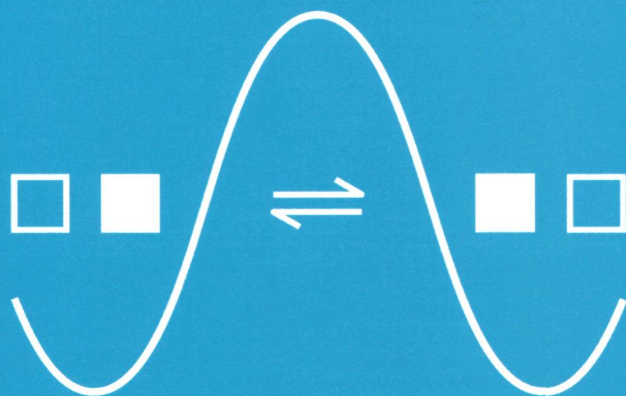


VOLUME 232, 7 February 2013

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

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

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 SciVerse Scopus®.

Full text available on SciVerse ScienceDirect®.

CONTENTS

Structural properties of Y-doped BaZrO ₃ as a function of dopant concentration and position: A density functional study D.Z. Sahraoui and T. Mineva	1
Sr-doped Li ₄ Ti ₅ O ₁₂ as the anode material for lithium-ion batteries H. Wu, S. Chang, X. Liu, L. Yu, G. Wang, D. Cao, Y. Zhang, B. Yang and P. She	13
Tetraethoxysilane as a new facilitative film-forming additive for the lithium-ion battery with LiMn ₂ O ₄ cathode Z. Wang, Y. Huang, X. Wang, D. Jia, Z. Guo and M. Miao	19
Mesoporous, Si/C composite anode for Li battery obtained by 'magnesium-thermal' reduction process I. Hong, B. Scrosati and F. Croce	24
Crystallization of 8 mol% yttria-stabilized zirconia thin-films deposited by RF-sputtering R. Frison, S. Heiroth, J.L.M. Rupp, K. Conder, E.J. Barthazy, E. Müller, M. Horisberger, M. Döbeli and L.J. Gauckler	29
Adhesive poly(PEGMA-co-MMA-co-IBVE) copolymer electrolyte B. Tran, I.O. Oladeji, J. Zou, G. Chai and L. Zhai	37
A high temperature operating nanofibrous polyimide separator in Li-ion battery W. Jiang, Z. Liu, Q. Kong, J. Yao, C. Zhang, P. Han and G. Cui	44
Theoretical modeling of electrode impedance for an oxygen ion conductor and metallic electrode system based on the interfacial conductivity theory K. Kobayashi and Y. Sakka	49
Nafion-based magnetically aligned nanocomposite proton exchange membranes for direct methanol fuel cells N. Hasanabadi, S.R. Ghaffarian and M.M. Hasani-Sadrabadi	58
Defect chemistry, thermomechanical and transport properties of (RE _{2-x} Sr _x) _{0.98} (Fe _{0.8} Co _{0.2}) _{1-y} Mg _y O _{4-δ} (RE=La, Pr) C. Chatzichristodoulou, C. Schönbeck, A. Hagen and P.V. Hendriksen	68
Polarization mechanism of high temperature electrolysis in a Ni-YSZ/YSZ/LSM solid oxide cell by parametric impedance analysis E.-C. Shin, P.-A. Ahn, H.-H. Seo, J.-M. Jo, S.-D. Kim, S.-K. Woo, J.H. Yu, J. Mizusaki and J.-S. Lee	80
A statistical perspective on oxygen diffusion and surface exchange experiments: Sensitivity analysis, parameter estimation and robust optimal experimental design F. Ciucci	97
Electrical properties of ionic liquid and double perovskite-type metal oxide composites — A new method to tailor grain-boundary impedance of ceramic electrolytes K.G.S. Pannu, T. Pannu, T. Fürstnhaupt and V. Thangadurai	106

Contents continued on last page of this issue



Contents continued

Thermoelastic and structural properties of ionically conducting cerate perovskites: (I) BaCeO_3 at low temperature in the <i>Pbmm</i> phase K.S. Knight and N. Bonanos	112
Molecular dynamics analysis of lattice site dependent oxygen ion diffusion in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$: Exposing the origin of anisotropic oxygen diffusivity C. Liu, J. Zhang, L. Wang, Y. Shu and J. Fan	123
Effect of acceptor size and hole degeneracy on oxygen nonstoichiometry of $\text{La}_2\text{NiO}_{4+\delta}$ H.-S. Kim and H.-I. Yoo	129
Oxygen transport and surface exchange properties of $\text{Sr}_{0.5}\text{Sm}_{0.5}\text{CoO}_{3-\delta}$ T.C. Yeh, J.L. Routbort and T.O. Mason	138
<i>Calendar</i>	144