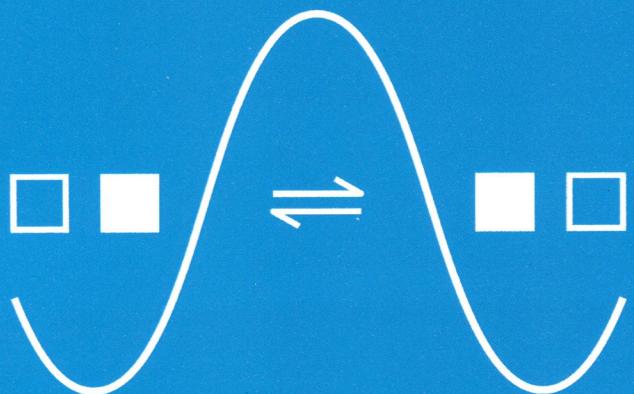


VOLUME 261, August 2014

ISSN 0167-2738

# SOLID STATE IONICS

## DIFFUSION & REACTIONS



*Principal Editor*  
Joachim Maier, Stuttgart, Germany

*Regional Editor Europe*  
John Kilner, London, UK

*Regional Editor Asia*  
Koichi Eguchi, Kyoto, Japan  
Hong Li, Beijing, China

*Regional Editor USA*  
Arumugam Manthiram, Austin, TX, USA

*Editors*  
Klaus Funke, Münster, Germany  
Truls Norby, Oslo, Norway  
Josh Thomas, Uppsala, Sweden

*Founding Editor*  
M. Stanley Whittingham, Binghamton, NY, USA

*Editorial Assistant*  
Rotraut Merkle, Stuttgart, Germany

# SOLID STATE IONICS

VOLUME 261, August 2014

Abstracted / Indexed in: Chemical Abstracts / Aluminium Industry Abstracts / ISMEC / METADEX / PASCAL / PIRA / Engineered Materials Abstracts / Analytical Abstracts / Chemical Engineering and Biotechnology Abstracts / CAB Abstracts / GeoRef / Energy Science and Technology. Also covered in the abstract and citation database Scopus®.

Full text available on ScienceDirect®.

## CONTENTS

Chemically-induced expansion of $Zr_{0.2}Ce_{0.8}O_2 - \delta$ S.R. Bishop, T. Nakamura and K. Amezawa	1
The structure and electrochemical properties of carbonized polyacrylonitrile microspheres J. Jin, Z.-q. Shi and C.-y. Wang	5
Effects of Nd-doping on the structure and electrochemical properties of $Li_3V_2(PO_4)_3/C$ synthesized using a microwave solid-state route Y. Wang, L. Wang, Z. Hou and W. Mao	11
Electronic structure and ionic diffusion of green battery cathode material: $Mg_2Mo_6S_8$ T. Kaewmaraya, M. Ramzan, J.M. Osorio-Guillén and R. Ahuja	17
Anomalous transport and thermoelectric performances of CuAgSe compounds A.J. Hong, L. Li, H.X. Zhu, X.H. Zhou, Q.Y. He, W.S. Liu, Z.B. Yan, J.-M. Liu and Z.F. Ren	21
Comment on "LiH as a $Li^+$ and $H^-$ ion provider by Khang Hoang, Chris G. Van de Walle, Solid State Ionics 253 (2013) 53" E.S. Skordas	26
The frequency dependence of nonlinear conductivity in non-homogeneous systems: An analytically solvable model C. Mattner, B. Roling and A. Heuer	28
Barium-modified NiO–YSZ/NiO–GDC cermet as new anode material for solid oxide fuel cells (SOFC) M.V. Sandoval, A. Matta, T. Matencio, R.Z. Domingues, G.A. Ludwig, M. De Angelis Korb, C. de Fraga Malfatti, P. Gauthier-Maradei and G.H. Gauthier	36
$Fe_3O_4/C$ composites synthesized from Fe-based xerogels for anode materials of Li-ion batteries X.Y. Chen, B.H. Liu and Z.P. Li	45
The impedance analysis for the aging mechanism of CaO excess type calcium zirconate electrolyte material comparing with 8.5 YSZ H.-Y. Li and X.-M. Guo	53
Study on the performance of $LiCo_xMn_{2-x}O_4 - yF_y$ using spent alkaline Zn–Mn batteries as manganese source S. Chen, G. Guo and F. Liu	59
Synthesis and characterization of sulfonated polybenzimidazoles containing 4-phenyl phthalazinone groups for proton exchange membrane C. Liu, X. Li, S. Zhang, Z. Li, Y. Cao and X. Jian	67
Thermoplastic and solid-like electrolytes with liquid-like ionic conductivity based on poly(ethylene oxide) nanocomposites A. Mejía, N. García, J. Guzmán and P. Tiemblo	74

Contents continued on last page of this issue



0167-2738(201408)261C;1-W

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

**ScienceDirect**

*Contents continued*

Enhancement of electrochemical properties of platinum doped LiFePO <sub>4</sub> /C cathode material synthesized using hydrothermal method M. Talebi-Esfandarani and O. Savadogo	81
Structure and transport properties in un-doped and acceptor-doped gadolinium tungstates W. Xing, P. Rauwel, C.H. Hervoches, Z. Li and R. Haugsrud	87
Synthesis and lithium-ion conductivity for perovskite-type Li <sub>3/8</sub> Sr <sub>7/16</sub> Ta <sub>3/4</sub> Zr <sub>1/4</sub> O <sub>3</sub> solid electrolyte by powder-bed sintering R. Inada, K. Kimura, K. Kusakabe, T. Tojo and Y. Sakurai	95
Point defects in garnet-type solid electrolyte (c-Li <sub>2</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> ) for Li-ion batteries S. KC, R.C. Longo, K. Xiong and K. Cho	100
Synthesis and characterization of lithium germanogallium sulfide, Li <sub>2</sub> GeGa <sub>2</sub> S <sub>6</sub> I. Seo and Y. Kim	106
Carbon-encapsulated Si nanoparticle composite nanofibers with porous structure as lithium-ion battery anodes X. Li, G. Lei, Z. Li, Y. Zhang and Q. Xiao	111
Thermodynamic and transport properties of Ca-doped nickel oxide and relevance to the oxidation of CaO-coated- nickel H. Aïdrous, L. Cieniek, N. Halem, J. Kusinski, C. Petot and G. Petot-Ervas	117
Study of phase stabilization and oxide–ion conductivity in B1CUMGVOX solid electrolyte S. Beg, S. Hafeez and N.A. Al-Areqi	125
Effect of Nb substitution for Ti on the electrical properties of Yb <sub>2</sub> Ti <sub>2</sub> O <sub>7</sub> -based oxygen ion conductors L.G. Shcherbakova, J.C.C. Abrantes, D.A. Belov, E.A. Nesterova, O.K. Karyagina and A.V. Shlyakhtina	131