

Journal of the International Society of Electrochemistry

Electrochiimica Acta

Available online at www.sciencedirect.com

SciVerse ScienceDirect



VOLUME 88 2013

Selvaraj Baskar, Chen-Wei Liao, Jen-Lin Chang and Jyh-Myng Zen	1	Electrochemical synthesis of electroactive poly(melamine) with mechanistic explanation and its applicability to functionalize carbon surface to prepare nanotube-nanoparticles hybrid
M. Mouanga, M. Puiggali, B. Tribollet, V. Vivier, N. Pébère and O. Devos	6	Galvanic corrosion between zinc and carbon steel investigated by local electrochemical impedance spectroscopy
Weilu Liu, Cong Li, Liu Tang, Aiying Tong, Yue Gu, Rui Cai, Li Zhang and Zhiquan Zhang	15	Nanopore array derived from 1-cysteine oxide/gold hybrids: Enhanced sensing platform for hydroquinone and catechol determination
Bhim Bali Prasad and Indu Pandey	24	Electrochemically imprinted molecular recognition sites on multiwalled carbon-nanotubes/pencil graphite electrode surface for enantioselective detection of D- and L-aspartic acid
Chen-Yu Chou, Chun-Ting Li, Chuan-Pei Lee, Lu-Yin Lin, Min-Hsin Yeh, R. Vittal and Kuo-Chuan Ho	35	ZnO nanowire/nanoparticles composite films for the photoanodes of quantum dot-sensitized solar cells
Yue-Yong Yang, Quan-Xin Zhang, Tian-Zi Wang, Li-Feng Zhu, Xiao-Ming Huang, Yi-Duo Zhang, Xing Hu, Dong-Mei Li, Yan-Hong Luo and Qing-Bo Meng	44	Novel tandem structure employing mesh-structured Cu_2S counter electrode for enhanced performance of quantum dot-sensitized solar cells
Subramaniam Jayabal and Ramasamy Ramaraj	51	Synthesis of core/shell Au/Ag nanorods embedded in functionalized silicate sol-gel matrix and their applications in electrochemical sensors
Fugang Xu, Miao Deng, Gongyu Li, Shouhui Chen and Li Wang	59	Electrochemical behavior of cuprous oxide-reduced graphene oxide nanocom- posites and their application in nonenzymatic hydrogen peroxide sensing
Leandro Gerbino, Ana M. Baruzzi and Rodrigo A. Iglesias	66	Catalytic EC' reaction at a thin film modified electrode
Yuxia Xu, Zhensheng Hong, Lunchao Xia, Jie Yang and Mingdeng Wei	74	One step sol-gel synthesis of Li ₂ ZnTi ₃ O ₈ /C nanocomposite with enhanced lithium-ion storage properties
Ting Chen, Hui Huang, Houyi Ma and Delong Kong	79	Effects of surface morphology of nanostructured \ensuremath{PbO}_2 thin films on their electrochemical properties
Jason A. Bennett, Christopher D. Wheeler, Karissa L. Sterling and Andrea M. Chiodo	86	Exploring dicyano-ferriprotoporphyrin as a novel electrocatalytic material for selective ${ m H}_2{ m S}$ gasotransmitter detection
Yong X. Gan and Lihua Zhang	94	Mechanoelectric response of lead titanate nanorod array prepared by electrochemical approach
Huayu Xiong, Xiuhua Zhang, Binghai Dong, Hongbing Lu, Li Zhao, Li Wan, Guotian Dai and Shimin Wang	100	The preparation of carbon dots/ionic liquids-based electrolytes and their applications in quasi-solid-state dye-sensitized solar cells
Jun Zhang, Jiang-ping Tu, Gao-hui Du, Zi-min Dong, Qing-mei Su, Dong Xie and Xiu-li Wang	107	Pt supported self-assembled nest-like-porous WO_3 hierarchical microspheres as electrocatalyst for methanol oxidation
G.B. Liu, H. Liu and Y.F. Sні	112	The synthesis and electrochemical properties of $x \text{Li}_2 \text{MnO}_3 - (1 - x) \text{MO}_2$ (M = $\text{Mn}_{1/3} \text{Ni}_{1/3} \text{Fe}_{1/3}$) via co-precipitation method
Shaohua Zheng, Ying Huang and Guonan Chen	117	Fabrication and electrochemistry of graphite/poly(methylmethacrylate) composite electrode for <i>o-sec</i> -butylphenol determination
Jae-Hun Kim, Kai Zhu, Jin Young Kim and Arthur J. Frank	123	Tailoring oriented ${\rm TiO}_2$ nanotube morphology for improved Li storage kinetics
Abdel Salam Hamdy, Feras Alfosail and Zuhair Gasem	129	Electrochemical behavior of a discontinuously A6092/SiC/17.5p metal matrix composite in chloride containing solution
Yongmei Wu, Wenju Xu, Yan Wang, Yali Yuan and Ruo Yuan	135	Silver–graphene oxide nanocomposites as redox probes for electrochemical determination of $\alpha1\text{-fetoprotein}$
D.H. GE, M.C. WANG, W.J. LIU, S. QIN, P.L. YAN and J.W. JIAO	141	Formation of macro-meso-microporous multilayer structures
Libo Li, Jiajia Wang, Peixia Yang, Shaowen Guo, Heng Wang, Xiuchun Yang, Xuwei Ma, Shuo Yang and Baohua Wu	147	Preparation and characterization of gel polymer electrolytes containing N-butyl-N-methylpyrrolidinium bis(trifluoromethanesulfonyl) imide ionic liquid for lithium ion batteries
BIUCK HABIBI and ELAHEH DADASHPOUR	157	Electrooxidation of 2-propanol and 2-butanol on the Pt-Ni alloy nanoparticles in acidic media
JUSTYNA JOŃCA, WILLIAM GIRAUD, CAROLE BARUS, MAURICE COMTAT, NICOLAS STRIEBIG,	165	Reagentless and silicate interference free electrochemical phosphate determination in seawater

Danièle Thouron and Véronique Garçon

KKOCHNIM OH, IHSAN-UL-HAQ TOOR, SOOHOON AHN and HyukSang Kwon	170	Effects of Cu on the passive film stability of Fe-20Cr- x Cu (x = 0, 2, 4 wt.%) alloys in H_2SO_4 solution
BIN Mu, PENG LIU and Aiqin Wang	177	Synthesis of polyaniline/carbon black hybrid hollow microspheres by layer-by-layer assembly used as electrode materials for supercapacitors
JIANYU CAO, ZHUANXIA CHEN, JUAN XU, WENCHANG WANG and ZHIDONG CHEN	184	Mesoporous carbon synthesized from dual colloidal silica/block copolymer template approach as the support of platinum nanoparticles for direct methanol fuel cells
Chao Gao, NanFang Wang, Sui Peng, SuQin Liu, Ying Lei, XinXing Liang, ShanShan Zeng and HuiFang Zi	193	Influence of Fenton's reagent treatment on electrochemical properties of graphite felt for all vanadium redox flow battery
Peixia Yang, Yanbiao Zhao, Caina Su, Kaijian Yang, Bo Yan and Maozhong An	203	Electrodeposition of Cu–Li alloy from room temperature ionic liquid 1-butyl-3-methylimidazolium tetrafluoroborate
Jiao Yin, Li Qi and Hongyu Wang	208	Anti-freezing aqueous electrolytes for electric double-layer capacitors
Thayane C.M. Nepel, Pietro P. Lopes, Valdecir A. Paganin and Edson A. Ticianelli	217	CO tolerance of proton exchange membrane fuel cells with Pt/C and PtMo/C anodes operating at high temperatures: A mass spectrometry investigation
Hao Zheng, Chuanqi Feng, Seung-Joo Kim, Shengyu Yin, Huimin Wu, Shiquan Wang and Shengbiao Li	225	Synthesis and electrochemical properties of $\mathrm{KMn_8O_{16}}$ nanorods for Lithium ion batteries
ZHENBO WEI, JUN WANG and XI ZHANG	231	Monitoring of quality and storage time of unsealed pasteurized milk by voltammetric electronic tongue
Maayan Cohen Sagiv, Noam Eliaz and Eliezer Gileadi	240	Incorporation of iridium into electrodeposited rhenium-nickel alloys
Shunichi Uchiyama, Hiroaki Matsuura and Yosuke Yamawaki	251	Observation of hydrogen oxidation wave using glassy carbon electrode fabricated by stepwise electrolyses in ammonium carbamate aqueous solution and hydrochloric acid
S. Tutashkonko, A. Boucherif, T. Nychyporuk, A. Kaminski-Cachopo, R. Arès, M. Lemiti and V. Aimez	256	Mesoporous Germanium formed by bipolar electrochemical etching
Kai Pan, Youzhen Dong, Wei Zhou, Guofeng Wang, Qingjiang Pan, Yu Yuan, Xiaohuan Miao and Guohui Tian	263	${ m TiO_2}$ -B nanobelt/anatase ${ m TiO_2}$ nanoparticle heterophase nanostructure fabricated by layer-by-layer assembly for high-efficiency dye-sensitized solar cells
Kishan B. Fadadu and Saurabh S. Soni	270	Spectral sensitization of ${\rm TiO_2}$ by new hemicyanine dyes in dye solar cell yielding enhanced photovoltage: Probing chain length effect on performance
Kirsi Yliniemi, David Wragg, Benjamin P. Wilson, H. Neil McMurray, David A. Worsley, Patrik Schmuki and Kyösti Kontturi	278	Formation of Pt/Pb nanoparticles by electrodeposition and redox replacement cycles on fluorine doped tin oxide glass
S.M. Zhang, J.X. Zhang, S.J. Xu, X.J. Yuan and B.C. He	287	Li ion diffusivity and electrochemical properties of ${\sf FePO_4}$ nanoparticles acted directly as cathode materials in lithium ion rechargeable batteries
Yuyu Bu, Zhuoyuan Chen, Jianqiang Yu and Weibing Li	294	A novel application of $g-C_3N_4$ thin film in photoelectrochemical anticorrosion
Hadi Hosseini, Hamid Ahmar, Ali Dehghani, Akbar Bagheri, Ali Reza Fakhari and Mostafa M. Amini	301	${\rm Au\text{-}SH\text{-}SiO_2}$ nanoparticles supported on metal-organic framework (Au-SH-SiO_2@Cu-MOF) as a sensor for electrocatalytic oxidation and determination of hydrazine
A. Srinivasan, P. Ranjani and N. Rajendran	310	Electrochemical polymerization of pyrrole over AZ31 Mg alloy for biomedical applications
Shanlin Wu, Chunyang Jia, Xingqi Fu, Xiaolong Weng, Jiaqiang Zhang and Longjiang Deng	322	A novel electrochromic and broad infrared emissivity modulation film based on the copolymer of aniline and o-anisidine
F. Norouzi Afshar, J.H.W. de Wit, H. Terryn and J.M.C. Mol	330	Scanning Kelvin probe force microscopy as a means of predicting the electro- chemical characteristics of the surface of a modified AA4xxx/AA3xxx (Al alloys) brazing sheet
Patrizia Bocchetta, Monica Santamaria and Francesco Di Quarto	340	One-step electrochemical synthesis and physico-chemical characterization of CdSe nanotubes
Afshin Pendashteh, Mir Fazlollah Mousavi and Mohammad Safi Rahmanifar	347	Fabrication of anchored copper oxide nanoparticles on graphene oxide nanosheets via an electrostatic coprecipitation and its application as supercapacitor
L.A. Estudillo-Wong, G. Santillán-Díaz, E.M. Arce-Estrada, N. Alonso-Vante and A. Manzo-Robledo	358	Electroreduction of $\mathrm{NO}_{\mathrm{x}}^z$ species in alkaline medium on Pt nanoparticles

O. Doche, F. Bauer and S. Tardu	365	Direct numerical simulations of electrochemical reactions in turbulent flow
L.P. Forsley, P.A. Mosier-Boss, P.J. McDaniel and F.E. Gordon	373	Charged particle detection in the Pd/D system: CR-39 SSNTD vs. real-time measurement of charged particle stimulated Pd K shell X-rays
Maja D. Obradović and Snežana Lj. Gojković	384	HCOOH oxidation on thin Pd layers on Au: Self-poisoning by the subsequent reaction of the reaction product
ZHENGWEI XIE, PING HE, LICHENG DU, FAQIN DONG, KE DAI AND TINGHONG ZHANG	390	Comparison of four nickel-based electrodes for hydrogen evolution reaction
Liu Wei-Qing, Liang Zhong-Guan, Kou Dong-Xing, Hu Lin-Hua and Dai Song-Yuan	395	Wide frequency range diagnostic impedance behavior of the multiple interfaces charge transport and transfer processes in dye-sensitized solar cells
K.D. O'Neil, A. Smith, T.A. Forristal and O.A. Semenikhin	404	The effect of cycling on the nanoscale morphology and redox properties of poly[2,2'-bithiophene]
Hui Bi, Fuqiang Huang, Yufeng Tang, Zhanqiang Liu, Tianquan Lin, Jian Chen and Wei Zhao	414	Study of LiFePO $_4$ cathode modified by graphene sheets for high-performance lithium ion batteries
Lu-Yin Lin, Min-Hsin Yeh, Chuan-Pei Lee, Chen-Yu Chou and Kuo-Chuan Ho	421	Flexible dye-sensitized solar cells with one-dimensional ZnO nanorods as electron collection centers in photoanodes
Wen-feng Mao, Ji Yan, Hui Xie, Zhi-yuan Tang and Qiang Xu	429	The interval high rate discharge behavior of ${\rm Li_3V_2(PO_4)_3/C}$ cathode based on in situ polymerization method
Wilman Septina, Shigeru Ikeda, Akio Kyoraiseki, Takashi Harada and Michio Matsumura	436	Single-step electrodeposition of a microcrystalline $\mathrm{Cu_2ZnSnSe_4}$ thin film with a kesterite structure
Zhenwei Zhang, Liyun Cao, Jianfeng Huang, Dunqiang Wang, Yan Meng and Yingjun Cai	443	Temperature effect on spinel $\mathrm{Li_4Ti_5O_{12}}$ as anode materials for lithium ion batteries
Georgiana Bolat, Javier Izquierdo, Juan J. Santana, Daniel Mareci and Ricardo M. Souto	447	Electrochemical characterization of ZrTi alloys for biomedical applications
Hao Tang, Yong-De Yan, Mi-Lin Zhang, Xing Li, Ying Huang, Yan-Lu Xu, Yun Xue, Wei Han and Zhi-Jian Zhang	457	$AlCl_3$ -aided extraction of praseodymium from Pr_6O_{11} in LiCl-KCl eutectic melts
Seyed Naser Azizi, Shahram Ghasemi and Elham Chiani	463	Nickel/mesoporous silica (SBA-15) modified electrode: An effective porous material for electrooxidation of methanol
C.M. Costa, J. Nunes-Pereira, L.C. Rodrigues, M.M. Silva, J.L. Gomez Ribelles and S. Lanceros-Méndez	473	Novel poly(vinylidene fluoride-trifluoroethylene)/poly(ethylene oxide) blends for battery separators in lithium-ion applications
Marco Favaro, Lorenzo Perini, Stefano Agnoli, Christian Durante, Gaetano Granozzi and Armando Gennaro	477	Electrochemical behavior of N and Ar implanted highly oriented pyrolytic graphite substrates and activity toward oxygen reduction reaction
N. Kircheva, S. Genies, C. Chabrol and PX. Thivel	488	Evaluation of acoustic emission as a suitable tool for aging characterization of LiAl/LiMnO $_{\rm 2}$ cell
SARWAN S. SANDHU and JOSEPH P. FELLNER	495	Model formulation and simulation of a solid-state lithium-based cell
CHANGZHOU YUAN, LINRUI HOU, YULONG FENG, SHENGLIN XIONG and XIAOGANG ZHANG	507	Sacrificial template synthesis of short mesoporous NiO nanotubes and their application in electrochemical capacitors
Heiki Erikson, Madis Liik, Ave Sarapuu, Jekaterina Kozlova, Väino Sammelselg and Kaido Tammeveski	513	Oxygen reduction on electrodeposited Pd coatings on glassy carbon
Yan Liu, Yao Zhang, Guoheng Ma, Zan Wang, Kaiyu Liu and Hongtao Liu	519	Ethylene glycol reduced graphene oxide/polypyrrole composite for supercapacitor
Qiangqiang Tan, Yuxing Xu, Jun Yang, Linlin Qiu, Yun Chen and Xiaoxiao Chen	526	Preparation and electrochemical properties of the ternary nanocomposite of polyaniline/activated carbon/TiO ₂ nanowires for supercapacitors
Veronica Augustyn and Bruce Dunn	530	Low-potential lithium-ion reactivity of vanadium oxide aerogels
Binh Tran, Isaiah O. Oladeji, Zedong Wang, Jean Calderon, Guangyu Chai, David Atherton and Lei Zhai	536	Adhesive PEG-based binder for aqueous fabrication of thick $\mathrm{Li_4Ti_5O_{12}}$ electrode
Marzieh Eslami, Mansoor Namazian and Hamid R. Zare	543	Electrochemical behavior of 3,4-dihydroxyphenylalanine in aqueous solution
Shohei Suzuki, Hiroki Muroyama, Toshiaki Matsui and Koichi Eguchi	552	Influence of CO_2 dissolution into anion exchange membrane on fuel cell performance
Lili Cui, Tao Pu, Ying Liu and Xingquan He	559	Layer-by-layer construction of graphene/cobalt phthalocyanine composite film on activated GCE for application as a nitrite sensor

565	Graphene ribbon-supported Pd nanoparticles as highly durable, efficient electrocatalysts for formic acid oxidation
571	A segmented cell approach for studying the effects of serpentine flow field parameters on PEMFC current distribution
580	Effects of three-dimensional cathode microstructure on the performance of lithium-ion battery cathodes
589	Catalysis of hydrogen evolution on different $Pd/Au(1\ 1\ 1)$ nanostructures in alkaline solution
597	Enhanced electrical capacitance of porous carbon nanofibers derived from polyacrylonitrile and boron trioxide
604	Structure-property-activity correlations of Pt-bimetallic nanoparticles: A theoretical study
614	Photoassisted electrochemical recirculation system with boron-doped diamond anode and carbon nanotubes containing cathode for degradation of a model azo dye
621	Self-assembled thiolate functionalized gold nanoparticles template toward tailoring the morphology of electrochemically deposited silver nanostructure
632	Electrochemical performance comparison of LiFePO $_4$ supported by various carbon materials
639	Effect of organic dye, the concentration and dipping time of the organic dye N719 on the photovoltaic performance of dye-sensitized ZnO solar cell prepared by ammonia-assisted hydrolysis technique
644	Experimental characterization and modeling of the electrochemical reduction of CO_2 in solid oxide electrolysis cells
654	Unusual electrochemical behavior of Ru–Cr binary oxide-based aqueous symmetric supercapacitors in KOH solution
659	Surface states of wet chemically etched n-Si(1 1 1):H surfaces
664	Cobalt nanomountain array supported silicon film anode for high-performance lithium ion batteries
671	Enhanced cycling stability of Li[Li $_{0.2}$ Mn $_{0.54}$ Ni $_{0.13}$ Co $_{0.13}$]O $_2$ by surface modification of MgO with melting impregnation method
680	Spontaneous arylation of activated carbon from aminobenzene organic acids as source of diazonium ions in mild conditions
688	Crystallographic dependence of 4-dimethylaminopyridine electrosorption on gold
697	Oxygen reduction reaction activity of nitrogen-doped titanium oxide in acid media
708	Graphene oxide/nickel oxide modified glassy carbon electrode for supercapacitor and nonenzymatic glucose sensor
713	Antimony film electrode for stripping voltammetric measurement of $Hg(II)$ in the presence of $Cu(II)$
718	Nickel-ion detection on a boron-doped diamond electrode in acidic media
725	Solution casting Nafion/polytetrafluoroethylene membrane for vanadium redox flow battery application
735	Subsurface diffusion of oxide electrolyte decomposition products in metal fluoride nanocomposite electrodes
745	(Li, Al)-co-doped spinel, ${\rm Li}({\rm Li_{0.1}Al_{0.1}Mn_{1.8}}){\rm O_4}$ as high performance cathode for lithium ion batteries
756	Chemical mixing in molten-salt for preparation of high-performance spinel lithium manganese oxides: Duplication of morphology from nanostructured MnO_2 precursors to targeting materials
766	Three-dimensional network current collectors supported Si nanowires for lithium-ion battery applications
	571 580 589 597 604 614 621 632 639 644 654 659 664 671 680 688 697 708 713 718 725 735 745 756

Ramasamy Palaniappan and Gerardine G. Botte	772	Efficacy of potassium poly(acrylate) gel electrolyte as a substitute to aqueous electrolytes for alkaline ammonia electrolysis
Huichao He, Peng Xiao, Ming Zhou, Feila Liu, Shujuan Yu, Lei Qiao and Yunhuai Zhang	782	PtNi alloy nanoparticles supported on carbon-doped ${\rm TiO_2}$ nanotube arrays for photo-assisted methanol oxidation
Gang Cheng, Qiang Xu, Fei Ding, Lin Sang, Xingjiang Liu and Dianxue Cao	790	Electrochemical behavior of aluminum in Grignard reagents/THF electrolytic solutions for rechargeable magnesium batteries
B. Bouchaud, J. Balmain, G. Bonnet and F. Pedraza	798	Correlations between electrochemical mechanisms and growth of ceria based coatings onto nickel substrates
Naoki Inoue, Makoto Uchida, Masahiro Watanabe and Hiroyuki Uchida	807	Experimental analyses of low humidity operation properties of SiO ₂ -containing catalyst layers for polymer electrolyte fuel cells
Nana Amponsah Kyeremateng, Chrystelle Lebouin, Philippe Knauth and Thierry Djenizian	814	The electrochemical behaviour of ${\rm TiO_2}$ nanotubes with ${\rm Co_3O_4}$ or NiO submicron particles: Composite anode materials for Li-ion micro batteries
O. Guseva, J.A. DeRose and P. Schmutz	821	Modelling the early stage time dependence of localised corrosion in aluminium alloys
Jonathan Mbah, Kiara Moorer, Leonardo Pacheco-Londoño, Samuel Hernandez-Rivera and Gabriel Cruz	832	Zero valent silver-based electrode for detection of 2,4,-dinitrotoluene in aqueous media
Adriana Vulcu, Camelia Grosan, Liana Maria Muresan, Stela Pruneanu and Liliana Olenic	839	Modified gold electrodes based on thiocytosine/guanine-gold nanoparticles for uric and ascorbic acid determination
Jie Wang, Yingke Zhou, Bin Xiong, Yuanyuan Zhao, Xiaojian Huang and Zongping Shao	847	Fast lithium-ion insertion of ${\rm TiO_2}$ nanotube and graphene composites
Shamsa Munir, Afzal Shah, Abdur Rauf, Amin Badshah, Suzanne K. Lunsford, Zia-ur-Rehman, Hidayat Hussain and Gul Shahzada Khan	858	Redox behavior of a novel menadiol derivative at glassy carbon electrode
Jiantie Xu, Shu-Lei Chou, Maxim Avdeev, Matthew Sale, Hua-Kun Liu and Shi-Xue Dou	865	Lithium rich and deficient effects in Li_xCoPO_4 (x = 0.90, 0.95, 1, 1.05) as cathode material for lithium-ion batteries
Leonard Molero, Mario Faundez, María Angélica del Valle, Rodrigo del Río and Francisco Armijo	871	Electrochemistry of methimazole on fluorine-doped tin oxide electrodes and its square-wave voltammetric determination in pharmaceutical formulations
Mathieu Etienne, Sébastien Lhenry, Renaud Cornut and Christine Lefrou	877	Optimization of the shearforce signal for scanning electrochemical microscopy and application for kinetic analysis
Shuo Duan, Xin Zhang, Shuai Xu and Changli Zhou	885	Simultaneous determination of aminophenol isomers based on functionalized SBA-15 mesoporous silica modified carbon paste electrode
	Discus	sion Articles
N.B. Luque and W. Schmickler	892	Are the reactions of quinones on graphite adiabatic?
Christopher Batchelor-McAuley, Eduardo Laborda, Martin C. Henstridge, Rita Nissim and Richard G. Compton	895	Reply to comments contained in "Are the reactions of quinones on graphite adiabatic?", by N.B. Luque, W. Schmickler [Electrochim. Acta xx (2012) yyy]
	ľ	Recent SI
	II	Future SI