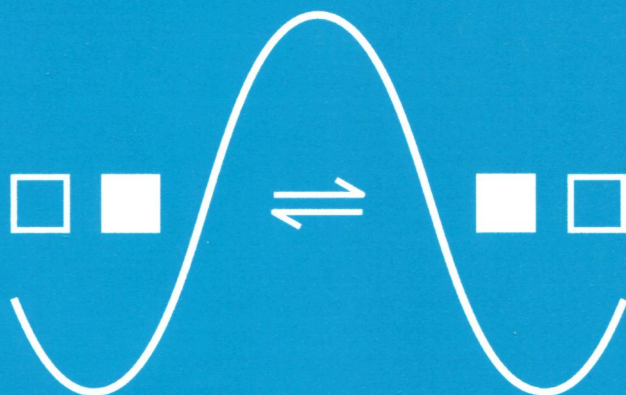


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SOLID STATE IONICS

DIFFUSION & REACTIONS



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Solid State Ionics

Volume 235, Pages 1-52 (21 March 2013)

Editorial Board

Page IFC

Phase behavior and mixed ionic–electronic conductivity of Ba₄Sb₂O₉

Original Research Article

Pages 1-7

Matthew T. Dunstan, Adriano F. Pavan, Vladislav V. Kharton, Maxim Avdeev, Justin A. Kimpton, Vladislav A. Kolotygin, Ekaterina V. Tsipis, Chris D. Ling

Highlights

► A new low-temperature monoclinic phase for Ba₄Sb₂O₉ is discovered using in-situ XRD. ► The phase transition in Ba₄Sb₂O₉ coincides with dehydration of the structure. ► Ba₄Sb₂O₉ shows significant mixed ionic–electronic conductivity.

Improving ionic conductivity of Li_{0.35}La_{0.55}TiO₃ ceramics by introducing Li₇La₃Zr₂O₁₂ sol into the precursor powder

Original Research Article

Pages 8-13

Kai Chen, Mian Huang, Yang Shen, Yuanhua Lin, C.W. Nan

Highlights

► LLTO ceramics exhibit a total conductivity of 1.2×10^{-4} S/cm at room temperature. ► The brick layer model was used to calculate the specific grain boundary conductivity. ► The space-charge-layer effect was used to explain the enhancement on conductivity. ► A Li/LLTO–10 wt.% LLZO/Li configuration was assembled.

Structure and properties of perovskites for SOFC cathodes as a function of the A-site cation size disorder

Original Research Article

Pages 14-21

A. Ecija, K. Vidal, A. Larrañaga, A. Martínez-Amesti, L. Ortega-San-Martín, M.I. Arriortua

Highlights

► We synthesised a family of iron perovskites to use as SOFC cathode materials. ► We study the effect of the A-cation disorder ($\sigma^2\langle r_A \rangle$). ► A strong influence of $\sigma^2\langle r_A \rangle$ is observed on

structural and electrical properties. ► The lowest resistance values are observed for the sample with the lowest $\sigma^2\langle r_A \rangle$.

Experimental demonstration of the path- and time-dependence of open-circuit voltage of galvanic cells involving a multinary compound under multiple chemical potential gradients

Original Research Article

Pages 22-31

Euisung Kim, Jung In Yeon, Manfred Martin, Han-Il Yoo

Highlights

► OCV of galvanic cells involving multinary compounds may be path- and time-dependent. ► Path- and time-dependence is demonstrated with proton-conducting $\text{SrCe}_{0.95}\text{Yb}_{0.05}\text{O}_{3-\delta}$. ► Important implications of the path- and time-dependence of OCV are discussed.

Hydrogen content analysis in hydrogen-charged PZT ferroelectric ceramics

Original Research Article

Pages 32-35

K. Drogowska, S. Flege, D. Rogalla, H.-W. Becker, E. Ionescu, N.-T.H. Kim-Ngan, A.G. Balogh

Highlights

► We obtained the hydrogen profiles in PZT ceramics. ► Hydrogen gathers mostly in the surface area. ► IR spectroscopy indicated existence of OH^- group.

Interface stability of thin, dense CGO film coating on YSZ for solid oxide fuel cells

Original Research Article

Pages 36-41

G. Constantin, C. Rossignol, J.-P. Barnes, E. Djurado

Highlights

► The CGO films are prepared by electrostatic spray deposition on YSZ substrates. ► Interface reactivity was detected by ToF-SIMS and XRD from 1100 °C in air. ► A homogeneous solid solution $(\text{YSZ})_{0.98}(\text{CGO})_{0.02}$ was characterized at 1500 °C.

Dielectric relaxation, ac conductivity and electric modulus in poly(vinylidene fluoride)/NaY zeolite composites

Original Research Article

Pages 42-50

A.C. Lopes, C.M. Costa, R. Sabater i Serra, I.C. Neves, J.L. Gomez Ribelles, S. Lanceros-Méndez

Highlights

► Polymer–zeolite composites are relevant for novel applications. ► The electrical properties of the composite play a critical role. ► The effect of zeolite content in the dielectric response of PVDF/NaY is evaluated. ► NaY zeolite induces the crystallization of PVDF in the γ phase. ► Dielectric properties and conductivity can be tailored by zeolite inclusion.

Calendar