

TABLE OF CONTENTS

SOFC STATUS

Status of Solid Oxide Fuel Cell Development and Commercialization in the U.S.	3
<i>M. C. Williams</i>	
Recent Development of Solid Oxide Fuel Cells in Japan	10
<i>H. Yokokawa</i>	
Status of SOFC Development in Europe	19
<i>E. Ponthieu</i>	
Status of Danish Solid Oxide Fuel Cell R&D	28
<i>C. Bagger, S. Linderoth, M. Mogensen, P. V. Hendriksen, B. Kindl, S. Primdahl, P. H. Larsen, F. W. Poulsen, N. Bonanos, M. J. Jørgensen</i>	

SYSTEMS

Progress in Tubular Solid Oxide Fuel Cell Technology	39
<i>S. C. Singhal</i>	
Pressurized 10 kW Class Module of SOFC	52
<i>H. Mori, H. Omura, N. Hisatome, K. Ikeda, K. Tomida</i>	
Status of the Sulzer HEXIS Product Development	60
<i>R. Diethelm, M. Schmidt, K. Honegger, E. Batawi</i>	
Development of Reduced-Temperature Solid Oxide Fuel Cell Power Systems	68
<i>N. Minh, A. Anumakonda, B. Chung, R. Doshi, J. Ferrall, J. Guan, G. Lear, K. Montgomery, E. Ong, J. Yamanis</i>	
Competitive Positioning of Planar SOFC Technology - CFCL's Experience	75
<i>B. Godfrey, R. Gillespie, K. Föger</i>	

Towards the Development of a 25 kW Planar SOFC System	80
<i>R. Bolden, K. Föger, T. Pham</i>	
Status and Progress in SOFCo's Planar SOFC Development	88
<i>A. Khandkar, S. Elangovan, J. Hartvigsen, D. Rowley, R. Privette, M. Tharp</i>	
Demonstration of Anode Supported Cell Technology in kW Class Stack	95
<i>K. Föger, R. Donelson, R. Ratnaraj</i>	
Natural Gas Fueled SOFC with Zero CO ₂ Emissions - System Design and Applications	101
<i>M. R. Haines, W. K. Heidug, D. Froning, A. Lokurlu, E. Riensche</i>	
SOFC-Based Residential Cogeneration Systems	107
<i>K. Krist, K. J. Gleason, J. D. Wright</i>	
Comparison of System Efficiency Between SOFCs for Compact Cogeneration and PEFCs	116
<i>T. Kato, K. Nozaki, S. Wang, A. Negishi, S. Nagata, M. Dokiya</i>	

ELECTROLYTE MATERIALS, PROCESSING AND PERFORMANCE

Centenary of Nernst's Discovery of Zirconia Electrolytes - Review of Zirconia-Based Electrochemical Technologies	127
<i>N. Q. Minh</i>	
Low-Cost Fabrication Process for YSZ Electrolyte Films	135
<i>S. L. Swartz, M. M. Seabaugh, W. J. Dawson</i>	
Study on Isostatic Pressing YSZ Membranes Fabricated by Tape Casting	144
<i>M. Chen, T.-L. Wen, Z. Huang, P.-C. Wang, H.-Y. Tu, Z.-Y. Lu</i>	
Electrophoretic Deposition of A High Density Electrolyte Film - A Fugitive Interlayer Approach	153
<i>R. N. Basu, C. A. Randall, M. J. Mayo</i>	
Thin YSZ Membrane Prepared on Porous Cathode Disk	163
<i>H. Nagamoto, Z. H. Cai</i>	
Colloidal Spray Deposition Technique for the Processing of Thin Film Solid Oxide Fuel Cells	172
<i>A.-Q. Pham, T. H. Lee, R. S. Glass</i>	
Electrical Conductivity of ZrO ₂ -Sc ₂ O ₃ System With a Small Amount of Oxide Addition	179
<i>Y. Arachi, T. Asai, O. Yamamoto, Y. Takeda, N. Imanishi, K. Kawate, C. Tamakoshi</i>	

Characteristics of Substrate Type SOFC Using Sc-Doped Zirconia Electrolytes	185
<i>Y. Mizutani, M. Kawai, K. Nomura, Y. Nakamura, O. Yamamoto</i>	
Electrical and Ionic Conductivity of Gd-Doped Ceria	193
<i>S. Wang, T. Kobayashi, M. Dokiya, T. Hashimoto</i>	
Effect of Codopant Addition on Electrical Properties of Gadolinia-Doped Ceria Electrolyte	201
<i>N. Kim, B. H. Kim, D. Lee</i>	
Characterisation of Doped Ceria Powders Prepared by Wet Chemical Methods	209
<i>R. S. Torrens, N. M. Sammes, K. Kendall, J. C. Austin</i>	
Electrophoretic and Electrolytic Deposition of CeO ₂ and Ce _{1-x} Gd _x O _y Films	217
<i>I. Zhitomirsky, A. Petric</i>	
Nano Sized Ceria Solid Solutions for Intermediate Temperature Solid Oxide Fuel Cells	225
<i>C. Kleinlogel, L. J. Gauckler</i>	
Effect of Grain Boundaries on Electrical Conductivity and Oxygen Exchange Behaviour of Polycrystalline Lanthanum-Doped Ceria	233
<i>H.-J. Lang, K. Künstler, M. Mangler, G. Tomandl</i>	
Performance of Intermediate Temperature SOFCs with Composite Electrolytes	244
<i>B. Zhu, B.-E. Mellander</i>	
Effect of Moisture on the Phase Stability of Y ₂ O ₃ -Bi ₂ O ₃ Solid Electrolytes	254
<i>C.-C. Huang, K.-Z. Fung</i>	
Ceria/Bismuth Oxide Bilayered Electrolytes for Low Temperature Solid Oxide Fuel Cells	264
<i>E. D. Wachsman, K. L. Duncan</i>	
Electrical and Thermal Properties of (La,Sr)(Ga,Mg,Co,Fe)O _{3-δ}	275
<i>J. W. Stevenson, K. Hasinska, T. R. Armstrong</i>	
Processing and Conductivity of Lanthanum Gallate	285
<i>P. N. Huang, A. Petric, D. Ghosh</i>	
The Use of Solid State NMR and Rutherford Back Scattering to Study La _{0.8} Sr _{0.2} Ga _{0.85-x} Co _x Mg _{0.15} O _{3-δ}	292
<i>N. M. Sammes, A. Markwitz, F. M. Keppeler, G. A. Tompsett</i>	
High Temperature Mechanical Behavior of La _{0.8} Sr _{0.2} Ga _{0.85} Mg _{0.15} O _{2.825}	302
<i>J. Wolfenstine, P. Huang, A. Petric</i>	

Cation Demixing in an Oxygen Ion Conductor Exposed to an Oxygen Potential Gradient	308
<i>M. Martin</i>	
Crystal Structure of Metal Cation-Doped Ba ₂ In ₂ O ₅ and Its Oxide Ion Conductivity	317
<i>Y. Uchimoto, M. Kinuhata, H. Takagi, T. Yao, T. Inagaki, H. Yoshida</i>	
Ion Conductivity of (Ba _{1-x} La _x)In ₂ O _{5+x}	327
<i>K. Kakinuma, H. Yamamura, H. Haneda, T. Atake</i>	

CATHODE MATERIALS, PROCESSING AND PERFORMANCE

Effect of Oxygen Non-Stoichiometry on Electrode Activity of La _{1-x} A _x MnO _{3±δ} Cathode	335
<i>K. Yasumoto, N. Mori, J. Mizusaki, H. Tagawa, M. Dokiya</i>	
Thermal Expansion Behavior of Ca-, or Sr-Doped Lanthanum Manganites Under Oxidizing Atmospheres	347
<i>M. Mori, Y. Hiei, N. M. Sammes, G. A. Tompsett</i>	
Use of Creep to Investigate Mass Transport in (La,Sr)MnO ₃	355
<i>J. Wolfenstine, R. E. Cook, K. C. Goretta, J. L. Routbort</i>	
Altering the Equilibrium Condition in Sr-Doped Lanthanum Manganite	361
<i>J. T. Vaughey, X. Wang, J. D. Carter, M. Krumpelt</i>	
Improved Performance in (La,Sr)MnO ₃ and (La,Sr)(Co,Fe)O ₃ Cathodes by the Addition of a Gd-Doped Ceria Second Phase	369
<i>E. P. Murray, S. A. Barnett</i>	
Electrical Properties of Ce-Doped SrMnO ₃ as a Cathode Material	379
<i>S. Hashimoto, T. Shimura, H. Iwahara</i>	
The Modeling of the Defect Structure of LnMnO _{3+δ} (Ln=Pr, Nd)	389
<i>V. A. Cherepanov, L. Y. Barkhatova, V. I. Voronin</i>	
In-Situ Oxygen Potential Measurement on (La,Sr)CoO _{3-δ} Electrodes	396
<i>T. Kawada, S. Haga, K. Kawamura, Y. Nigara, A. Kaimai, J. Mizusaki, H. Yugami</i>	
Oxygen Nonstoichiometry and Defect Structure of La _{1-x} Me _x CoO _{3-δ} (Me=Ca, Sr, Ba)	404
<i>L. Y. Gavrilova, V. A. Cherepanov</i>	

High-Performance Electrode for Medium-Temperature Solid Oxide Fuel Cells Control of Microstructure of La(Sr)CoO ₃ Cathode with Highly Dispersed Pt Electrocatalysts	415
<i>S. Arisaka, H. Uchida, M. Watanabe</i>	
Oxygen Nonstoichiometry of the Copper-Substituted Lanthanum Cobaltite LaCo _{0.9} Cu _{0.1} O _{3-δ}	424
<i>A. Y. Zuev, A. N. Petrov, D. V. Pankov</i>	
The Phase Equilibria in the Quaternary LaCoO ₃ -LaMnO _{3+δ} -MeCoO ₂ -MeMnO ₃ Systems (Me=Sr, Ba)	432
<i>E. A. Filonova, V. A. Cherepanov, V. I. Voronin, I. F. Berger</i>	
Rate-Determining Steps of Cathodic Reactions on/in Sm _{0.5} Sr _{0.5} CoO ₃	443
<i>H. Fukunaga, T. Akatsuka, A. Endo, C. Wen, K. Yamada</i>	
LaNi _{1-x} Fe _x O ₃ Cathode Material for SOFC Operating at a Reduced Temperature	453
<i>R. Chiba, F. Yoshimura, Y. Sakurai</i>	
Lattice Parameters and Defect Structure of the Fluorite- and C-Type Oxide Solid Solutions Between MO ₂ and M ₂ O ₃	463
<i>H. Otake, A. Nakamura</i>	
Economic Production of La _{1-x} Sr _x CrO ₃ and La _{1-x} Sr _x MnO ₃	474
<i>Q. Ming, M. D. Nersisyan, J. T. Richardson, D. Luss</i>	
Synthesis of Solid Oxide Fuel Cell Ceramic Materials From Aqueous Solutions	483
<i>T. Yao, Y. Uchimoto, T. Sugiyama, Y. Nagai</i>	
Synthesis of Characterization of Gd _{1-x} Sr _x MnO ₃ Cathode for SOFC	493
<i>H. S. Yoon, D. Lee, B. H. Kim</i>	

ANODE MATERIALS, PROCESSING AND PERFORMANCE

Solid Oxide Fuel Cell Performance Studies: Anode Development	503
<i>W. Huebner, D. M. Reed, H. U. Anderson</i>	
Electrical Conductivity and Microstructure of Ni-YSZ Anode Prepared by Liquid Dispersion Method	513
<i>S. K. Pratihari, R. N. Basu, S. Mazumder, H. S. Maiti</i>	
Effect of Ionic-Conductivity of Zirconia in Ni-Zirconia Cermet Anode on Its Performance	522
<i>N. Nakagawa, K. Nakajima, K. Kato</i>	
Limitations in the Hydrogen Oxidation Rate on Ni/YSZ Anodes	530
<i>S. Primdahl, M. Mogensen</i>	

Novel Highly Titania Doped YSZ Anodes for SOFCs	541
<i>A. Kaiser, A. J. Feighery, J. T. S. Irvine</i>	
Modeling, Simulations, and Experiments in the Ni, H ₂ -H ₂ O YSZ System	549
<i>A. Bieberle, L. J. Gauckler</i>	
Electrochemical Characteristics of a Ni-YSZ Cermet Electrode on YSZ in a H ₂ -H ₂ O-CO-CO ₂ System	560
<i>Y. Matsuzaki, M. Hishinuma, I. Yasuda</i>	
Internal Reforming Over Nickel/Zirconia Anodes in SOFCs: Influence of Anode Formulation, Pre-Treatment and Operating Conditions	568
<i>C. M. Finnerty, R. H. Cunningham, R. M. Ormerod</i>	
Characterization of New Ceramic Anode Materials for Direct Methane Oxidation in SOFC	577
<i>G. Pudmich, W. Jungen, F. Tietz</i>	
Internal Reforming and Electrochemical Performance Studies of Doped Nickel/ Zirconia Anodes in SOFCs Running on Methane	583
<i>C. M. Finnerty, R. M. Ormerod</i>	
Internal Fuel Reforming in Intermediate Temperature Ceria/Gadolinia Based SOFCs	593
<i>S. J. A. Livermore, J. W. Cotton, R. M. Ormerod</i>	
Ceria Catalyst for the Internal Reforming of Biogas in a Small Tubular Solid Oxide Fuel Cell System	603
<i>J. Staniforth, K. Kendall</i>	
Properties of Nickel Mesh as a Methane Steam Reforming Catalyst and Its Application in SOFCs	612
<i>U. Flesch, R. Dahl, R. Peters, D. Stöver</i>	
Metal Dusting Corrosion of Nickel Anode	621
<i>C. M. Chun, J. D. Mumford, T. A. Ramanarayanan</i>	
Stability and Conductivity of Perovskite Oxides Under Anodic Conditions	632
<i>S. Hui, A. Petric, W. Gong</i>	
Activity of NiAl ₂ O ₄ Catalyst for Steam Reforming of Methane Under Internal Reforming Fuel Cell Conditions	640
<i>L. Kou, J. R. Selman</i>	

INTERCONNECTION MATERIALS, PROCESSING AND PERFORMANCE

Crystal Structure Analysis of LaCrO ₃ System – I. Space Group Determination by Convergent-Beam Electron Diffraction	649
<i>T. Hashimoto, K. Takagi, K. Tsuda, M. Tanaka, K. Yoshida, H. Tagawa, M. Dokiya</i>	
Crystal Structure Analysis of LaCrO ₃ System – II. Phase Transition and Thermal Expansion of Cation-Substituted LaCrO ₃	657
<i>K. Yoshida, T. Hashimoto, Y. Inagaki, H. Tagawa, M. Dokiya</i>	
Oxygen Vacancy Formation in LaCrO ₃ Base Perovskites	666
<i>F. Boroomand, E. Wessel, L. Singheiser, K. Hilpert</i>	
Model Analysis for Lattice Expansion and Internal Stress in LaCrO ₃ Under an Oxygen Potential Gradient	677
<i>H. Yakabe, I. Yasuda, M. Hishimura</i>	
Atomistic Modeling of Defect Induced Dilations in Lanthanum Chromite	687
<i>R. E. Williford, T. R. Armstrong</i>	
Sintering and Property Characterization of Strontium-Doped Lanthanum Chromite	696
<i>S. P. Simner, J. S. Hardy, J. W. Stevenson, T. R. Armstrong</i>	
Optimizing Lanthanum Chromite Interconnects for Solid Oxide Fuel Cells	706
<i>T. R. Armstrong, J. S. Hardy, S. P. Simner, J. W. Stevenson</i>	
Evaluation of Lanthanum-Concentrate for SOFC Separator	716
<i>Y. Hiei, T. Yamamoto, H. Itoh, T. Watanabe</i>	
Electrical Characterization of a Chromium Alloy Interconnect Material	722
<i>B. E. Liebert</i>	
Oxidation Resistance and Performance in Stack Tests of Near-Net-Shaped Chromium-Based Interconnects	731
<i>E. Batawi, W. Glatz, W. Kraussler, M. Janousek, B. Doggwiler, R. Diethelm</i>	
Promises and Problems with Metallic Interconnects for Reduced Temperature Solid Oxide Fuel Cells	737
<i>P. Y. Hou, K. Huang, W. T. Bakker</i>	
Candidate Interconnect Materials: Oxidation Study of a Ni-Based Superalloy in Pure Oxygen at 800°C	749
<i>M. D. Vázquez-Navarro, J. McAleese, J. A. Kilner</i>	

The Effects of Rare Earth Element Coatings on Oxidation of Alloys in SOFC Operating Atmospheres	759
<i>N. Oishi, Y. Yamazaki</i>	
New Cost-Effective Ceramic Oxide Phases Used as Protective Coatings for Chromium-Based Interconnects	767
<i>E. Batawi, A. Plas, W. Straub, K. Honegger, R. Diethelm</i>	
Chromium Vaporization from Metallic Interconnect and Retention by Perovskite Layers	774
<i>C. Gindorf, L. Singheiser, K. Hilpert, M. Schroeder, M. Martin, H. Greiner, F. Richter</i>	
A New Low Cost Mass Production Route for Metallic SOFC-Interconnectors	783
<i>W. Glatz, E. Batawi, M. Janousek, W. Kraussler, R. Zach, G. Zobl</i>	

CELL AND STACK DESIGN, FABRICATION AND PERFORMANCE

Thin Anode Supported SOFC	793
<i>S. Primdahl, M. J. Jørgensen, C. Bagger, B. Kindl</i>	
Development of 2nd Generation, Supported Electrolyte, Flat Plate SOFC Components at ECN	803
<i>J. P. Ouweltjes, F. P. F. van Berkel, P. Nammensma, G. M. Christie</i>	
Recent Developments in Anode Supported Thin Film SOFC at Research Centre Jülich	812
<i>D. Stöver, U. Diekmann, U. Flesch, H. Kabs, W. J. Quadackers, F. Tietz, I. C. Vinke</i>	
Performance of Anode Supported Planar SOFC Cells	822
<i>D. Ghosh, G. Wang, R. Brule, E. Tang, P. Huang</i>	
The Effect of Anode Thickness on the Performance of Anode-Supported Solid Oxide Fuel Cells	830
<i>J.-W. Kim, A. V. Virkar</i>	
Anode Substrates for Planar SOFC	840
<i>B. Gut</i>	
Fabrication and Characteristics of Anode-Supported Tube for Solid Oxide Fuel Cell	845
<i>R.-H. Song, E.-Y. Kim, D. R. Shin, H. Yokokawa</i>	
Fabrication and Performance of Thin-Film YSZ Solid Oxide Fuel Cells Between 600 and 800°C	851
<i>C. Wang, W. L. Worrell, S. Park, J. M. Vohs, R. J. Gorte</i>	

High Performance SOFCs at Temperatures Below 700°C	861
<i>S. J. Visco, C. P. Jacobson, L. C. De Jonghe</i>	
Intermediate Temperature Solid Oxide Fuel Cell Using Ni Doped LaGaO ₃ Electrolyte	869
<i>T. Ishihara, T. Shibayama, H. Arikawa, M. Honda, H. Nishiguchi, Y. Takita</i>	
Current Status of SOFC Development by Wet Process	879
<i>H. Takeuchi, H. Nishiyama, A. Ueno, S. Aikawa, M. Aizawa, H. Tajiri, T. Nakayama, S. Suehiro, K. Shukuri</i>	
Fabrication of Small Tubular SOFCs by Electrophoretic Deposition Technique	885
<i>H. Negishi, N. Sakai, K. Yamaji, T. Horita, H. Yokokawa</i>	
Development of Metallic Substrate Supported Thin-Film SOFC by Applying Plasma Spray Techniques	893
<i>G. Schiller, R. Henne, M. Lang, S. Schaper</i>	
Solid Oxide Fuel Cell Testing: Results and Interpretation	904
<i>M. Mogensen, P. H. Larsen, P. V. Hendriksen, B. Kindl, C. Bagger, S. Linderoth</i>	
Nanoscale Features Control Charge Transfer at Interfaces in Solid Oxide Fuel Cells	916
<i>A. J. McEvoy</i>	
Identification of Polarization Processes in SOFC Electrodes	925
<i>A. Müller, H. Schichlein, M. Feuerstein, A. Weber, A. Krügel, E. Ivers-Tiffée</i>	
Testing of Solid-Oxide Fuel Cells for Micro to Macro Power Generation	932
<i>A. F. Jankowski, R. T. Graff, J. P. Hayes, J. D. Morse</i>	
Performance of a Ni-SDC/La(Sr)Ga(Mg)O ₃ /La(Sr)CoO ₃ Single Fuel Cell	938
<i>R. Maric, S. Ohara, K. Mukai, T. Fukui, H. Yoshida, T. Inagaki, K. Miura</i>	
Electrochemical Characteristics of YSZ Electrolyte Deposited on LSM Substrate by Electrophoresis	945
<i>K. Watanabe, H. Ohrui, M. Arakawa, T. Hirai</i>	
A New Approach to Analyze LaMnO ₃ /Y ₂ O ₃ -Stabilized ZrO ₂ Interface by Secondary Ion Mass Spectrometry	954
<i>T. Horita, K. Yamaji, H. Negishi, N. Sakai, H. Yokokawa, T. Kawada, T. Kato</i>	
The Formation of Two Distinct Reaction Layers Between TZ3Y Electrolyte and LSM	962
<i>J.-P. Zhang, S.-P. Jiang, K. Föger</i>	

Increased Cathode Performance Using a Structured Electrolyte Surface	972
<i>D. Herbstritt, A. Weber, E. Ivers-Tiffée</i>	
Complex Impedance Analysis of SOFC Cathode and Its Application to Investigate the Cr-Poisoning	981
<i>Y. Matsuzaki, M. Hishinuma, I. Yasuda</i>	
Reaction Kinetics of CH ₄ -H ₂ O Gas-Mixtures on Pt/YSZ System	991
<i>S. Onuma, J. Mizusaki, A. Kaimai, K. Kawamura, Y. Nigara, T. Kawada, H. Tagawa</i>	
Operation of Low-Temperature SOFCs on Pure Methane and Ethane Without Carbon Deposition	1001
<i>E. P. Murray, S. A. Barnett</i>	
SOFC With Internal Reforming of Methane and Effect of Gas Species on Power Generation	1010
<i>K. Eguchi, J. Nishiyama, K. Sekizawa, K. Yamada</i>	
Performance of SOFC Stacks Operated with CH ₄ at Reduced Temperatures (600°-800°C)	1019
<i>K. Honegger, R. Kruschwitz, M. Keller, G. M. Christie</i>	
Non-Reforming SOFC with High Efficiency	1027
<i>K. Yamaji, T. Horita, N. Sakai, H. Negishi, H. Yokokawa</i>	
Thermal Shock Resistance of Multi-Layered Ceramic Components	1037
<i>R. P. Travis, E. P. Busso, Y. V. Tkach</i>	
In Situ Observation of Assembling Processes in SOFC Stacks	1047
<i>F. A. Meschke, R. W. Steinbrech</i>	
Aluminosilicate Glass Ceramics as Sealant in SOFC Stacks	1057
<i>N. Lahl, L. Singheiser, K. Hilpert, K. Singh, D. Bahadur</i>	

MODELING

System Identification: A New Modelling Approach for SOFC Single Cells	1069
<i>H. Schichlein, M. Feuerstein, A. Müller, A. Weber, A. Krügel, E. Ivers-Tiffée</i>	
Computer Modelling of a Novel Tubular SOFC Concept	1078
<i>R. E. Foster, N. M. Sammes, B. Fenton</i>	
Model Calculation for Planar SOFC Focusing on Internal Stresses	1087
<i>H. Yakabe, T. Ogiwara, I. Yasuda, M. Hishinuma</i>	

The Development of Heat Transfer and Gas Flow Modeling in the Solid Oxide Fuel Cells (SOFCs)	1099
<i>J. Yuan, M. Rokni, B. Sundén</i>	
Mass and Energy Balance of an Integrated Solid Oxide Fuel Cell System	1109
<i>R. J. Boersma, N. M. Sammes, C. Fee</i>	
The Effect of Mass Flow Distribution on the Characteristics of a Solid Oxide Fuel Cell System	1125
<i>E. Achenbach, U. Reus</i>	
Development of an SOFC Stack Performance Map for Natural Gas Operation	1135
<i>J. Hartvigsen, A. Khandkar, S. Elangovan</i>	
Condition Monitoring of a Solid Oxide Fuel Cell Unit	1142
<i>R.J.F. van Gerwen, J.H.C. van der Veer, H. K. Postema</i>	
Cost Effective Design of SOFC-GT Systems	1150
<i>W. G. Winkler</i>	

SOFC-RELATED NON-POWER APPLICATIONS

Solid Oxide Oxygen Generator on the 2001 Mars Surveyor Mission	1163
<i>K. R. Sridhar</i>	
Ionic Transport Membrane Technology for Oxygen Separation and Syngas Production	1173
<i>P. N. Dyer, R. E. Richards, S. L. Russek</i>	
Production of Synthesis Gas Using SOFC Technology	1177
<i>F. P. F. van Berkel, G. S. Schipper, G. M. Christie</i>	
Comparison Between the Theoretical and Practical Performance of Ceramic Membranes in Oxygen Generation	1185
<i>J. McAleese, M. D. Vázquez-Navarro, F.P.F. van Berkel, J. A. Kilner</i>	
Subject Index	1193
Author Index	1197