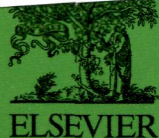


TU
J80/p53

Volume 252, 15 April 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



ELSEVIER

Contents lists available at ScienceDirect

Journal of Power Sources

journal homepage: www.elsevier.com/locate/jpowsour

Contents

Fuel Cells: Science and Technology

- In-situ visualization of N_2 evolution in operating direct hydrazine hydrate fuel cell by soft X-ray radiography 35
 T. Sakamoto, P. Deevanhxay, K. Asazawa, S. Tsushima, S. Hirai, H. Tanaka
- Chemical and electrical properties of LSM cathodes prepared by mechanochemical synthesis 43
 R. Moriche, D. Marrero-López, F.J. Gotor, M.J. Sayagués
- Symmetrical solid oxide fuel cells with impregnated $SrFe_{0.75}Mo_{0.25}O_{3-\delta}$ electrodes 58
 X. Meng, X. Liu, D. Han, H. Wu, J. Li, Z. Zhan
- High-efficiency intermediate temperature solid oxide electrolyzer cells for the conversion of carbon dioxide to fuels 79
 J. Yan, H. Chen, E. Dogdibegovic, J.W. Stevenson, M. Cheng, X.-D. Zhou
- Enhanced selectivity for the electrochemical reduction of CO_2 to alcohols in aqueous solution with nanostructured Cu–Au alloy as catalyst 85
 F. Jia, X. Yu, L. Zhang
- Using potassium catalytic gasification to improve the performance of solid oxide direct carbon fuel cells: Experimental characterization and elementary reaction modeling 130
 X. Yu, Y. Shi, H. Wang, N. Cai, C. Li, A.F. Ghoniem
- Platinum catalysts promoted by In doped SnO_2 support for methanol electrooxidation in alkaline electrolyte 156
 Y.-Y. Feng, W.-Q. Kong, Q.-Y. Yin, L.-X. Du, Y.-T. Zheng, D.-S. Kong
- Novel metal-supported solid oxide fuel cells with impregnated symmetric $La_{0.6}Sr_{0.4}Fe_{0.9}Sc_{0.1}O_{3-\delta}$ electrodes 164
 Y. Zhou, X. Liu, J. Li, H. Nie, X. Ye, S. Wang, Z. Zhan
- Preparation of $Nd_2Fe_{14}B/C$ magnetic powder and its application in proton exchange membrane fuel cells 189
 J. Shi, H. Xu, H. Zhao, L. Lu, X. Wu
- Morphologically architected spray pyrolyzed lanthanum ferrite-based cathodes—A phenomenal enhancement in solid oxide fuel cell performance 252
 J. Mukhopadhyay, R.N. Basu
- Phosphoric acid doped polybenzimidazole/imidazolium-modified silsesquioxane hybrid proton conducting membranes for anhydrous proton exchange membrane application 270
 B. Lin, F. Chu, N. Yuan, H. Shang, Y. Ren, Z. Gu, J. Ding, Y. Wei, X. Yu
- Gas phase recovery of hydrogen sulfide contaminated polymer electrolyte membrane fuel cells 317
 B.K. Kakati, A.R.J. Kucernak

Fuel Cells: Engineering

- Preparation and performances of Co–Mn spinel coating on a ferritic stainless steel interconnect material for solid oxide fuel cell application 122
 H.H. Zhang, C.L. Zeng
- On the constitutive relations for catalyst coated membrane applied to in-situ fuel cell modeling 176
 R.M.H. Khorasany, M.-A. Goulet, A.S. Alavijeh, E. Kjeang, G.G. Wang, R.K.N.D. Rajapakse

Fuel Cells: Applications

- Power management optimization of fuel cell/battery hybrid vehicles with experimental validation 333
 F. Odeim, J. Roes, L. Wülbeck, A. Heinzl

ScienceDirect

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

Lithium Batteries: Science and Technology

| | |
|--|-----|
| High-pressure synthesis and electrochemical properties of lithium transition metal oxides with layered rock-salt structure | 1 |
| H. Chang, K. Kubota, G. Kobayashi, M. Hirayama, R. Kanno | |
| Effect of urea as pore-forming agent on properties of poly(vinylidene fluoride-co-hexafluoropropylene)-based gel polymer electrolyte | 14 |
| W. Xiao, C. Miao, X. Yin, Y. Zheng, M. Tian, H. Li, P. Mei | |
| Determination of lithium sulphur batteries internal resistance by the pulsed method during galvanostatic cycling | 28 |
| V.S. Kolosnitsyn, E.V. Kuzmina, S.E. Mochalov | |
| Non-uniform temperature distribution in Li-ion batteries during discharge – A combined thermal imaging, X-ray micro-tomography and electrochemical impedance approach | 51 |
| J.B. Robinson, J.A. Darr, D.S. Eastwood, G. Hinds, P.D. Lee, P.R. Shearing, O.O. Taiwo, D.J.L. Brett | |
| Improvement of electrochemical performance for spherical LiFePO_4 via hybrid coated with electron conductive carbon and fast Li ion conductive $\text{La}_{0.56}\text{Li}_{0.33}\text{TiO}_3$ | 73 |
| H. Shu, M. Chen, Y. Fu, X. Yang, X. Yi, Y. Bai, Q. Liang, Q. Wei, B. Hu, J. Tan, C. Wu, M. Zhou, X. Wang | |
| A sulfur-polyacrylonitrile/graphene composite cathode for lithium batteries with excellent cyclability | 107 |
| J. Li, K. Li, M. Li, D. Gosselink, Y. Zhang, P. Chen | |
| Improved high-temperature performance of lithium-ion batteries through use of a thermally stable co-polyimide-based cathode binder | 138 |
| J. Choi, M.-H. Ryou, B. Son, J. Song, J.-K. Park, K.Y. Cho, Y.M. Lee | |
| Facile synthesis of Si nanoparticles using magnesium silicide reduction and its carbon composite as a high-performance anode for Li ion batteries | 144 |
| Y. Hwa, W.-S. Kim, B.-C. Yu, J.-H. Kim, S.-H. Hong, H.-J. Sohn | |
| Analysis of the solid electrolyte interphase formed with an ionic liquid electrolyte for lithium-sulfur batteries | 150 |
| S. Xiong, K. Xie, E. Blomberg, P. Jacobsson, A. Matic | |
| Synthesis and characterization of high capacity $\text{Li}_2\text{MnSiO}_4/\text{C}$ cathode material for lithium-ion battery | 169 |
| L. Qu, S. Fang, L. Yang, S.-i. Hirano | |
| A comprehensive study on electrochemical performance of Mn-surface-modified $\text{LiNi}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$ synthesized by an in situ oxidizing-coating method | 200 |
| B. Huang, X. Li, Z. Wang, H. Guo, L. Shen, J. Wang | |
| Numerical simulation of thermal behavior of lithium-ion secondary batteries using the enhanced single particle model | 214 |
| N. Baba, H. Yoshida, M. Nagaoka, C. Okuda, S. Kawauchi | |
| New trivalent imidazole-derived salt for lithium-ion cell electrolyte | 229 |
| T. Trzeciak, L. Niedzicki, G. Groszek, P. Wiczorek, M. Marcinek, W. Wiczorek | |
| Synthesis of carbon-coated Li_3VO_4 and its high electrochemical performance as anode material for lithium-ion batteries | 244 |
| Z. Liang, Y. Zhao, L. Ouyang, Y. Dong, Q. Kuang, X. Lin, X. Liu, D. Yan | |
| The effects of O_2 pressure on Li-O_2 secondary battery discharge capacity and rate capability | 248 |
| E.J. Nemanick, R.P. Hickey | |
| Effect of Mg doping on the local structure of $\text{LiMg}_y\text{Co}_{1-y}\text{O}_2$ cathode material investigated by X-ray absorption spectroscopy | 292 |
| J.H. Cheng, C.J. Pan, C. Nithya, R. Thirunakaran, S. Gopukumar, C.H. Chen, J.F. Lee, J.M. Chen, A. Sivashanmugam, B.J. Hwang | |
| Low-temperature charging of lithium-ion cells part I: Electrochemical modeling and experimental investigation of degradation behavior | 305 |
| S. Tippmann, D. Walper, L. Balboa, B. Spier, W.G. Bessler | |

Lithium Batteries: Engineering

| | |
|---|-----|
| Internal resistance matching for parallel-connected lithium-ion cells and impacts on battery pack cycle life | 8 |
| R. Gogoana, M.B. Pinson, M.Z. Bazant, S.E. Sarma | |
| A simple solvent method for the recovery of Li_xCoO_2 and its applications in alkaline rechargeable batteries | 286 |
| Y. Xu, D. Song, L. Li, C. An, Y. Wang, L.F. Jiao, H. Yuan | |
| Measurement of anisotropic thermophysical properties of cylindrical Li-ion cells | 298 |
| S.J. Drake, D.A. Wetz, J.K. Ostanek, S.P. Miller, J.M. Heinzel, A. Jain | |

Other Electrochemical Power Sources: Science and Technology

| | |
|---|-----|
| High reversible sodium insertion into iron substituted $\text{Na}_{1+x}\text{Ti}_{2-x}\text{Fe}_x(\text{PO}_4)_3$ | 208 |
| M.J. Aragón, C. Vidal-Abarca, P. Lavela, J.L. Tirado | |
| Improved Zn/Zn(II) redox kinetics, reversibility and cyclability in 1-ethyl-3-methylimidazolium dicyanamide with water and dimethyl sulfoxide added | 327 |
| M. Xu, D.G. Ivey, W. Qu, Z. Xie | |

Other Electrochemical Power Sources: Engineering

| | |
|--|-----|
| Impacts of plug-in hybrid electric vehicles on a residential transformer using stochastic and empirical analysis | 277 |
| G. Razeghi, L. Zhang, T. Brown, S. Samuelsen | |

Supercapacitors: Science and Technology

| | |
|---|----|
| Fabrication of a symmetric micro supercapacitor based on tubular ruthenium oxide on silicon 3D microstructures | 64 |
| X. Wang, Y. Yin, X. Li, Z. You | |
| Sulfurized activated carbon for high energy density supercapacitors | 90 |
| Y. Huang, S.L. Candelaria, Y. Li, Z. Li, J. Tian, L. Zhang, G. Cao | |
| Facile synthesis of hierarchical $\text{Co}_2\text{O}_4@\text{MnO}_2$ core-shell arrays on Ni foam for asymmetric supercapacitors | 98 |
| M. Huang, Y. Zhang, F. Li, L. Zhang, Z. Wen, Q. Liu | |

| | |
|---|-----|
| Larger-scale fabrication of N-doped graphene-fiber mats used in high-performance energy storage..... | 113 |
| Y. Chang, G. Han, D. Fu, F. Liu, M. Li, Y. Li | |
| Hierarchical porous carbon derived from sulfonated pitch for electrical double layer capacitors..... | 235 |
| Y. Guo, Z.-q. Shi, M.-m. Chen, C.-y. Wang | |
| Photo-electrochemical Cells | |
| Visible-light photocatalytic activity of Pt supported TiO ₂ combined with up-conversion luminescence agent (Er ³⁺ :Y ₃ Al ₅ O ₁₂) for hydrogen production from aqueous methanol solution..... | 21 |
| S. Li, Y. Guo, L. Zhang, J. Wang, Y. Li, Y. Li, B. Wang | |
| High-efficiency photovoltaic technology including thermoelectric generation..... | 264 |
| M. Fisac, F.X. Villasevil, A.M. López | |