

ПИ

780/p5S



Volume 265, 1 November 2014

ISSN 0378-7753

JOURNAL OF POWER SOURCES

The International Journal on the Science and
Technology of Electrochemical Energy Systems

Regional Editors

- C.K. Dyer (N&S America)
Z. Ogumi (Japan & P.R. China)
S. Passerini (Europe, Middle East
and Africa)
D.A.J. Rand (Asia-Pacific)

**Regional and Special
Issues Co-ordinating
Editor**

P.T. Moseley

**Founding
Editor**

D.H. Collins

Available online at www.sciencedirect.com

ScienceDirect

**Contents****Review**

- A review of composite and metallic bipolar plates in proton exchange membrane fuel cell: Materials, fabrication, and material selection 370
R. Taherian

Fuel Cells: Science and Technology

- Reactivity at the $\text{Ln}_2\text{NiO}_{4+\delta}$ /electrolyte interface ($\text{Ln} = \text{La, Nd}$) studied by Electrochemical Impedance Spectroscopy and Transmission Electron Microscopy 6
A. Montenegro-Hernández, A. Soldati, L. Mogni, H. Troiani, A. Schreiber, F. Soldera, A. Caneiro
- Coking suppression in solid oxide fuel cells operating on ethanol by applying pyridine as fuel additive 20
W. Wang, F. Wang, R. Ran, H.J. Park, D.W. Jung, C. Kwak, Z. Shao
- Effects of catalyst layer on the structural change of a membrane electrode assembly under humidity cycle tests 30
Y. Hashimasa, T. Numata, N. Yoshimura
- Paradox phenomena of proton exchange membrane fuel cells operating under dead-end anode mode 45
D. Jiang, R. Zeng, S. Wang, L. Jiang, J.R. Varcoe
- Platinum nanoworms self-assemble on β -cyclodextrin polymer inclusion complexes functionalized reduced graphene oxide as enhanced catalyst for direct methanol fuel cells 110
M. Chen, Y. Meng, J. Zhou, G. Diao
- Performance of $\text{Gd}_{0.2}\text{Ce}_{0.8}\text{O}_{1.9}$ infiltrated $\text{La}_{0.2}\text{Sr}_{0.8}\text{TiO}_3$ nanofiber scaffolds as anodes for solid oxide fuel cells 125
L. Fan, Y. Xiong, L. Liu, Y. Wang, H. Kishimoto, K. Yamaji, T. Horita
- A simple one-pot strategy to platinum–palladium@palladium core–shell nanostructures with high electrocatalytic activity 231
J.-J. Lv, J.-N. Zheng, Y.-Y. Wang, A.-J. Wang, L.-L. Chen, J.-J. Feng
- Hierarchical porous iron and nitrogen co-doped carbons as efficient oxygen reduction electrocatalysts in neutral media 246
Y. Su, H. Jiang, Y. Zhu, W. Zou, X. Yang, J. Chen, C. Li
- $\text{Ce}_{0.8}\text{Sn}_{0.2}\text{O}_{2-\delta}-\text{C}$ composite as a co-catalytic support for Pt catalysts toward methanol electrooxidation 335
Y. Gu, C. Liu, Y. Li, X. Sui, K. Wang, Z. Wang
- New bio-polymeric membranes composed of alginate–carrageenan to be applied as polymer electrolyte membranes for DMFC 345
S.D. Pasini Cabello, S. Mollá, N.A. Ochoa, J. Marchese, E. Giménez, V. Compañ
- Enhanced electricity generation for microbial fuel cell by using electrochemical oxidation to modify carbon cloth anode 391
J. Liu, J. Liu, W. He, Y. Qu, N. Ren, Y. Feng

Fuel Cells: Engineering

- Experimental advances and preliminary mathematical modeling of the Swiss-roll mixed-reactant direct borohydride fuel cell 201
A. Aziznia, C.W. Oloman, E.L. Gyenge
- Analytical solutions for extended surface electrochemical fin models 282
B.N. Cassenti, G.J. Nelson, M.B. DeGostin, A.A. Peracchio, W.K.S. Chiu

Fuel Cells: Fuel Processing

- Hydrogen generation from the hydrolytic dehydrogenation of ammonia borane using electrolessly deposited cobalt–phosphorus as reusable and cost-effective catalyst 50
M. Rakap

ScienceDirectFull text of this journal is available, on-line from **ScienceDirect**. Visit www.sciencedirect.com for more information.

Acrylonitrile-contamination induced enhancement of formic acid electro-oxidation at platinum nanoparticles modified glassy carbon electrodes	57
G.A. El-Nagar, A.M. Mohammad, M.S. El-Deab, T. Ohsaka, B.E. El-Anadouli	
Current density mapping and optical flow visualisation of a polymer electrolyte membrane water electrolyser	97
I. Dedigama, P. Angeli, N. van Dijk, J. Millichamp, D. Tsoulidis, P.R. Shearing, D.J.L. Brett	
A facile electrochemical fabrication of hierarchically structured nickel–copper composite electrodes on nickel foam for hydrogen evolution reaction	273
Z. Yin, F. Chen	
Lithium Batteries: Science and Technology	
A novel solvent-free thermal reaction of ferrocene and sulfur for one-step synthesis of iron sulfide and carbon nanocomposites and their electrochemical performance	1
L. Fei, Y. Jiang, Y. Xu, G. Chen, Y. Li, X. Xu, S. Deng, H. Luo	
Characteristics of Li_2S_8 -tetraglyme catholyte in a semi-liquid lithium–sulfur battery	14
M. Agostini, D.-J. Lee, B. Scrosati, Y.K. Sun, J. Hassoun	
Co-sinterable lithium garnet-type oxide electrolyte with cathode for all-solid-state lithium ion battery	40
S. Ohta, J. Seki, Y. Yagi, Y. Kihira, T. Tani, T. Asaoka	
Effect of surfactants on the electrochemical behavior of LiFePO_4 cathode material for lithium ion batteries	67
K. Bazzi, B.P. Mandal, M. Nazri, V.M. Naik, V.K. Garg, A.C. Oliveira, P.P. Vaishnav, G.A. Nazri, R. Naik	
Structural study of monoclinic $\text{Li}_2\text{FeSiO}_4$ by X-ray diffraction and Mössbauer spectroscopy	75
D. Jugović, M. Milović, V.N. Ivanovski, M. Avdeev, R. Dominko, B. Jokić, D. Uskoković	
A novel slurry concept for the fabrication of lithium-ion battery electrodes with beneficial properties	81
B. Bitsch, J. Dittmann, M. Schmitt, P. Scharfer, W. Schabel, N. Willenbacher	
Electrocatalytic performances of $\text{LaNi}_{1-x}\text{Mg}_x\text{O}_3$ perovskite oxides as bi-functional catalysts for lithium air batteries	91
Z. Du, P. Yang, L. Wang, Y. Lu, J.B. Goodenough, J. Zhang, D. Zhang	
Nano- $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ enwrapped into reduced graphene oxide sheets for lithium-ion batteries	104
B. Cheng, X.-D. Zhang, X.-H. Ma, J.-W. Wen, Y. Yu, C.-H. Chen	
Submicron lithium nickel manganese oxide spinel with long cycling stability and high rate performance prepared by a facile route ..	118
G. Wang, J. Xie, C. Wu, S. Zhang, G. Cao, X. Zhao	
Effect of organic solvent addition to $\text{PYR}_{13}\text{FSI} + \text{LiFSI}$ electrolytes on aluminum oxidation and rate performance of $\text{Li}(\text{Ni}_{1/3}\text{Mn}_{1/3}\text{Co}_{1/3})\text{O}_2$ cathodes	132
T. Evans, J. Olson, V. Bhat, S.-H. Lee	
In-situ investigation of solid-electrolyte interphase formation on the anode of Li-ion batteries with Atomic Force Microscopy	140
L. Wang, D. Deng, L.C. Lev, S. Ng	
Microstructural evolution induced by micro-cracking during fast lithiation of single-crystalline silicon	160
Y.S. Choi, M. Pharr, C.S. Kang, S.-B. Son, S.C. Kim, K.-B. Kim, H. Roh, S.-H. Lee, K.H. Oh, J.J. Vlassak	
Design, synthesis, and performances of double-shelled $\text{LiNi}_{0.5}\text{Co}_{0.2}\text{Mn}_{0.3}\text{O}_2$ as cathode for long-life and safe Li-ion battery	174
P. Hou, X. Wang, D. Song, X. Shi, L. Zhang, J. Guo, J. Zhang	
A surfactant-assisted synthesis route for scalable preparation of high performance of $\text{LiFe}_{0.15}\text{Mn}_{0.85}\text{PO}_4/\text{C}$ cathode using bimetallic precursor	223
X. Zhou, Y. Deng, L. Wan, X. Qin, G. Chen	
Ultrathin carbon nanopainting of LiFePO_4 by oxidative surface polymerization of dopamine	239
B. Ding, W.C. Tang, G. Ji, Y. Ma, P. Xiao, L. Lu, J.Y. Lee	
Battery internal temperature estimation by combined impedance and surface temperature measurement	254
R.R. Richardson, P.T. Ireland, D.A. Howey	
Modified carbon-free silver electrodes for the use as cathodes in lithium-air batteries with an aqueous alkaline electrolyte	299
D. Wittmaier, N. Wagner, K.A. Friedrich, H.M.A. Amin, H. Baltruschat	
Effect of electrode compression on the wettability of lithium-ion batteries	363
S.G. Lee, D.H. Jeon	
Lithium Batteries: Engineering	
Experimental investigation on heat pipe cooling for Hybrid Electric Vehicle and Electric Vehicle lithium-ion battery	262
T.-H. Tran, S. Harmand, B. Sahut	
Failure analysis of pinch-torsion tests as a thermal runaway risk evaluation method of Li-ion cells	356
Y. Xia, T. Li, F. Ren, Y. Gao, H. Wang	
Lead-Acid Batteries: Science and Technology	
Methanothermal reduction of mixtures of PbSO_4 and PbO_2 to synthesize ultrafine $\alpha\text{-PbO}$ powders for lead acid batteries	192
P. Gao, Y. Liu, W. Lv, R. Zhang, W. Liu, X. Bu, G. Li, L. Lei	
Other Electrochemical Power Sources: Science and Technology	
The $\text{Na}[\text{FSA}]-[\text{C}_2\text{C}_1\text{im}][\text{FSA}]$ ($\text{C}_2\text{C}_1\text{im}^+:\text{1-ethyl-3-methylimidazolium}$ and $\text{FSA}^-:\text{bis}(\text{fluorosulfonyl})\text{amide}$) ionic liquid electrolytes for sodium secondary batteries	36
K. Matsumoto, T. Hosokawa, T. Nohira, R. Hagiwara, A. Fukunaga, K. Numata, E. Itani, S. Sakai, K. Nitta, S. Inazawa	
Current-driven flow instabilities in large-scale liquid metal batteries, and how to tame them	166
N. Weber, V. Galindo, F. Stefani, T. Weier	
Ti(Ni,Cu) pseudobinary compounds as efficient negative electrodes for Ni–MH batteries	182
H. Emami, F. Cuevas, M. Latroche	

Increasing the energy density of the non-aqueous vanadium redox flow battery with the acetonitrile-1,3-dioxolane-dimethyl sulfoxide solvent mixture.....	317
T. Herr, P. Fischer, J. Tübke, K. Pinkwart, P. Elsner	
Glucose-assisted synthesis of $\text{Na}_3\text{V}_2(\text{PO}_4)_3/\text{C}$ composite as an electrode material for high-performance sodium-ion batteries	325
G. Li, D. Jiang, H. Wang, X. Lan, H. Zhong, Y. Jiang	
Other Electrochemical Power Sources: Engineering	
Improving long-term operation of power sources in off-grid hybrid systems based on renewable energy, hydrogen and battery.....	149
P. García, J.P. Torreglosa, L.M. Fernández, F. Jurado	
Supercapacitors: Science and Technology	
Synthesis of microsphere silicon carbide/nanoneedle manganese oxide composites and their electrochemical properties as supercapacitors.....	214
M. Kim, Y. Yoo, J. Kim	
Spiro-(1,1')-bipyrrolidinium tetrafluoroborate salt as high voltage electrolyte for electric double layer capacitors.....	309
X. Yu, D. Ruan, C. Wu, J. Wang, Z. Shi	
Supercapacitors: Engineering	
Bivariate quadratic method in quantifying the differential capacitance and energy capacity of supercapacitors under high current operation	291
C.-T. Goh, A. Cruden	
Photo-electrochemical Cells	
Facile solution-based fabrication of ZnIn_2S_4 nanocrystalline thin films and their photoelectrochemical properties	62
Y. Xie, Y. Liu, H. Cui, W. Zhao, C. Yang, F. Huang	