



Volume 134, 10 July 2014

ISSN 0013-4686

Journal of the International Society of Electrochemistry

Electrochimica Acta

Available online at www.sciencedirect.com

ScienceDirect



SHURONG TANG, WEI LU, FANG GU, PING TONG, ZHIMING YAN and LAN ZHANG	1	A novel electrochemical sensor for lead ion based on cascade DNA and quantum dots amplification
ZONGHUA PU, QIAN LIU, ABDULLAH M. ASIRI, ABDULLAH Y. OBAID and XUPING SUN	8	One-step electrodeposition fabrication of graphene film-confined WS ₂ nanoparticles with enhanced electrochemical catalytic activity for hydrogen evolution
ZHONGJIA DAI, LI WANG, FEIPENG YE, CHAOCHAO HUANG, JIXIAN WANG, XIANKUN HUANG, JIANLONG WANG, GUANGYU TIAN, XIANGMING HE and MINGGAO OUYANG	13	Influence of anion species on the morphology of solvothermal synthesized LiMn _{0.9} Fe _{0.1} PO ₄
CHAO WU, HONG ZHANG, YONG-XIN WU, QUAN-CHAO ZHUANG, LEI-LEI TIAN and XIN-XI ZHANG	18	Synthesis and characterization of Fe@Fe ₂ O ₃ core-shell nanoparticles/graphene anode material for lithium-ion batteries
LINFEI LAI, JIXIN ZHU, BAOSHENG LI, YONGDA ZHEN, ZEXIANG SHEN, QINGYU YAN and JIANYI LIN	28	One novel and universal method to prepare transition metal nitrides doped graphene anodes for Li-ion battery
SEUNGHUN JUNG, YONGJUN LENG and CHAO-YANG WANG	35	Role of CO ₂ in Methanol and Water Transport in Direct Methanol Fuel Cells
SANG-SUN PARK, YUKWON JEON, TAEGON KIM, JOO-IL PARK and YONG-GUN SHUL	49	Enhancement of electrochemical properties through high-temperature treatment of CNF grown on ACF support for PEMFC
M. TUŁODZIECKI, J.-M. TARASCON, P.L. TABERNA and C. GUÉRY	55	Importance of the double layer structure in the electrochemical deposition of Co from soluble Co ²⁺ - based precursors in Ionic Liquid media
YING LI, LITAO KANG, GAILING BAI, PEIYANG LI, JIACHUN DENG, XUGUANG LIU, YONGZHEN YANG, FENG GAO and WEI LIANG	67	Solvothermal Synthesis of Fe ₂ O ₃ Loaded Activated Carbon as Electrode Materials for High-performance Electrochemical Capacitors
E.D. FARIÁS, J.I. PAEZ, M.C. STRUMIA, A.M. BARUZZI, M.C.G. PASSEGGI (JR.) and V. BRUNETTI	76	Self-assembly of the second-generation of nitroaryl-ended dendrons onto carbon
CAN LIU, ZHENGCAO LI and ZHENGJUN ZHANG	84	Molybdenum oxide film with stable pseudocapacitive property for aqueous micro-scale electrochemical capacitor
JIN-HEE MOON, HIROKAZU MUNAKATA and KIYOSHI KANAMURA	92	Hydrothermal synthesis of Fe-substituted manganese dioxide and its electrochemical characterization for lithium rechargeable batteries
L.A. ESTUDILLO-WONG, E.M. ARCE-ESTRADA and A. MANZO-ROBLEDO	100	Interaction of NO during cathodic polarization in alkaline conditions at the interface of Pt-nanostructures supported on C and TiO ₂ -C
YONGJUN ZHANG, BO YU, SHIQUAN LÜ, XIANGWEI MENG, XIAOYU ZHAO, YUAN JI, YAXIN WANG, CHENGWEI FU, XIAOYAN LIU, XIUYAN LI, YINGRUI SUI, JIHUI LANG and JINGHAI YANG	107	Effect of Cu doping on YBaCo ₂ O _{5+δ} as cathode for intermediate-temperature solid oxide fuel cells
BAITAO LI, JUN ZHOU, XIUXIU ZHOU, XIUJUN WANG, BAIKUN LI, CARLO SANTORO, MATTEO GRATTIERI, SOFIA BABANOVA, KATERYNA ARTYUSHKOVA, PLAMEN ATANASSOV and ANDREW J. SCHULER	116	Surface Modification of Microbial Fuel Cells Anodes: Approaches to Practical Design
YASODINEE WIMALASIRI, RONG FAN, X.S. ZHAO and LINDA ZOU	127	Assembly of Ni-Al layered double hydroxide and graphene electrodes for supercapacitors
BO WEI, ZHE LÜ, WEI JIANG, XINGBAO ZHU and WENHUI SU	136	Functionally graded cathodes based on double perovskite type GdBaCo ₂ O _{5+δ} oxide
XIN YI, XIANYOU WANG, BOWEI JU, HONGBO SHU, WEICHENG WEN, RUIZHI YU, DI WANG and XIUKANG YANG	143	Effective enhancement of electrochemical performance for spherical spinel LiMn ₂ O ₄ via Li ion conductive Li ₂ ZrO ₃ coating
S. MIRAGHAEI, M. SANTAMARIA and F. DI QUARTO	150	Red Shift in the Light Absorption Threshold of Anodic TiO ₂ Films Induced by Nitrogen Incorporation
D. MARRERO-LÓPEZ, L. DOS SANTOS-GÓMEZ, J. CANALES-VÁZQUEZ, F. MARTÍN and J.R. RAMOS-BARRADO	159	Stability and performance of nanostructured La _{0.8} Sr _{0.2} MnO ₃ cathodes deposited by spray-pyrolysis
J. IZQUIERDO, L. MARTÍN-RUIZ, B.M. FERNÁNDEZ-PÉREZ, L. FERNÁNDEZ-MÉRIDA, J.J. SANTANA and R.M. SOUTO	167	Imaging Local Surface Reactivity on Stainless Steels 304 and 316 in Acid Chloride Solution using Scanning Electrochemical Microscopy and the Scanning Vibrating Electrode Technique

SAULIUS KAZLAUSKAS, ALGIMANTAS KEŽIONIS, EDVARDAS KAZAKEVIČIUS and ANTANAS FELIKSAS ORLIUKAS	176	Charge carrier relaxation and phase transition in scandium stabilized zirconia ceramics
CHENJIAO GE, PING JIANG, WEI CUI, ZONGHUA PU, ZHICAI XING, ABDULLAH M. ASIRI, ABDULLAH Y. OBAID, XUPING SUN and JIAN TIAN	182	Shape-controllable synthesis of Mo ₂ C nanostructures as hydrogen evolution reaction electrocatalysts with high activity
ZHAOHUI HOU, MUWU LI, MINGJIA HAN, JIANHUANG ZENG and SHIJUN LIAO	187	Aqueous phase synthesis and characterizations of Pt nanoparticles by a modified citrate reduction method assisted by inorganic salt stabilization for PEMFCs
JIANPING ZENG, YINXU ZHANG, RUYAO SUN and SONG CHEN	193	Electroreduction Property and MD Simulation of Nitrobenzene in Ionic Liquid [BMim][Tf ₂ N]/[BMim][BF ₄]
XIANG XIE, WANJUN MU, XINGLIANG LI, HONGYUAN WEI, YUAN JIAN, QIANHONG YU, RUI ZHANG, KAI LV, HUI TANG and SHUNZHONG LUO	201	Incorporation of tantalum ions enhances the electrocatalytic activity of hexagonal WO ₃ nanowires for hydrogen evolution reaction
BENCAI LIN, HUI SHANG, FUQIANG CHU, YURONG REN, NINGYI YUAN, BAOPING JIA, SHUAI ZHANG, XIAOMIN YU, YINGQIANG WEI and JIANNING DING	209	Ionic liquid-tethered Graphene Oxide/Ionic Liquid Electrolytes for Highly Efficient Dye Sensitized Solar Cells
NAM HEE KWON, HUI YIN, PIERRE BRODARD, CLAUDIA SUGNAUX and KATHARINA M. FROMM	215	Impact of composite structure and morphology on electronic and ionic conductivity of carbon contained LiCoO ₂ cathode
BOQI XIAO, JINTU FAN and FENG DING	222	A fractal analytical model for the permeabilities of fibrous gas diffusion layer in proton exchange membrane fuel cells
NARESH CHILAKA and SUTAPA GHOSH	232	Dielectric studies of Poly (Ethylene glycol)-Polyurethane/Poly (Methylmethacrylate)/Montmorillonite Composite
JUNHENG XING, HUI LI, ZHENGBIN XIA, JIANGQIONG CHEN, YANHONG ZHANG and LI ZHONG	242	Influence of substrate morphology on the growth and properties of TiO ₂ nanotubes in HBF ₄ -based electrolyte
CHIA-CHE WU, BIEN-CHEN KU, CHIEN-HSIEN KO, CHUN-CHE CHIU, GOU-JEN WANG, YUAN-HAN YANG and SHYH-JONG WU	249	Electrochemical impedance spectroscopy analysis of A-beta (1-42) peptide using a nanostructured biochip
CHUN-CHEN YANG, ZUO-YU LIAN, S.J. LIN, JENG-YWAN SHIH and WEI-HOUNG CHEN	258	Preparation and application of PVDF-HFP composite polymer electrolytes in LiNi _{0.5} Co _{0.2} Mn _{0.3} O ₂ lithium-polymer batteries
WEI YAN, DAN WANG, LUIS A. DIAZ and GERARDINE G. BOTTE	266	Nickel nanowires as effective catalysts for urea electro-oxidation
JUNJIE GE, JEAN ST-PIERRE and YUNFENG ZHAI	272	PEMFC cathode catalyst contamination evaluation with a RRDE-Acetonitrile
PEIPEI XU, QUNWEI TANG, BENLIN HE, QINGHUA LI and HAIYAN CHEN	281	Transmission booster from SiO ₂ incorporated TiO ₂ crystallites: Enhanced conversion efficiency in dye-sensitized solar cells
ZHENG ZHANG, ZHANHONG YANG, RUIJUAN WANG, ZHAOBIN FENG, XIAOE XIE and QINGFENG LIAO	287	Electrochemical performance of ZnO/SnO ₂ composites as anode materials for Zn/Ni secondary batteries
WEI CHEN, ZHIAN ZHANG, WEIZHAI BAO, YANQING LAI, JIE LI, YONGQING GAN and JIANJUN WANG	293	Hierarchical mesoporous γ -Fe ₂ O ₃ /carbon nanocomposites derived from metal organic frameworks as a cathode electrocatalyst for rechargeable Li-O ₂ batteries
MARIOLA BRYCHT, SŁAWOMIRA SKRZYPEK, AGNIESZKA NOSAL-WIERCŃSKA, SYLWIA SMARZEWSKA, DARIUSZ GUZIEJEWSKI, WITOLD CIESIELSKI, BARBARA BURNAT and ANDRZEJ LENIART	302	The new application of renewable silver amalgam film electrode for the electrochemical reduction of nitrile, cyazofamid, and its voltammetric determination in the real samples and in a commercial formulation
M. LI, J.P. CHENG, J.H. FANG, Y. YANG, F. LIU and X.B. ZHANG	309	NiAl-layered Double Hydroxide/Reduced Graphene Oxide Composite: Microwave-assisted Synthesis and Supercapacitive Properties
YONG-CHENG DAI, WEI YANG, XI CHEN, LI-HUA GAO and KE-ZHI WANG	319	Redox- and photovoltaic-active nanocomposite thin films of graphene oxide and a ruthenium terpyridyl complex
YONGHUANG YE, LIP HUAT SAW, YIXIANG SHI, KARTHIK SOMASUNDARAM and ANDREW A.O. TAY	327	Effect of thermal contact resistances on fast charging of large format lithium ion batteries
DONGLEI GUO, BAO LI, ZHAORONG CHANG, HONGWEI TANG, XINHONG XU, KUN CHANG, ENBAO SHANGGUAN, XIAO-ZI YUAN and HAJIANG WANG	338	Facile synthesis of LiAl _{0.1} Mn _{1.9} O ₄ as cathode material for lithium ion batteries: <i>towards rate and cycling capabilities at an elevated temperature</i>

YING BAI, KAI JIANG, SHUWEI SUN, QING WU, XIA LU and NING WAN	347	Performance improvement of LiCoO ₂ by MgF ₂ surface modification and mechanism exploration
ALEKSANDER CISZEWSKI, KLAUDIA SRON, IZABELA STEPNIAK and GRZEGORZ MILCZAREK	355	Nickel (II) lignosulfonate as precursor for the deposition of nickel hydroxide nanoparticles on a glassy carbon electrode for oxidative electrocatalysis
ANNA IGNACZAK and WOLFGANG SCHMICKLER	363	Mechanism and kinetics of electrochemical reduction of tert-butyl bromide molecule - improvement of theoretical model
XIAOMEI WANG, CAIXIA QING, QINGTANG ZHANG, WEIFENG FAN, XIAOBING HUANG, BAOPING YANG and JINFENG CUI	371	Facile synthesis and enhanced electrochemical performance of Li ₂ FeSiO ₄ /C/ reduced graphene oxide nanocomposites
TING-FENG YI, SHUANG-YUAN YANG, MENG TAO, YING XIE, YAN-RONG ZHU and RONG-SUN ZHU	377	Synthesis and application of a novel Li ₄ Ti ₅ O ₁₂ composite as anode material with enhanced fast charge-discharge performance for lithium-ion battery
YAN TAO, LI RUIYI, LI ZAIJUN and FANG YINJUN	384	A facile and scalable strategy for synthesis of size-tunable NiCo ₂ O ₄ with nanocoral-like architecture for high-performance supercapacitors
DENNIS ROMAN GALLUS, RENÉ SCHMITZ, RALF WAGNER, BJÖRN HOFFMANN, SASCHA NOWAK, ISIDORA CEKIC-LASKOVIC, RAPHAEL WILHELM SCHMITZ and MARTIN WINTER	393	The influence of different conducting salts on the metal dissolution and capacity fading of NCM cathode material
M. BEHAZIN, J.J. NOËL and J.C. WREN	399	<i>Combined Effects of pH and γ-Irradiation on the Corrosion of Co-Cr Alloy Stellite-6</i>
ZHENGUO GUO, XIN ZHANG, HUI SUN, XIAOPING DAI, YING YANG, XINSONG LI and TINGTING MENG	411	Novel honeycomb nanosphere Au@Pt bimetallic nanostructure as a high performance electrocatalyst for methanol and formic acid oxidation
JUN YOUNG KIM, SUNGHUL LEE, TAE-YOON KIM and HEE-TAK KIM	418	A Simple Diazonium Coupling Reaction Enhances Durability of Modified Graphitic Carbons Used as Catalyst Supports for Polymer Electrolyte Membrane Fuel Cell
CHENG BAO and XINXIN ZHANG	426	One-Dimensional Macroscopic Model of Solid Oxide Fuel Cell Anode with Analytical Modeling of H ₂ /CO Electrochemical Co-oxidation
HADI EBRAHIMI, HOUMAN YAGHOUBI, FRANCISCO GIAMMATTEI and ARASH TAKSHI	435	Electrochemical Detection of Piezoelectric Effect from Misaligned Zinc Oxide Nanowires Grown on a Flexible Electrode
A.V. POTAPENKO, S.I. CHERNUKHIN, I.V. ROMANOVA, K.SH. RABADANOV, M.M. GAFUROV and S.A. KIRILLOV	442	Citric acid aided synthesis, characterization, and high-rate electrochemical performance of LiNi _{0.5} Mn _{1.5} O ₄
RASHDA NASEER, SIB SANKAR MAL, MASOOMA IBRAHIM, ULRICH KORTZ, GORDON ARMSTRONG, FATHIMA LAFFIR, CALUM DICKINSON, MIKHAIL VAGIN and TIMOTHY MCCORMAC	450	Redox, surface and electrocatalytic properties of layer-by-layer films based upon Fe(III)-substituted crown polyoxometalate [P ₈ W ₄₈ O ₁₈₄ Fe ₁₆ (OH) ₂₈ (H ₂ O) ₄] ²⁰⁻
M.M. HANTEL, R. NESPER, A. WOKAUN and R. KÖTZ	459	In-situ XRD and dilatometry investigation of the formation of pillared graphene via electrochemical activation of partially reduced graphite oxide
ZHONGHUA ZHANG, ZHENFANG ZHOU, HONGRUI PENG, YONG QIN and GUICUN LI	471	Nitrogen- and oxygen-containing hierarchical porous carbon frameworks for high-performance supercapacitors
YU FU, HAI MING, QUN ZHOU, LINGLING JIN, XIAOWEI LI and JUNWEI ZHENG	478	Nitrogen-doped carbon coating inside porous TiO ₂ using small nitrogen-containing molecules for improving performance of lithium-ion batteries
ERWAN BERTIN, SÉBASTIEN GARBARINO and DANIEL GUAY	486	Formic acid oxidation on Bi covered Pt electrodeposited thin films: influence of the underlying structure
	I	Recent SI
	II	Future SI