

TABLE OF CONTENTS

Modeling and experimental study of hydrogen permeation through proton conducting ceramic membranes Xiwang Qi, S. Cheng and Y.S. Lin	1
Super-periodicity in $(1-x)(\text{ZrO}_2)\text{-}x(\text{Y}_2\text{O}_3)$ [$x=0.11; 0.40$] and its relationship to electrical conductivity Alicia Brune and David J. Smith	6
The effect of lattice stress in ion conducting fluorites and perovskites M. Mogensen, D. Lybye, N. Bonanos, P.V. Hendriksen And F.W. Poulsen	15
The temperature and oxygen partial pressure dependence of the electrical conductivity of $\text{La}_{0.2}\text{Sr}_{0.8}\text{Cr}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$ Jiho Yoo, Atul Verma and Allan J. Jacobson	27
Preparation techniques and ionic transport properties of ceria-based electrolytes Guangshe Li, R.L. Smith Jr., H. Inomata, K. Arai	36
Impurity cation diffusion in perovskite-type oxide, YCrO_3 J. -O. Hong, S. Miyoshi, A. Kaimai, K. Yashiro Y. Nigara, T. Kawada and J. Mizusaki	49
Mixed proton and electron transport in doped $\text{BaPrO}_{3-\delta}$ Liping Li, Jian R. Wu, Megan Knight and Sossina M. Haile	58
Mixed conductivity of yttrium-doped strontium titanate under high temperature reducing conditions Shiqiang Hui and Anthony Petric	67
The solid-solubility limits, mixed conductivity and electrode performance of cation-doped cubic YSZ Wayne L. Worrell	75
$\text{La}(\text{Sr})\text{Ga}(\text{Fe})\text{O}_3$ perovskite oxide as a new mixed conductor for an oxygen permeating membrane Tatsumi Ishihara, Yuko Tsuruta, Yu Chunying, Toshitsune Todaka, Hiroyasu Nishiguchi and Yusaku Takita	90

Electron and hole conductivity of ZrO ₂ -CeO ₂ -YO _{1.5} solid solutions Katsuhiko Yamaji, Yueping Xiong, Teruhisa Horita, Natsuko Sakai and Harumi Yokokawa	99
Determination of the electronic and ionic partial conductivities in several mixed conductors using a simple AC method V. Thangadurai, Robert A. Huggins and W. Weppner	109
Solute transfer between liquid alloys through solid electrolytes Rosalie Louey, David E. Langberg, Douglass R. Swinbourne and Jannie SJ van Deventer	129
Electrochemical behavior of Na ⁺ - oxide bronze / Na ⁺ solid electrolyte interface N. Bukun, L. Leonova, Yu. Dobrovolsky, S. Ermolaeva, A. Levchenko, A. Ukshe	135
Oxygen reactions at platinum/yttria-stabilized zirconia (YSZ) interfaces A.C. Co, S.J. Xia and V.I. Birss	141
Sintering and electrical properties of low-temperature synthesized Gd-doped ceria from polymerized precursor solutions Shuqiang Wang, Masanobu Awano and Kunihiro Maeda	152
Properties of thin yttria-stabilized zirconia membranes for solid oxide fuel cell applications made by pulsed laser deposition B. Hobein, F. Tietz, D. Stover and E.W. Kreutz	164
Synthesis ceramic cell materials from polymer precursors for electrolytic decomposition of NO Shuqiang, Masanobu Awano and Kunihiro Maeda	171
Fabrication of thin ceramic membranes by electrodeposition I. Zhitomirsky and A. Petric	179
A study of yttria stabilized zirconia sheets fabricated through tape rolling technique W. -H. Huang, H.Y. Tu, T.-L. Wen, M. Chen, D.Q. Wang and Z.Y. Lu	188

Synthesis and characterization of $\text{Mn}_{1-x}\text{Mo}_{2x}\text{V}_{2(1-x)}\text{O}_6$ and their application as anode for Li secondary battery Daishu Hara, Hiromasu Ikuta, Yoshiharu Uchimoto and Masataka Wakihara	193
Preparation of mesoporous and macroporous materials for solid oxide fuel cells Fanglin Chen, Changrong Xia and Meilin Liu	200
On the electrical conductivity of nanocrystalline CeO_2 Sangtae Kim, Jurgen Fleig and Joachim Maier	208
Ionic and mixed conducting ceria-metal (oxide) composites: materials and applications Xiangrong Liu, Peng Zhou, Xiaotian Yang, Zhigang Zhu And Bin Zhu	218
Electrical and structural characterization of a low angle tilt grain boundary in Fe-doped SrTiO_3 R.A. De Souza, O. Kienzle, J. Fleig, J. Maier and M. Ruhle	226
Mixed conductivity in nanocrystalline oxide thin films Igor Kosacki and Harlan U. Anderson	238
Electron-ion transport in $\text{ZrO}_2\text{-Y}_2\text{O}_3\text{-CeO}_2$ Ceramics C.M. Chun, J.D. Mumford, J. Patel and T.A. Ramanarayanan	252
Mono-molecular adsorbed layers of water on YSZ, their point defects and ionic conduction I. Riess, S. Raz, K. Sasaki and J. Maier	267
Lithium activities in lithium transition metal double oxide Kenichi Kawamura, Koji Asano, Shirou Nagano, Atsushi Kaimai, Keiji Yashiro, Yutaka Nigara, Tatsuya Kawada and Junichiro Mizusaki	272
Stability and electrical properties of high temperature p-n junction of NiO-ZnO system Hideto Kurokawa, Makoto Nanko, Kenichi Kawamura and Toshio Maruyama	280
Observation of two kinds of structural phase transitions in the $\text{Ba}_2\text{In}_2\text{O}_5$ system T. Hashimoto, Asaoka, K. Komazaki, Y. Ueda and M. Yoshinaga	291
Defect equilibrium and transport properties of Nb-doped SrTiO_3 T. Kawada, N. Iizawa, L.-Q. Han, K. Yashiro and A. Kaimai	296

Stable mixed conducting bilayer membranes for direct conversion of methane to syngas Eric D. Wachsman and Terry L. Clites	306
$\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3 - \text{La}_{0.9}\text{Sr}_{0.1}\text{Ga}_{0.8}\text{Mg}_{0.2}\text{O}_3$ composite cathodes for anode supported solid oxide fuel cells Tad J. Armstrong, David W. Prouse and Anil V. Virkar	319
Electrochemical oxygen separation using solid electrolyte ion transport membranes D. Laurence Meixner, David D. Brengel, Brett T. Henderson, Joseph M. Abrardo, Merrill A. Wilson and Dale M. Taylor	328
BIMEVOX adaptability in oxygen generator device C. Pirovano, R.N. Vannier, E. Capoen, G. Nowogrocki, M. Anne, J.C. Boivin and G. Mairesse	339
SOFC's based on $\text{SrCe}_{0.95}\text{Yb}_{0.05}\text{O}_3$ proton conductor R. Salar, H. Taherparvar, A.J. Cantlay, R.T. Baker, I.S. Metcalfe and M. Sahibzada	345
Mass transport in oxides for membrane reforming of methane T. Ramos and A. Atkinson	352
Solid oxide fuel cells based on metal electrodes Steven J. Visco, Craig P. Jacobson, Lutgard C. De Jonghe, Andres Leming, Yurly Matus, Liming Yang, Igor Villareal and Lide Rodriquez-Martinez	368
$\text{La}_{1-x}\text{Sr}_x\text{CoO}_{3-\delta}$ (LSZ) – $\text{Ce}_{0.8}\text{Sm}_{0.2}\text{O}_{2-\lambda}$ (SDC) Composite cathodes for anode supported YSZ-SDC bi-layer electrolyte, thin film solid oxide fuel cells Yi Jang and Anil V. Virkar	374
Electrochromic properties of poly(ethylene oxide)/ V_2O_5 nanocomposite films W. Chen, Q. Xu and Y.S. Hu	384
Chemical expansion in mixed conducting perovskites J.S. Yu and S. B. Adler	391
On hole conductivity estimation of cuprous-conducting solid electrolytes Gennady I. Ostapenko	396

Reference electrode placement in thin solid electrolyte S.B. Adler	405
Resistance oscillations in perovskite proton conductors in water-containing atmospheres Wensheng Wang and Anil V. Virkar	414
Subject Index	423