



Volume 135, 20 July 2014

ISSN 0013-4686

Journal of the International Society of Electrochemistry

Electrochimica Acta

Available online at www.sciencedirect.com

ScienceDirect



PALANI BARATHI and ANNAMALAI SENTHIL KUMAR	1	Quercetin tethered pristine-multiwalled carbon nanotube modified glassy carbon electrode as an efficient electrochemical detector for flow injection analysis of hydrazine in cigarette tobacco samples
KHALID ZAKARIA and PAUL ANDREW CHRISTENSEN	11	The Use of Ni/Sb-SnO ₂ -based Membrane Electrode Assembly for Electrochemical Generation of Ozone and the Decolourisation of Reactive Blue 50 Dye Solutions
RAQUEL OLIVEIRA, DULCE GERALDO and FÁTIMA BENTO	19	Electrogenerated HO radical reactions: the role of competing reactions on the degradation kinetics of hydroxy-containing aromatic compounds
KYUNG-JIN KIM, TAEK-SOO LEE, HYUNG-GIUN KIM, SUNG-HWAN LIM and SUNG-MAN LEE	27	A hard carbon/microcrystalline graphite/carbon composite with a core-shell structure as novel anode materials for lithium-ion batteries
LIANG ZHAN, SUQING WANG, LIANG-XIN DING, ZHONG LI and HAIHUI WANG	35	Grass-like Co ₃ O ₄ nanowire arrays anode with high rate capability and excellent cycling stability for lithium-ion batteries
A. ROBERT HILLMAN, KARL S. RYDER, CHRISTOPHER J. ZALESKI, VIRGINIA FERREIRA, CHRISTOPHER A. BEASLEY and ERIC VIEIL	42	Application of the combined electrochemical quartz crystal microbalance and probe beam deflection technique in deep eutectic solvents
S. MEENAKSHI, K.G. NISHANTH, P. SRIDHAR AND S. PITCHUMANI	52	Spillover effect induced Pt-TiO ₂ /C as ethanol tolerant oxygen reduction reaction catalyst for direct ethanol fuel cells
TAKAYUKI YAMAMOTO, TOSHIYUKI NOHIRA, RIKI HAGIWARA, ATSUSHI FUKUNAGA, SHOICHIRO SAKAI, KOJI NITTA AND SHINJI INAZAWA	60	Improved cyclability of Sn-Cu film electrode for sodium secondary battery using inorganic ionic liquid electrolyte
PHENGXAY DEEVANHXAY, TAKASHI SASABE, KATSUNORI MINAMI, SHOHJI TSUSHIMA and SHUICHIRO HIRAI	68	Oblique Soft X-Ray Tomography as a Non-Destructive Method for Morphology Diagnostics in Degradation of Proton-Exchange Membrane Fuel Cell
HUALI ZHU, TIAN XIE, ZHAOYONG CHEN, LINGJUN LI, MING XU, WENHUA WANG, YANQING LAI and JIE LI	77	The impact of vanadium substitution on the structure and electrochemical performance of LiNi _{0.5} Co _{0.2} Mn _{0.3} O ₂
HIDEAKI SASAKI and MASAFUMI MAEDA	86	Electrochemical Measurements on Enhanced Dissolution of Pd from Pd-Zn Alloys in Hydrochloric Acid
JIAN XIE, GUOQING WANG, YING HUO, SHICHAO ZHANG, GAOSHAO CAO and XINBING ZHAO	94	Nanostructured silicon spheres prepared by a controllable magnesiothermic reduction as anode for lithium ion batteries
WEIXIA YAN, LIANGYONG WANG, WEILI LIU AND ZHITANG SONG	101	Role of the Lysine as a Complexing Agent in Ge ₂ Sb ₂ Te ₅ Chemical Mechanical PolishingSlurries
BINGBIN WU, XIAOYU JIANG, LIFEN XIAO, WENHUA ZHANG, JIAXIN PAN, XINPING AI, HANXI YANG and YULIANG CAO	108	Enhanced Cycling Stability of Sulfur Cathode Surface-Modified by Poly(N-methylpyrrole)
ALONSO GAMERO-QUIJANO, FRANCISCO HUERTA, DAVID SALINAS-TORRES, EMILIA MORALLÓN and FRANCISCO MONTILLA	114	Enhancement of the Electrochemical Performance of SWCNT dispersed in a Silica Sol-gel Matrix by Reactive Insertion of a Conducting Polymer
J.F. CABRITA, V.C. FERREIRA and O.C. MONTEIRO	121	Titanate nanofibers sensitized with nanocrystalline Bi ₂ S ₃ as new electrocatalytic materials for ascorbic acid sensor applications
DAN LIU, WEIWEI LEI, SI QIN and YING CHEN	128	Large-scale production of h-In ₂ O ₃ /carbon nanocomposites with enhanced lithium storage properties
ALBERTO BATTISTEL, MU FAN, JELENA STOJADINOVIĆ and FABIO LA MANTIA	133	Analysis and mitigation of the artefacts in electrochemical impedance spectroscopy due to three-electrode geometry
BO ZHAO, MENGYUAN CHEN, QINGXIANG GUO and YAO FU	139	Electrocatalytic hydrogenation of furfural to furfuryl alcohol using platinum supported on activated carbon fibers
SHOU-HENG LIU and JYUN-REN WU	147	Influence of nitrogen and iron precursors on the synthesis of FeN _x /carbons electrocatalysts toward oxygen reduction reaction in acid solution
GUANGMING YANG, FAQIONG ZHAO and BAIZHAO ZENG	154	Magnetic entrapment for fast and sensitive determination of metronidazole with a novel magnet-controlled glassy carbon electrode
RONG GUO, WENBO YUE, YIMING AN, YU REN and XI YAN	161	Graphene-encapsulated porous carbon-ZnO composites as high-performance anode materials for Li-ion batteries
LIZHI YUAN, LUHUA JIANG, JING LIU, ZHANGXUN XIA, SULI WANG and GONGQUAN SUN	168	Facile synthesis of silver nanoparticles supported on three dimensional graphene oxide/carbon black composite and its application for oxygen reduction reaction
ZHENGQUANG ZOU, HAO CHENG, JINYUN HE, FEI LONG, YI WU, ZEYU YAN and HONGXU CHEN	175	V ₆ O ₁₃ Nanosheets Synthesized From Ethanol-Aqueous Solutions as High Energy Cathode Material for Lithium-Ion Batteries
CHANDRASEKARAN RAMASAMY, JESÚS PALMA DEL VAL and MARC ANDERSON	181	An electrochemical cell study on polyvinylpyrrolidone aqueous gel with glycol addition for capacitor applications

CHEN YUANYUAN and TU YIFENG	187	The Enhanced Electrochemiluminescence of Luminol by Resonance Energy Transfer with Solid-phase CdTe Quantum Dots
SU-JIN HA, JONG HYEOK PARK and JUN HYUK MOON	192	Quasi-solid-state Dye-sensitized Solar Cells with Macropore-containing Hierarchical Electrodes
W. YUAN, H.Z. ZHANG, Q. LIU, G.R. LI and X.P. GAO	199	Surface modification of $\text{Li}(\text{Li}_{0.17}\text{Ni}_{0.2}\text{Co}_{0.05}\text{Mn}_{0.58})\text{O}_2$ with CeO_2 as cathode material for Li-ion batteries
M.C. ZAFRA, P. LAVELA, G. RASINES, C. MACÍAS, J.L. TIRADO and C.O. ANIA	208	A novel method for metal oxide deposition on carbon aerogels with potential application in capacitive deionization of saline water
FEI XU, CHENGYONG LIU, WENFANG FENG, JIN NIE, HONG LI, XUEJIE HUANG and ZHIBIN ZHOU	217	Molten salt of lithium bis(fluorosulfonyl)imide (LiFSI)-potassium bis(fluorosulfonyl)imide (KFSI) as electrolyte for the natural graphite/ LiFePO_4 lithium-ion cell
LIANJUN LIU, CUNYU ZHAO, HUILEI ZHAO, QIANYI ZHANG and YING LI	224	ZnO-CoO Nanoparticles Encapsulated in 3D Porous Carbon Microspheres for High-performance Lithium-Ion Battery Anodes
S. SASIKALA, S. MEENAKSHI, S.D. BHAT and A.K. SAHU	232	Functionalized Bentonite clay-sPEEK based composite membranes for direct methanol fuel cells
KAI WANG, YANTAO SHI, WEI GUO, XIAOQIANG YU and TINGLI MA	242	Zn_2SnO_4 -Based Dye-Sensitized Solar Cells: Insight into Dye-Selectivity and Photoelectric Behaviors
ALLISON M. ENGSTROM, EUNHEE LIM, JEFFREY A. REIMER and ELTON J. CAIRNS	249	Anodic Oxidation of CO_{ads} Derived from Methanol on Pt Electrocatalysts Linked to the Bonding Type and Adsorption Site
HIROSUKE TATSUMI and SHOGO TANAKA	255	Development of dropping carbon fluid electrodes for polarography
RAJKUMAR DEVAENATHIPATHY, VEERAPPAN MANI, SHEN-MING CHEN, DANEIAL ARULRAJ and V.S. VASANTHA	260	Highly stable and sensitive amperometric sensor for the determination of trace level hydrazine at cross linked pectin stabilized gold nanoparticles decorated graphene nanosheets
JIA LIU, KE YE, KUI CHENG, GUILING WANG, JINLING YIN and DIANXUE CAO	270	The catalytic effect of CeO_2 for electrochemical oxidation of graphite in molten carbonate
ZHUOYIN PENG, YUELI LIU, YINGHAN ZHAO, KEQIANG CHEN, YUQING CHENG and WEN CHEN	276	Incorporation of the TiO_2 nanowire arrays photoanode and Cu_2S nanorod arrays counter electrode on the photovoltaic performance of quantum dot sensitized solar cells
RU ZHOU, QIFENG ZHANG, EVAN UCHAKER, LIN YANG, NAIQIANG YIN, YONGHU CHEN, MIN YIN and GUOZHONG CAO	284	Photoanodes with mesoporous TiO_2 beads and nanoparticles for enhanced performance of CdS/CdSe quantum dot co-sensitized solar cells
X. CHENG, X.-T. THAN, M. PINAULT, M. MAYNE, C. REYNAUD, J. VIGNERON, A. ETCHEBERRY and H. PEREZ	293	Determination of selectivity and specific area related to oxygen reduction reaction as a function of catalyst loading on non-noble metal based electrocatalyst porous electrodes: an example on nitrogen doped carbon nanotube
MARIA ALEJANDRA LUNA, FERNANDO MOYANO, LEONIDES SERENO and FABIANA D'ERAMO	301	Spectroscopic and electrochemical studies of high-valent water soluble manganese porphyrine. Electrocatalytic water oxidation
HOUBIN LIU, CUI MIAO, YAN MENG, QIANG XU, XINHE ZHANG and ZHIYUAN TANG	311	Effect of graphene nanosheets content on the morphology and electrochemical performance of LiFePO_4 particles in lithium ion batteries
EMAD A. KHUDAISH, MOHAMMED AL-HINAAI, SALIM AL-HARTHY and KARTHIK LAXMAN	319	Electrochemical oxidation of chlorpheniramine at polytyramine film doped with ruthenium (II) complex: Measurement, kinetic and thermodynamic studies
XING LI, YONG-DE YAN, MI-LIN ZHANG, HAO TANG, DE-BIN JI, WEI HAN, YUN XUE and ZHI-JIAN ZHANG	327	Electrochemical reduction of Tm on Mg electrodes and co-reduction of Mg, Li and Tm on W electrodes
SHUDI MIN, CHONGJUN ZHAO, GUORONG CHEN, ZHUOMIN ZHANG and XIUZHEN QIAN	336	One-pot Hydrothermal Synthesis of 3D Flower-like $\text{RGO}/\text{Co}_3\text{O}_4/\text{Ni}(\text{OH})_2$ Composite Film on Nickel Foam for High-performance Supercapacitors
GUOQIANG ZHAN, LIXIA ZHANG, YONG TAO, YUJIAN WANG, XIAOYU ZHU and DAPING LI	345	Anodic ammonia oxidation to nitrogen gas catalyzed by mixed biofilms in bioelectrochemical systems
PATRICK MARCEL SEUMO TCHEKWAGEP, CHARLES PÉGUY NANSEU-NJIKI, EMMANUEL NGAMENI, THOMAS ARNEBRANT and TAUTGIRDAS RUZGAS	351	Quantification of BSA concentration by using Ag electrochemistry in chloride solution: extension of the linear range
W. MCSWEENEY, O. LOTTY, C. GLYNN, H. GEANEY, J.D. HOLMES and C. O'DWYER	356	The influence of carrier density and doping type on lithium insertion and extraction processes at silicon surfaces
S. TANT, S. ROSINI, P.-X. THIVEL, F. DRUART, A. RAKOTONDRAINIBE, T. GENESTON and Y. BULTEL	368	An algorithm for diagnosis of proton exchange membrane fuel cells by electrochemical impedance spectroscopy
LI WANG, YAOLIN ZHENG, SHUILIANG CHEN, YIHAN YE, FUGANG XU, HONGLIANG TAN, ZHUANG LI, HAOQING HOU and YONGHAI SONG	380	Three-Dimensional Kenaf Stem-Derived Porous Carbon/ MnO_2 for High-Performance Supercapacitors
SYLVIA AYU PRADANAWATI, FU-MING WANG and JOHN RICK	388	In Situ formation of pentafluorophosphate benzimidazole anion stabilizes high-temperature performance of lithium-ion batteries

AHMAD UMAR, RAFIQ AHMAD, S.W. HWANG, S.H. KIM, A. AL-HAJRY and Y.B. HAHN	396	Development of Highly Sensitive and Selective Cholesterol Biosensor Based on Cholesterol Oxidase Co-Immobilized with α -Fe ₂ O ₃ Micro-Pine Shaped Hierarchical Structures
J.M. SIEBEN, A. ANSÓN-CASAOS, F. MONTILLA, M.T. MARTÍNEZ and E. MORALLÓN	404	Electrochemical behaviour of different redox probes on single wall carbon nanotube buckypaper-modified electrodes
HONG LUO, SHUJUN GAO, CHAOFANG DONG and XIAOGANG LI	412	Characterization of electrochemical and passive behaviour of Alloy 59 in acid solution
GUOYONG HUANG, SHENGMING XU, SHASHA LU, LINYAN LI and HONGYU SUN	420	Porous polyhedral and fusiform Co ₃ O ₄ anode materials for high-performance lithium-ion batteries
ANCA DUMITRU, M. MAMLOUK and K. SCOTT	428	Effect of different chemical modification of carbon nanotubes for the oxygen reduction reaction in alkaline media
XUEQIN ZHANG, HUAJUN FENG, DAN SHAN, JIALI SHENTU, MEIZHEN WANG, JUN YIN, DONGSHENG SHEN, BAOCHENG HUANG and YANGCHENG DING	439	The effect of electricity on 2-fluoroaniline removal in a bioelectrochemically assisted microbial system (BEAMS)
JING LIU and CHARLES W. MONROE	447	Solute-volume effects in electrolyte transport
GUOFU MA, ENKE FENG, KANJUN SUN, HUI PENG, JIAJIA LI and ZIQIANG LEI	461	A novel and high-effective redox-mediated gel polymer electrolyte for supercapacitor
HUIZHI WANG, SHUNJIE GU, DENNIS Y.C. LEUNG, HONG XU, MICHAEL K.H. LEUNG, LI ZHANG and JIN XUAN	467	Development and characteristics of a membraneless microfluidic fuel cell array
KYUNG MIN OH, SUNG-WOO CHO, GYEONG-OK KIM, KWANG-SUN RYU and HAN MO JEONG	478	Novel graphene papers with sporadic alkyl brushes on the basal plane as a high-capacity flexible anode for lithium ion batteries
SANDRA PLUCZYK, WOJCIECH KUZNIK, MIECZYSLAW LAPKOWSKI, RENJI R. REGHU and JUOZAS V. GRAZULEVICIUS	487	The effect of the linking topology on the electrochemical and spectroelectrochemical properties of carbazolyl substituted perylene bisimides
FULIAN LUO, JING LI, YING LEI, WEN YANG, HONGYAN YUAN and DAN XIAO	495	Three-dimensional enoki mushroom-like Co ₃ O ₄ hierarchitectures constructed by one-dimension nanowires for high-performance supercapacitors
YORK R. SMITH, RUCHI GAKHAR, AUGUSTUS MERWIN, SWOMITRA K. MOHANTY, DEV CHIDAMBARAM and MANO MISRA	503	Anodic Titania Nanotube Arrays Sensitized with Mn- or Co-Doped CdS Nanocrystals
MUHAMMAD FAROOQ WARSII, IMRAN SHAKIR, MUHAMMAD SHAHID, MANSOOR SARFRAZ, MUHAMMAD NADEEM and ZAHEER ABAS GILANI	513	Conformal Coating of Cobalt-Nickel Layered Double Hydroxides Nanoflakes on Carbon Fibers for High-performance Electrochemical Energy Storage Supercapacitor Devices
ZHIYONG GUO, SHUPING DU, BEIBEI CHEN, YUHONG SHA, BIN QIU, XIAOHUA JIANG, SUI WANG and XING LI	519	A sandwich-type label-free electrochemiluminescence immunosensor for neurotensin based on sombrero model with graphene-hyaluronate-luminol composite
Z.B. WANG, H.X. HU, C.B. LIU and Y.G. ZHENG	526	The effect of fluoride ions on the corrosion behavior of pure titanium in 0.05 M sulfuric acid
ABDELFATTAH MAHMOUD, ISMAEL SAADOUNE, SIHAM DIFI, MOULAY TAHAR SOUGRATI, PIERRE-EMMANUEL LIPPENS and JOSÉ MANUEL AMARILLA	536	Study of the structural and thermal stability of Li _{0.3} Co _{2/3} Ni _{1/6} Mn _{1/6} O ₂
SOMAYEH RAJABZADEH, GHOLAM HOSSEIN ROUNAGHI, MOHAMMAD HOSSEIN ARBAB-ZAVAR and NARGES ASHRAF	543	Development of a dimethyl disulfide electrochemical sensor based on electrodeposited reduced graphene oxide-chitosan modified glassy carbon electrode
XUELIANG LI, YUNFU LIU, WEI GUO, JIEJIE CHEN, WENXIANG HE and FANGFANG PENG	550	Synthesis of spherical PANI particles via chemical polymerization in ionic liquid for high-performance supercapacitors
RAFAEL TRÓCOLI, SYLVAIN FRANGER, MANUEL CRUZ, JULIÁN MORALES and JESÚS SANTOS-PEÑA	558	Improving the electrochemical properties of nanosized LiFePO ₄ -based electrode by boron doping
KWAME NKURUMAH-AMOAKO, EDWARD P.L. ROBERTS, NIGEL W. BROWN and STUART M. HOLMES	568	The effects of anodic treatment on the surface chemistry of a Graphite Intercalation Compound
KUN-MU LEE, LING-CHUAN LIN, CHIA-YUAN CHEN, VEMBU SURYANARAYANAN and CHUN-GUEY WU	578	Preparation of High Transmittance Platinum Counter Electrode at an Ambient Temperature for Flexible Dye-Sensitized Solar Cells
B.D. POLAT, A. ABOUIMRANE, N. SEZGIN, O. KELES and K. AMINE	585	Use of Multilayered Ni-Sn and Ni-Sn-C Thin Film Anodes for Lithium-Ion Batteries
ERIC SIBERT, LIANG WANG, MAURIZIO DE SANTIS and YVONNE SOLDÓ-OLIVIER	594	Mechanisms of the initial steps in the Pd electro-deposition onto Au(111)

Discussion Section

ROBERT DE LEVIE	604	A pH centenary
	I	Recent SI
	II	Future SI