Yang Zhao, Jihao Zhang, Renke Kang, Shang Gao, *Dalian University of Technology, China*

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Investigation of porosity and thermal collapse in cryovacuum condensates H2O, CO2, CO, and their mixtures

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Selective oxidation behavior of Br- on the Ag/Cu-modified PbO2/CoO2/graphite felt electrocatalytic anode

Qinghong Li[1,2], Huifang Zhang[*1], Zhongmei Song[1,2], Miao Lu[1,2], Qiongyuan Zhang[1,2], Chunyan Wang[1], Shiqiang Wang[3], Faman Tang[4], Guoyun Yu[4], Haining Liu[1], Xiushen Ye[1], Zhijian Wu[1], [1]*Qinghai Key Laboratory of Salt Lake Resources & Chemistry, Qinghai Institute of Salt Lakes Chinese Academy of Sciences, China,*[2]*University of Chinese Academy of Sciences, China,*[3]*College of Marine and Environmental Sciences, Tianjin University of Science and Technology, China,*[4]*Minmetals Salt Lake Co., LTD., China*

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Understanding the interference of a gaseous fire suppression agent on the CO catalytic removal over CuCe oxides

Ning Kang[*], Zhiqiang Zhao, Jin Lin, Shouxiang Lu, *University of Science and Technology of China, China*

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Influence of thickness on the microstructure and performance of $BaHfO_3$-doped $EuBa_2Cu_3O_{7-\delta}$ film by ultra-fast PLD techniques

Mengrui Zhao[*], Yue Wu, Haoliang Xiang, Yue Zhao, *Shanghai Jiao Tong University, China*

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Enhancing corrosion resistance and mechanical properties of galvanized steel plates through surface treatment with multifunctional waterborne polyurethane nanocomposite coating

Yu-Wei Cheng[*1], Bo-Yi Li[2], You-Teng Zhang[1], [1]*Ming Chi University of Technology Department of Chemical Engineering, Taiwan,*[2]*Ming Chi University of Technology Department of Chemical Engineering, Taiwan*

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Defect passivation of high-*k* HfO_2 dielectrics for thin film transistor by N_2-H_2 mixed gas annealing

Mingjie Zhao[1], Yao-Tian Wang[*1], Jia-Hao Yan[1], Hai-Cheng Li[1], Hua Xu[2], Dong-Sing Woo[3], Wan-Yu Wu[4], Feng-Min Lai[5], Wen-Zhang Zhu[1], [1]*Xiamen University of Technology, China,*[2]*Guangzhou New Vision Opto-electronic Technology CO., Ltd., China,*[3]*National Chi Nan University, Taiwan,*[4]*National United University, Taiwan,*[5]*Da-Yeh University, Taiwan*

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Study of physical properties of superhydrophobic nanowires obtained by plasma treatment

Sagi Orazbayev[*1,2], Usenkhan Ussenkhan[2], Baglan Kyrykbay[2], Yerassyl Yerlanuly[2], Almasbek Utegenov[1], Maratbek Gabdullin[3], Tlekkabul Ramazanov[1], [1]*Al-Farabi Kazakh National University, Kazakhstan,*[2]*Institute of Applied Science and Information Technologies, Kazakhstan,*[3]*Kazakh-British Technical University, Kazakhstan*

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Synthesis of chondro-like particles via radiofrequency plasma discharge

Akdaulet Baikaliyev[1], Madina Dauylbayeva[1], Assan Abdirakhmanov[2], Sagi Orazbayev*[1], Didar Batryshev[2], Tlekkabul Ramazanov[1], [1]*Al-Farabi Kazakh National University, Kazakhstan,*[2]*Kazakh-British Technical University, Kazakhstan*

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Preparation of TiO_2 nanotubes carrying controllably degradable growth factor-containing gelatin nanoparticles on titanium surfaces for inducing angiogenesis and osteogenesis

Her-Hsiung Huang*, Chia-Fei Liu, *National Yang Ming Chiao Tung University, Taiwan*

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Reaction mode-controlled crystal structure and optical and electrical properties of SnOx infrared transparent conducting films

Xiaojun Ma*, Liangge Xu, *Harbin Institute of Technology, China*

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Improving the charge transfer behavior of gas molecules on semiconductor surfaces: A study of the mechanism by which heterostructures promote gas-sensitive properties

Xinglian Yang*, Jiamu Cao, Rongji Zhang, Qijun Yang, Zhoumin Yang, Dingyi Liu, Yiming Guo, *Harbin Institute of Technology, China*

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The influence of plasma surface modification on the adhesive and triological properties of hybrid Kevlar/PTFE fabric composite

Yingyi Liu*[1,2], Lei Zhou[3], Ting Zheng[4], Honbin Li[5], Dongxing Zhang[6], David Seveno[7], [1]*School of Materials Science and Engineering, Heilongjiang University of Science and Technology, China,*[2]*Department of Materials Engineering Department of Materials Engineering, KU Leuven, Belgium,*[3]*Harbin FRP Institute Co., Ltd., China,*[4]*College of Materials Science and Chemical Engineering, Harbin Engineering University, China,*[5]*College of Light Industry and Textile, China,*[6]*School of Materials Science and Engineering, Harbin Institute of Technology, China,*[7]*Department of Materials EngineeringDepartment of Materials Engineering, KU Leuven, Belgium*

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Synthesis of silicon nanoclusters with a permanent electric dipole moment by PECVD method

Sultan Ussenkhan[1], Askar Zhunisbekov*[1], Sagi Orazbayev[2,1], Yerassyl Yerlanuly[3], Almasbek Utegenov[1], Tlekkabul Ramazanov[1], [1]*Al-Farabi Kazakh National University, Kazakhstan,*[2]*Institute of applied sciences and information technology, Kazakhstan,*[3]*Institute of applied sciences and information technology, Kazakhstan*

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Microstructured slippery surfaces for evaporation control of colloidal droplets

Woo Young Kim*, Seok Kim, Young Tae Cho, *Changwon National University, Republic of Korea*

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Control of shape and size in microlens arrays through digital patterning and variation in spin coating speed

Jun Ho Song*, Seungwoo Shin, Seo Rim Park, Seok Kim, Young Tae Cho, *Changwon National University, Republic of Korea*

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Enhanced exhaust emission reduction via 3D microlattices embedded with photocatalytic nanoparticles

Seo Rim Park*[1], Do Hyeog Kim[1], Neunggyo Ha[2], Seok Kim[1], Young Tae Cho[1], [1]*Changwon National University, Republic of Korea,*[2]*Energen Co.,Ltd, Republic of Korea*

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HiPIMS deposition of hard yet transmissive protective films for infrared window at low temperature

Xiangqing Teng*, *Harbin Institute of Technology, China*

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Analysis of colloidal droplet aggregation on slippery liquid-infused surfaces

Seong Min Yoon*, Woo Young Kim, Seok Kim, Young Tae Cho, *Changwon National University, Republic of Korea*

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Markless alignment of micropatterned surfaces in three-dimensional space via integration of Fourier Spectral image analysis and deep learning

Seo Na Yoon*, Woo Young Kim, Bo Wook Seo, Bum Jin Kim, Seok Kim, Young Tae Cho, *Changwon National University, Republic of Korea*

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Shape morphing of 3D-printed structures via water absorption in photocured polymeric interfaces

Sun Hye Yoon*, Seo Rim Park, Seok Kim, Young Tae Cho, *Changwon National University, Republic of Korea*

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Fabrication of conformal SiO_2-coated Cu dendritic particles using TEOS for insulation type TIM applications and evaluation of electrical and thermal properties of sintered paste

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Sinter-bonding characteristics of dendritic Cu particles surface-treated with oxalic acid

Horyun Kim[1], Jong-Hyun Lee[*2], [1]*Seoul National University of Science & Technology, Republic of Korea,*[2]*Seoul National University of Science and Technology, Republic of Korea*

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Theoretical analysis and experimental research on reconstruction models of frictional surfaces and force chains in the Rice Kettlebells

Zuci Quan[*1], Yirui Wang[1], Runyu Zhou[1], Feng Wan[1], Nianbao Li[1], Jiahao Fang[1], Hao Tang[1], Qi Jia[2], Yufei Zhao[2], Leheng Lin[2], MD Aminur Rahman[2], [1]*Nanchang University, China,*[2]*Nanchang University, China*

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Single/dual frequency switchable terahertz metamaterial absorbers based on temperatures and voltages modulation of vanadium dioxide thin films

Zuci Quan[*], Feng Wan, Runyu Zhou, Yirui Wang, Nianbao Li, Jiahao Fang, Hao Tang, Qi Jia, Yufei Zhao, MD Aminur Rahman, *Nanchang University, China*

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A tunable metamaterial terahertz absorber with graphene narrow slot structure based on an applied voltage modulation

Zuci Quan[*], Runyu Zhou, Feng Wan, Yirui Wang, Nianbao Li, Jiahao Fang, Hao Tang, Qi Jia, Likun Cai, MD Aminur Rahman, *Nanchang University, China*

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Electromagnetic characteristics of flexible reconfigurable metasurfaces based on multiphysical field modulation

Zuci Quan[*], Jiahao Fang, Hao Tang, Runyu Zhou, Feng Wan, Yirui Wang, Nianbao Li, Qi Jia, Junjie Li, MD Aminur Rahman, *Nanchang University, China*

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Construction, output performances and applications of electronic-skin-based triboelectric nanogenerators

Zuci Quan[*], Nianbao Li, Runyu Zhou, Yirui Wang, Feng Wan, Jiahao Fang, Hao Tang, Qi Jia, Haojie Li, MD Aminur Rahman, *Nanchang University, China*

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Microstructures and multiferroic properties of component gradient ferroelectric strontium barium titanate thin films prepared by radio frequency magnetron sputtering

Zuci Quan[*], Hao Tang, Nianbao Li, Yirui Wang, Runyu Zhou, Feng Wan, Jiahao Fang, Qi Jia, Yufei Zhao, MD Aminur Rahman, *Nanchang University, China*

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Dual alkyl benzimidazole quaternary ammonium salt-modified montmorillonite for effect biobased poly (trimethylene terephthalate) nanocomposites on microstructure, mechanical and barrier prpoerties

Kunyan Wang*, Changjin Lv, Qianhui Chi, Yuqi Jiang, Yuhua Guo, Guoxiang Pan, *Huzhou University, China*

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3D $Ti_3C_2T_x$/rGO with high mass loading for high-performance supercapacitor

Yangbin Ding*, *Huzhou University, China*

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Effect of boron on the microstructure and properties of laser deposited Invar alloy coating

Haitao Jiao*, Bing Peng, Longzhi Zhao, Mingjuan Zhao, Yong Hu, Yanchuan Tang, Dejia Liu, *East China JiaoTong University, China*

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Localized surface plasmon energy dissipation in bimetallic core-shell nanostructures

Lixia Sang*, Zhiyong Ren, Yue Zhao, *Beijing University of Technology, China*

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Assessment of the radiation defects evolution induced by ion beam surface modification of fcc Ni and NixFe1-x single crystals

Edyta Wyszkowska*[1], Cyprian Mieszczyński[1], Alexander Azarov[2], Witold Chromiński[3], Anna Kosińska[1], Damian Kalita[1], Iwona Jóźwik[1], Jacek Jagielski[1], [1]*National Centre for Nuclear Research, Poland,*[2]*University of Oslo, Norway,*[3]*Warsaw University of Technology Faculty of Materials Science and Engineering, Poland*

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Damage kinetics in high-temperature irradiated Ni crystals

Cyprian Mieszczyński[1], Edyta Wyszkowska*[1], Przemysław Jóźwik[1], Kazimierz Skrobas[1], Kamila Stefańska-Skrobas[1], Marek Barlak[1], Renata Ratajczak[1], Anna Kosińska[1], Witold Chromiński[2], Katharina Lorenz[3], [1]*National Centre for Nuclear Research, Poland,*[2]*Warsaw Univeristy of Technology, Poland,*[3]*Instituto de Plasmas e Fusão Nuclear, , Instituto Superior Técnico-Campus Tecnológico e Nuclear, Universidade de Lisboa, Portugal*

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Study of titanium/zirconium with low polymerization water-based epoxysilane composite chemical conversion coatings on multi-metal of new energy vehicles

Wen Zhan*[1,2], Wenhao Wang[1], Yingpeng Li[2], Jun Wu[1], Du Wang[2], Xiaohui Liu[2], Yunhu Ding[1], [1]*Wuhan Research Institute of Materials Protection, China,*[2]*Haixi (Fujian) Institute, China Academy of Machinery Science and Technology Group Co., Ltd., China*

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Integrated structure–function design of 3d-printed porous polydimethylsiloxane for superhydrophobic engineering

Zhoukun He[1], Jie Su[1], Xiaowei Zhu[2], Yue Li[2], Yilun Shi[2], Lanjie Hou[2], Qi Jiang[3], Xiaorong Lan[*4], [1]*Chengdu University, China,*[2]*Henan University of Technology, China,*[3]*Sichuan Highland Engineering Design Consulting Co., Ltd, China,*[4]*Southwest Medical University, China*

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Various DNA identification strategies using surface enhanced raman scattering: new SERS DNA biosensor for detecting mutations in real clinical samples

Aleksandra Michałowska[*1], Agata Kowalczyk[2], Anna Nowicka[2], Jan Weyher[3], Andrzej Kudelski[2], [1]*University of Warsawa, Poland,*[2]*University of Warsaw, Poland,*[3]*Institute of High Pressure Physics of the Polish Academy of Science, Poland*

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Gallic acid-amine functionalized membranes for nucleic acid adsorption

Qi Zhao[*], Xiaoyue Liang, Chunju He, *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China*

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Microstructure, bioactivity, and antibacterial properties of TiO_2-AgHA gradient coating fabricated by Sol-gel method

Lingzhi Cao[1], Haibo Wang[2], Jiaojiao Du[3], Jichun Wang[4], Xinhui Lu[4], Pengfei Gao[*4], [1]*Affiliated Hospital of North Sichuan Medical College, China,*[2]*Panzhihua University, China,*[3]*Yangzhou University, China,*[4]*Southwest University of Science and Technology, China*

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Amphiphilic and biodegradable marine antifouling coatings with controllable release of antifouling agent

Xiaoyue Liang[*], Qi Zhao, Chunju He, *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China*

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High performance WO_x/WS_2-based PN phototransistors for weak light detection

Weiqi Shi[*1], Hongyu Tang[1], Rongjun Zhang[1], Guoqi Zhang[2], [1]*Fudan University, China,*[2]*Delft University of Technology, The Netherlands*

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Influence of CeO_2 crystal facet on acetylene selective hydrogenation over Pd/CeO_2 catalysts

Hui Dai[*1], Anhang Zhang[1], Tao Tang[1], Wenwen Chen[1], Xin Xiao[2], Yan Wang[2], Changjian Zhou[3], [1]*Chengdu University of Technology, China,*[2]*Sichuan University, China,*[3]*Yancheng Institute of Technology, China*

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Laser functionalization of titanium-based materials devoted to biomedical applications

Donata Kuczyńska[1], Agata Sotniczuk[*2,3], Halina Garbacz[3], [1]*Multidisciplinary Research Center – Cardinal Stefan Wyszyński University in Warsaw, Poland,*[2]*NOMATEN CoE, National Centre for Nuclear Research, Poland,*[3]*Warsaw University of Technology, Poland*

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Simulation of friction and wear of Si_3N_4-based composite thin films based on ABAQUS

Feng Lu[1], Ting Zhang[1], Xu Bai[2], Hanqiang Wu[1], Yuhou Wu[1,3], Tongxiang Zheng[1], He Zhang[*1], [1]*Shenyang Jianzhu University, China,*[2]*Shenyang University of Technology, China,*[3]*Joint Engineering Laboratory of NC Machining Equipment and Technology of High-Grade Stone, China*

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From superhydrophilic to superhydrophobic: what is the best coating option for catheters to prevent catheter-associated urinary tract infections?

Shuai Zhang[*], *Queen's University Belfast, UK*

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Cerium and hydrogen co-doped indium oxide for high quality infrared transparent electromagnetic shielding

Chao Duan[*], *Harbin Institute of Technology, China*

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UV-enhanced MOF-ZnO:Mg sensor for n-butanol gas detectionat lower operating temperature

Xiaoshun Wei a §[*], Xuechun Yang b §, Yun Guo a,*, Guohao Li a, Yinzhong Liu a, Tian Ye a, Lingli Cheng b, Zheng Jiao b,*, *Shanghai University, China*

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Interfacial properties of aqueous ionic liquids on graphene surface in supercapacitors

Fenhong Song[*1], Jiaming Ma[1], Fukang Wang[2], Gang Wang[1], Jing Fan[1], [1]*Northeast Electric Power University, China,*[2]*Zoomlion Earth Moving Machinery Co., LTD, China*

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Al-La-O ALD coatings to increase LAGP/Li metal interface stability

Pavel Vishniakov[*1], Ilya Ezhov[1], Vladislav Chernyavsky[1], Viktor Markov[1], Maria Lebedeva[1], Denis Olkhovskii[1], Denis Nazarov[1], Shengjie Peng[2], Maxim Maximov[1], [1]*Peter the Great St.Petersburg Polytechnic University, Russia,*[2]*Nanjing University of Aeronautics and Astronautics, China*

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Synergistic effects of Al and Fe on the mechanical properties of $L1_2$-strengthened CoCrNi high-entropy alloys coatings by laser cladding

Jianyan Xu*[1], Wenping Liang[1], Qiang Miao[1], Haiyang Yu[1], Mengjuan Yin[1], Yinghu Wang[2], Jiayao Yu[3], [1]*Nanjing University of Aeronautics and Astronautics, China,*[2]*University of Science and Technology Beijing, China,*[3]*The University of Manchester, UK*

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Tribological properties of Cr_2O_3, Cr_2O_3-TiO_2-SiO_2, and Cr_2O_3-TiO_2-SiO_2-graphite coatings deposited by plasma spraying

Lukas Bastakys*[1], Liutauras Marcinauskas[1,2], Mitjan Kalin[3], Sebastjan Matkovič[3], Mindaugas Aikas[2], [1]*Kaunas University of Technology, Lithuania,*[2]*Lithuanian Energy Institute, Lithuania,*[3]*University of Ljubljana, Slovenia*

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Microstructure and wear resistance of Ni60A+ZrB_2 laser cladding coatings modified by different rare earth oxides

Longjie Zhao*, Huijun Yu, Chuanzhong Chen, *Shandong University, China*

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Microstructure and wear property of Ni60A+ZrB_2+MoS_2@Ni self-lubricating coatings prepared by laser cladding

Longjie Zhao*, Huijun Yu, Chuanzhong Chen, *Shandong University, China*

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A study of the influence of the addition of lime to natural indigo production

Laksanawadee Saikhao*[1], Narisara Kaew-unruan[1], Kannikar Thanomsith[1], Wasan Munmuansan[2], [1]*Department of General Science, Faculty of Science and Engineering, Kasetsart University, Chalermphrakiat Sakon Nakhon Province Campus, Sakon Nakhon,, Thailand,*[2]*The Federation Thai SME, Soi Prawit Lae Phuean, Prachachuen Road, Lad Yao, Chatuchak,, Thailand*

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High-throughput screening of optimal anode protective layer for aqueous Zinc air batteries using first-principles and machine learning potential

Suseong Hyun*, Byungchan Han, *Yonsei University Department of Chemical and Biomolecular Engineering, Republic of Korea*

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Bifunctional nitrogen-doped copper-sulfide-oxide batteries for efficient oxygen reduction via cascade aerobic and anaerobic battery modes in Zinc-Air batteries : a DFT Study

Yonghak Park*, Byungchan Han, *Yonsei University Department of Chemical and Biomolecular Engineering, Republic of Korea*

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Synergistic promotion of sodiophilicity and conductivity by in-situ growth of $CuGa_2$ on the 3D conductive host for stable sodium metal batteries

Wei Tao*, Byungchan Han, *Yonsei University, Republic of Korea*

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Synchrotron X-ray nanodiffraction study of electromigration

Wan-Zhen Hsieh*[1], Zhao-Yu Yang[2], Ying-Chih Chiang[2], Ching-Yu Chiang[1], [1]*National Synchrotron Radiation Research Center, Taiwan,*[2]*Yuan Ze University Department of Chemical Engineering and Materials Science, Taiwan*

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In-situ growth behaviour and insulation characteristics of alumina film for ceramic insulated wire

Haomin Li*[1], Xiaowen Wu[1], Qirui Zhang[1], Yingsan Geng[1], Li Lei[2], [1]*Xi'an Jiaotong University, China,*[2]*Sino-Russian Joint Materials Laboratory, China*

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Designed transition metallic nanocomposite as high-performance OER electrocatalyst

Xiang Li*, Cristina Giordano, *Queen Mary University of London, UK*

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Enhancing hydrogen evolution reaction performance of transition metal doped two-dimensional electride Y_2C

Li Chaoqun*, *North University of China, China*

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Hydrogel formed by aldehyde modified cellulose nanocrystals crosslinked via Diels–Alder reaction for pH-sensitive release of amino-containing compounds

Sofia Morozova*, *Bauman Moscow State Technical University National Research University of Technology, Russia*

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ZnS/SPAN hybrid anode material for high energy density applications

Ayeong Bak*, Mingxu Li, Dengzhou Liu, Dirfan Zabrian, Jou-Hyeon Ahn, *Gyeongsang National University, Republic of Korea*

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Utilizing perovskite nanoparticles as a Bi-functional catalyst to accelerate the performance of lithium sulfur batteries

Dirfan Zabrian*, Ayeong Bak, Mingxu Li, Dengzhou Liu, Jou-Hyeon Ahn, *Gyeongsang National University, Republic of Korea*

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Unique core-shell architecture of Fe_3O_4 anodes for high performance lithium-ion batteries

Mingxu Li*, Dengzhou Liu, Ayeong Bak, Dirfan Zabrian, Jou-Hyeon Ahn, *Gyeongsang National University, Republic of Korea*

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The effect of different pigment on the adhesion mechanism of marine bacteria and *Naviclua* on fluorescent anti-fouling coating

Qi'an Chen*, Zhanping Zhang, Gang Xiong, Long Wang, *Dalian Maritime University, China*

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Biomass waste-derived porous carbon fiber framework and multifaceted architecture designed for advancing sustainability in lithium sulfur batteries.

Dengzhou Liu*, Mingxu Li, Ayeong Bak, Dirfan Zabrian, Jou-Hyeon Ahn, *Gyeongsang National University, Republic of Korea*

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Hard x-ray photoelectron spectroscopy with molecular beam epitaxy capabilities at canadian light source

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Dft insight of electromechanic properties of li passivated ge nanowires as anodic material

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Enhanced mechanical properties and friction-induced tribolayer formation of dual-doping Mo-S-Ta-N sputtered film

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Robust and superhard TaMoAgN films with solute and nanocomposite structure and tribological performance at elevated temperatures

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Interface investigation on H, Cl treated in situ B doped SiGe/Si epitaixal layer

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Construction of a photothermal energy storage aerogel for solar-driven continuous and efficient remediation of high viscosity oil spill by Enteromorpha prolifera biochar combined with phase change materials

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Nanostructured PMMA/Fe3O4 composite fibers obtained by electrospinning

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DFT study of SiC nanowires with superficial Na atoms as potential anodic material

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Synthesis of High-performance Water-removing Separator Based on Surface Nanologized MOFs Used in High-voltage Lithium-ion Batteries

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Enhancing the osseointegration and antibacterial performance of titanium implant-abutment through ZrO2 coating and Ta/Ag ions co-implantation

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Design, preparation, and synergistic mechanism of reactive multilayer hybridized moisture barrier films of hydrophilic porous polymer materials

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CMAS resistance of $(Dy_{0.2}Ho_{0.2}Er_{0.2}Tm_{0.2}Lu_{0.2})_2Hf_2O_7$ in-serviced as top TBC of HfO_2-Si/$Yb_2Si_2O_7$/Yb_2SiO_5 EBCs system

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Efficient adsorption of tetracycline from aqueous solution using copper and zinc oxides modified porous boron nitride adsorbent

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Ab-initio study on lithium polysulfides anchored to doped germanene for Li-S batteries

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Microstructure evolution and water oxygen corrosion behavior of Hf-modified Si bond coating for SiC_f/SiC composites

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Titanium carbide/epoxy resin photothermal superhydrophobic surface for anti/de-icing

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