

CURRICULUM VITAE



Name: **Douvartzides L. Savvas**
Date of birth: **September 3rd 1973**
Place of birth: **Kozani - Greece**
Address: **Filippou B' 28
50100 Kozani
Greece**
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CURRENT POSITION

6/5/2014 - today: Assistant Professor

Department of Mechanical Engineering and Industrial Design.
Technical Institute (TEI) of Western Macedonia - Kozani, Greece

PREVIOUS POSITIONS

2005-2011: Lecturer

Department of Mechanical Engineering
Technical Institute (TEI) of Western Macedonia – Kozani, Greece

2005 – 2006: Post-doctoral Researcher

on “Design, manufacture and characterization of electrocatalysts for direct ethanol fuel cells”
Department of Mechanical Engineering
University of Thessalia – Volos, Greece

2004 – 2005: Program Manager

on “Assesment of the Enviromental Suitability of Pelion hotel enterprices”
Central Greece Planing Co. – Volos, Greece

1997 – 2004: Ph.D Candidate

on “Ethanol Utilization for Generation of Electricity in Solid Oxide Fuel Cells”
Laboratory of Advanced Energy Conversion Systems
Department of Mechanical Engineering
University of Thessalia – Volos, Greece

STUDIES

19/2/2004: PhD in Mechanical Engineering

University of Thessalia, Department of Mechanical Engineering, Volos - Greece
Title of PhD thesis: “Ethanol Utilization for Generation of Electricity in Solid Oxide Fuel Cells”
supervised by Associate Professor P. Tsiakaras

1997: MSc in Mechanical Engineering

University of Thessalia, Department of Mechanical Engineering, Volos - Greece
Title of diploma thesis: “Study on the effect of alloy elements on Laser surface hardening of steels”
supervised by Professor G. Haidemenopoulos
Grade on diploma thesis 10/10
Overall grade: 7.74/10

FOREIGN LANGUAGES

English

2007: ECPE Michigan Proficiency in English

1997: Test of English as a Foreign Language (TOEFL) Grade: 590/660

1989: First Certificate of Cambridge

Italian (learning)

Greek (Mother language)

SCHOLARSHIPS AND GRANTS

1/1/2005 – 31/6/2006: Greek Institute of State Scholarships (IKY)

Scholarship for “**Post-doctorate research in Greece**”,

on “Design, manufacture and characterization of electrocatalysts for direct ethanol fuel cells”

2000: European Union

Grant for the participation on,

Euroconference on New and Renewable Energy Systems”, Madeira-Portugal, 19-24 June/2000

2000: Organization for Ionics, University of Kiel, Germany

Grant for the participation on,

7th Euroconference on Science and Technology of Ionics, Calcatogio-Corsica-France,

October 1-7/2000.

1999: Organization for Ionics, University of Kiel, Germany

Grant for the participation on,

6th Euroconference on Science and Technology of Ionics, Cetraro-Calabria, Italy,

September 12-19/1999

TEACHING EXPERIENCE

2005-2011

Technical Institute of Western Macedonia (Kozani – Greece) – Department of Mechanical Engineering

Lecturer in

- Internal Combustion Engines I & II
- Theoretical and Applied Thermodynamics
- Mechanical Installations in Buildings I & II (Elevators, Natural Gas, Fire Protection, Water Supply, Drainage Systems, Heating)
- Boilers and Steam Turbines
- Lifting Machines

2010_Best Technical Lecturer of the Department according to student evaluation (16 candidates)

2010 Second best Theory Lecturer of the Department according to student evaluation (31 candidates)

1999-2002

University of Thessalia (Volos – Greece) – Department of Mechanical Engineering

Eight seminar teaching assistantship in

- Thermodynamics
- Advanced Energy Conversion Systems

PUBLICATIONS IN INTERNATIONAL JOURNALS - CITATIONS

J1. Methane Catalytic and Electrocatalytic Combustion over Perovskite Type Oxides Deposited on YSZ, S. Douvartzides, G. Dimoulas and P. Tsiakaras, Studies in Surface Science and Catalysis, 119, 93-98, 1998.

Cited by

1. Shi, C., Shao, G.-J., Hu, J., Zhao, B.-L., Lv, Y.-L., Progress in nano-thin films of perovskite-type complex oxides, *Zhongguo Youse Jinshu Xuebao/Chinese Journal of Nonferrous Metals*, 18 (10), pp. 1893-1902, 2008
2. Peña M.A., Fierro J.L.G., Chemical structures and performance of perovskite oxides, *Chemical Reviews* 101 (7), pp. 1981-2017 2001
3. C.A. Mims, Methane activation by surface oxygen in calcia-stabilized zirconia, *Catalysis Letters*, 68(3-4), 203-208, 2000

J2. Catalytic Behavior of La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O₃ Perovskite-type Oxide Thin Films Deposited on YSZ During the Reaction of Ethanol Combustion, S. Douvartzides, C. Athanasiou, N. Georgakakis and P. Tsiakaras, Journal of Ionics, 4, 157-160, 1999.

J3. Ethanol Utilization in Solid Oxide Fuel Cells: A Thermodynamic Approach, P. Tsiakaras, A. Demin, S. Douvartzides and N. Georgakakis, Journal of Ionics, 5, 206-212, 1999.

Cited by

1. Goula M., Kontou S., Zhou W., et al., Hydrogen production over a commercial Pd/Al₂O₃ catalyst for fuel cell utilization, *Ionics*, 9 (3-4), pp. 248-252 2003

J4. High Temperature Electrocatalytic Oxidation of Ethanol over Perovskite-type Oxides, P. Tsiakaras, S. Douvartzides, C. Athanasiou and N. Georgakakis, *Reaction Kinetics and Catalysis Letters*, 71(1), 19-25, 2000.

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1. Garagounis I., Kyriakou V., Anagnostou C., Bourganis V., Papachristou I., Stoukides M., Solid electrolytes: applications in heterogeneous catalysis and chemical cogeneration, *Industrial and Engineering Chemistry Research*, 50 (2), pp. 431-472, 2011
2. Kirillov S., Tsiakaras P., Romanova I., Adsorption and oxidation of methanol and ethanol on the surface of metallic and ceramic catalysts, *J Mol Struct* 651, pp. 365-370 2003

J5. Catalytic and Electrocatalytic Oxidation of Ethanol over $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_3$ Perovskite-type Catalyst, S. Douvartzides and P. Tsiakaras, *Solid State Ionics*, 136-137, 849-855, 2000.

Cited by

1. Eshani A., Mahjani M.G., Jafarian M., and Naeemy A., Electrosynthesis of polypyrrole composite film and electrocatalytic oxidation of ethanol, *Electrochimica Acta*, 71, pp. 128-133, 2012
2. Romanova I.V., Terikovska T.E., Mischanchuk B.G., Kirillov S.A., Pokrovskiy V.A., Investigations of decomposition of citric zinc oxide precursors by temperature - programmed mass spectrometry, *Chemistry, Physics and Technology of Surface* (in Russian), 3 (2), pp. 166-171, 2012
3. Garagounis, I., Kyriakou, V., Anagnostou, C., Bourganis, V., Papachristou, I., Stoukides, M., Solid electrolytes: Applications in heterogeneous catalysis and chemical cogeneration, *Industrial and Engineering Chemistry Research* 50 (2), pp. 431-472, 2011
4. Galenda, A., Natile, M.M., Nodari, L., Glisenti, A., $\text{La}_{0.8}\text{Sr}_{0.2}\text{Ga}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$: Influence of the preparation procedure on reactivity toward methanol and ethanol, *Applied Catalysis B: Environmental* 97 (3-4), pp. 307-322, 2010
5. И.В. Романова, КАТАЛИТИЧЕСКАЯ АКТИВНОСТЬ ОКСИДОВ МЕДИ И ЦЕРИЯ В РЕАКЦИИ ОКИСЛЕНИЯ ЭТАНОЛА, *Хімія, фізика та технологія поверхні.*, Т. 1. № 4. С. 436-440, 2010
6. Huang, X., Chen, H., Wu, T., Synthesis, characterization and catalytic properties of $\text{La}_{4-4x}\text{BaCu}_5\text{-xNi}_x\text{O}_{13+\delta}$ ($x=0, 1, 2, 3, 4, 5$), *Advanced Materials Research* 66, pp. 57-60, 2009
7. Athanasiou C., Pekridis G., Kaklidis N., Kalimeri K., Vartzoka S. and Marnellos G., Hydrogen production in Solid Electrolyte Membrane Reactors, (SEMRs), *International Journal of Hydrogen Energy*, 32, 38-54, 2007
8. Cherepanov, V.A., GavriloVA, L.Ya., Aksenova, T.V., Ananyev, M.V., Bucher, E., Caraman, G., Sitte, W., Voronin, V.I., Synthesis, structure and oxygen nonstoichiometry of $\text{La}_{0.4}\text{Sr}_{0.6}\text{Co}_{1-y}\text{Fe}_y\text{O}_{3-\delta}$, *Progress in Solid State Chemistry* 35 (2-4 SPEC. ISS.), pp. 175-182, 2007
9. A.B. Soares, P.R.N. Da Silva, J.C.C Freitas, C.M.de Almeida, Study of total oxidation of ethanol using the perovskite-type oxides LaBO_3 (B= Mn, Ni, Fe), *Quimica Nova*, 30, (5), 1061-1066, 2007
10. Fu Q., Sun K.-N., Zhang N.-Q., Zhou D.-R., Research progress on A-site deficiency perovskite cathode $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$, *Gongneng Cailiao/Journal of Functional Materials* 37 (SUPPL.), pp. 414-418, 2006
11. Poulidi D., Thursfield A., and Metcalfe I. S., Electrochemical promotion of catalysis controlled by chemical potential difference across a mixed ionic-electronic conducting ceramic membrane – an example of wireless NEMCA, *Topics in Catalysis*, 34(1-4), 2006.
12. Estantfelder M., Hahn T and Lintz H.G., Solid electrolyte potentiometry aided studies of oxidic catalysts, *Catalysis Reviews-Science & Engineering*, 46(1), 1-29, 2004
13. Marnellos G. and Stoukides M., Catalytic studies in electrochemical membrane reactors, *Solid State Ionics*, 175(1-4), 597-603, 2004
14. Kirillov S., Tsiakaras P., Romanova I., Adsorption and oxidation of methanol and ethanol on the surface of metallic and ceramic catalysts, *J Mol Struct* 651, pp. 365-370, 2003

J6. Electrochemical Promotion of Pt during the Oxidation of Ethanol. S. Douvartzides, K. Kyriakopoulos and P. Tsiakaras, *Journal of Ionics*, 7(3), 237-240, 2001.

Cited by

1. Wang R., Wei B., Wang H., Ji S., Key J., Zhang X., Lei Z., An effective electrocatalyst for ethanol oxidation: Pt-modified IrCu alloy nanoparticle, *Journal of Ionics*, 17 (7), pp. 595-601, 2011
2. Kirillov S., Tsiakaras P., Romanova I., Adsorption and oxidation of methanol and ethanol on the surface of metallic and ceramic catalysts, *J Mol Struct* 651, pp. 365-370, 2003

J7. Ethanol and Methane Fueled Solid Oxide Fuel Cells: A Comparative Study. S. Douvartzides, and P. Tsiakaras, *Journal of Ionics*, 7(3), 232-236, 2001.

Cited by

1. Tang Z., Monroe J., Dong J., Nenoff T., Weinkauff D., Platinum-Loaded NaY Zeolite for Aqueous-Phase Reforming of Methanol and Ethanol to Hydrogen, *Industrial and Engineering Chemistry Research*, 48 (5), pp. 2728-2733, 2009
2. Ki-Hun Song, Jun-hyung Ryu, Jong-Sik Chung, Recent Research Trends of Catalytic Conversion of CO₂ to High-value Chemicals, *Korean Chemical Engineering Research*, 47 (5), pp. 519-530, 2009
3. Kirillov S., Tsiakaras P., Romanova I., Adsorption and oxidation of methanol and ethanol on the surface of metallic and ceramic catalysts, *J Mol Struct* 651, pp. 365-370, 2003

J8. Performance of a SOFC Powered with External Ethanol Steam Reforming, S. Douvartzides, and P. Tsiakaras, *Journal of Ionics*, 7, 425-429, 2001.

J9. Thermodynamic and Economic Analysis of a Steam Reformer – Solid Oxide Fuel Cell System Fed by Natural Gas and Ethanol, S. Douvartzides, and P. Tsiakaras, *Energy Sources*, 24(4), 365-373, 2002.

Cited by

1. Morgensen D., Grunwaldt J.-D., Hendricksen P.V., Dam-Johansen K., Nielsen J.U., Internal steam reforming in solid oxide fuel cells: Status and opportunities of kinetic studies and their impact on modelling, *Journal of Power Sources*, 196 (1), pp. 25-38, 2011
2. Pomfret M.B., Steinhurst D.A., Owrutsky J.C., Thermal Imaging of Solid Oxide Fuel Cell Anode Degradation with Dry and Wet Ethanol Fuel Flows, *ASC Transactions*, 35 (1), pp. 1563-1570, 2011
3. Pomfret M.B., Steinhurst D.A., Owrutsky J.C., Methanol and Ethanol Fuels in Solid Oxide Fuel Cells: A Thermal Imaging Study of Carbon Deposition, *Energy & Fuels*, 25 (6), pp. 2633-2642, 2011
4. Offer G.J., Mermelstein J., Brightman E., Brandon N.P., Thermodynamics and Kinetics of the Interaction of Carbon and Sulfur with Solid Oxide fuel Cell Anodes, *Journal of the American Ceramic Society*, 92 (4), pp. 763-780, 2009
5. Song S., Tsiakaras P., Recent progress in direct ethanol proton exchange membrane fuel cells (DE-PEMFCs), *Applied Catalysis B: Environmental*, 63 (3-4), pp. 187-193, 2006
6. Hotz N., Senn S.M., Poulikakos D., Exergy analysis of a solid oxide fuel cell micropowerplant, *Journal of Power Sources*, 158 (1), pp. 333-347, 2006
7. Kirillov S., Tsiakaras P., Romanova I., Adsorption and oxidation of methanol and ethanol on the surface of metallic and ceramic catalysts, *J Mol Struct* 651, pp. 365-370, 2003

J10. The Oxidation of Ethanol over Pt Catalyst-Electrodes Deposited on ZrO₂ (8 mol% Y₂O₃). P. E. Tsiakaras, S. L. Douvartzides, V. A. Sobyanyin and A. K. Demin. *Solid State Ionics*, 152-153, 721-726, 2002.

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1. Ishihara T., Non-faradaic electrochemical modification of catalytic activity (NEMCA), *Encyclopedia of Applied Electrochemistry*, Springer, pp. 1375-1380, 2014
2. Stancovski V., Methods for controlling catalytic processes, including the deposition of carbon based particles, *US Patent 8148860*, 2013
3. Stancovski V., Methods and apparatus for controlling catalytic processes, including catalyst regeneration and shoot elimination, *US Patent 8511064*, 2013
4. Cloutier R.C., Advanced electrochemical reforming of methanol for hydrogen production, *Ph.D Thesis*, University of British Columbia, Canada, 2011
5. Stancovski V., Suib S.L., Hu B., Methods and apparatus for the synthesis of useful chemicals, *US Patent 7,964,084*, 2011
6. Stancovski V., Methods and apparatus for controlling catalytic processes, including catalyst regeneration and shoot elimination, *US Patent 7,950,221*, 2011
7. Zhao, Y., Yang, X., Zhan, L., Ou, S., Tian, J., High electrocatalytic activity of PtRu nanoparticles supported on starch-functionalized multi-walled carbon nanotubes for ethanol oxidation, *Journal of Materials Chemistry* 21 (12), pp. 4257-4263, 2011
8. Garagounis, I., Kyriakou, V., Anagnostou, C., Bourganis, V., Papachristou, I., Stoukides, M., Solid electrolytes: Applications in heterogeneous catalysis and chemical cogeneration, *Industrial and Engineering Chemistry Research* 50 (2), pp. 431-472, 2011
9. Katsaounis A., Recent developments and trends in the electrochemical promotion of catalysis (EPOC), *Journal of Applied Electrochemistry*, 40(5), 885-902, 2010
10. Wang, E.D., Xu, J.B., Zhao, T.S., Density functional theory studies of the structure sensitivity of ethanol oxidation on palladium surfaces, *Journal of Physical Chemistry C* 114 (23), pp. 10489-10497, 2010
11. Stancovski V., Methods and apparatus for controlling catalytic processes, including the deposition of carbon based particles, *US Patent 12/463,492*, 2009

12. Marnellos G. and Stoukides M., Catalytic studies in electrochemical membrane reactors, *Solid State Ionics*, 175(1-4), 597-603, 2004.

J11. Electrochemically Promoted Catalysis: The case of Ethanol Oxidation over Pt. S. L. Douvartzides and P. E. Tsiakaras. *Journal of Catalysis*, 211(2), 521-529, 2002.

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1. Stancovski V., Suib S.L., Hu B., Methods and apparatus for the synthesis of useful chemicals, *US Patent 7,964,084*, 2013
2. Stancovski V., Methods for controlling catalytic processes, including the deposition of carbon based particles, *US Patent 8148860*, 2013
3. Stancovski V., Methods and apparatus for controlling catalytic processes, including catalyst regeneration and shoot elimination, *US Patent 7,950,221*, 2011
4. Garagounis, I., Kyriakou, V., Anagnostou, C., Bourganis, V., Papachristou, I., Stoukides, M., Solid electrolytes: Applications in heterogeneous catalysis and chemical cogeneration, *Industrial and Engineering Chemistry Research* 50 (2), pp. 431-472, 2011
5. Cloutier R.C., Advanced electrochemical reforming of methanol for hydrogen production, *Ph.D Thesis*, University of British Columbia, Canada, 2011
6. Katsaounis A., Recent developments and trends in the electrochemical promotion of catalysis (EPOC), *Journal of Applied Electrochemistry*, 40(5), 885-902, 2010
7. Stancovski V., Methods and apparatus for controlling catalytic processes, including the deposition of carbon based particles, *US Patent 12/463,492*, 2009
8. Stancovski, Victor and Seetharaman, Sridhar, Control system for catalytic processes, Catelectric Corp., *US patent 7325392*, 2008
9. Poulidi, D., Mather, G.C., Metcalfe, I.S., Wireless electrochemical modification of catalytic activity on a mixed protonic-electronic conductor, *Solid State Ionics* 178 (7-10), pp. 675-680, 2007
10. Wang, Z.-B., Yin, G.-P., Lin, Y.-G., Synthesis and characterization of PtRuMo/C nanoparticle electrocatalyst for direct ethanol fuel cell, *Journal of Power Sources* 170 (2), pp. 242-250, 2007
11. Koutsodontis, C., Katsaounis, A., Figueroa, J., Cavalca, C., Pereira, C., and Vayenas, C., The effect of catalyst thickness on the electrochemical promotion of ethylene on Pt, *Topics in Catalysis*, 39(1-2), 97-100, 2006.
12. Poulianitis, C., Maragou, V., Yan, A., Song, S., Tsiakaras, P., Investigation of the reaction of ethanol-steam mixtures in a YSZ electrochemical reactor operated in a fuel cell mode, *Journal of Fuel Cell Science and Technology* 3 (4), pp. 459-463, 2006
13. Koutsodontis C., Katsaounis A., Figueroa J.C., et al, The effect of catalyst film thickness on the magnitude of the electrochemical promotion of catalytic reactions, *Topics in Catalysis* 38 (1-3), pp. 157-167 2006
14. Luersenn B., Fischer H., Janek J., and Guenther S., In situ microspectroscopy of polarized Pt/YSZ electrodes, *Solid State Ionics*, 10, 2004

J12. Fuel Options for Solid Oxide Fuel Cells: A Thermodynamic Analysis. S. Douvartzides, F. A. Coutelieris and P. Tsiakaras, *AICHE*, 49(1), 248-257, 2003.

Cited by

1. Kowalik P., Antobiak-Jurak K., Bleznowski M., Herrera M.C., Larrubia M.A., Alemany L.J., and Pieta I.S., Biofuel steam reforming catalyst for fuel cell application, *Catalysis Today*, 254, pp. 129-134, 2015
2. Halinen M, Improving the performance of solid oxide fuel cell systems, Ph.D. Thesis, Aalto University, Finland, 2015
3. Faro M.L., Frontera P., Antonucci P.L., and Arico A.S., Ni-Cu based catalysts prepared by two different methods and their catalytic activity toward the ATR methane, *Chemical Engineering Research and Design*, 93, pp. 269-277, 2015
4. Faro M.L., Reis R.M., Saglietti G.G.A., Sato A.G., Ticianelli E.A., Zignani S.C., and Arico A.S., Nickel-Copper/Gadolinium doped Ceria (CGO) composite electrocatalyst as a protective layer for a solid oxide fuel cell anode fed with ethanol, *ChemElectroChem*, 1 (8), pp. 1395-1402, 2014
5. Shi H., Su C., Yang G., Ran R., Hao Y., Tade M.O., Shao Z., Fabrication and operation of flow-through tubular SOFCs for electric power and synthesis gas cogeneration from methane, *AIChE Journal*, 60(3), pp. 1036-1044, 2014.
6. Pfeifer T., Nusch L., Lieftink D., Modena S., System design and process layout for a SOFC micro-CHP unit with reduced operating temperatures, *International Journal of Hydrogen Energy*, 38(1), pp. 431-439, 2013.
7. Pomfret M.B., Steinhurst D.A., Owrutsky J.C., Ni/YSZ solid oxide fuel cell anodes operating on humidified ethanol fuel feeds: An optical study, *Journal of Power Sources*, 233, pp. 331-340, 2013.
8. Lo Faro M., Antonucci V., Antonucci P.L., Arico A.S., Fuel flexibility: A key challenge for SOFC technology, *Fuel*, 102, pp. 554-559, 2012.
9. Halinen M., Thomann O., Kiviahio J., Effect of Anode off-gas Recycling on Reforming of Natural Gas for Solid Oxide Fuel Cell Systems, *Fuel Cells*, 12 (5), pp. 754-760, 2012.

10. Triphob N., Wongsakulphasatch S., Kiatkittipong W., Charinpanitkul T., Praserttham P., Assabumrungrat S., Integrated methane decomposition and solid oxide fuel cell for efficient electrical power generation and carbon capture, *Chemical Engineering Research and Design*, 90 (12), pp. 2223-2234, 2012.
11. Pfeifer T., Nousch L., Liefertink D., Modena S., System design and process layout for a SOFC micro CHP unit with reduced operating temperatures, *International Journal of Hydrogen Energy*, 38 (1), pp. 431-439, 2012.
12. Morgensen D., Grunwaldt J.-D., Hendricksen P.V., Dam-Johansen K., Nielsen J.U., Internal steam reforming in solid oxide fuel cells: Status and opportunities of kinetic studies and their impact on modelling, *Journal of Power Sources*, 196 (1), pp. 25-38, 2011.
13. Lo Faro M., Stassi A., Antonucci V., Modafferi V., Frontera P., Antonucci P., Arico A.S., Direct utilization of methanol in solid oxide fuel cells: An electrochemical and catalytic study, *International Journal of Hydrogen Energy*, 36 (16), pp. 9977-9986, 2011.
14. Urbani F., Freni S., Galvagno A., Chiodo V., MCFC integrated system in a biodiesel production process, *Journal of Power Sources*, 196 (5), pp. 2691-2698, 2011.
15. Pomfret M.B., Steinhurst D.A., Owrutsky J.C., Methanol and ethanol fuels in solid oxide fuel cells: A thermal imaging study of carbon deposition, *Energy & Fuels*, 25 (6), pp. 2633-2642, 2011.
16. Eigenbrodt B.C., Walker R.A., High temperature mapping of surface electrolyte oxide concentration in solid oxide fuel cells with vibrational Raman spectroscopy, *Analytical Methods*, 3, pp. 1478-1484, 2011.
17. Hartono B., Heidebrecht P., Sundmacher K., A mass integration concept for high temperature fuel cell plants, *International Journal of Hydrogen Energy*, 36 (12), pp. 7240-7250, 2011.
18. Azimova M.A., McIntosh S., On the Choice of Anode Electrocatalyst for Alcohol Fuelled Proton Conducting Solid Oxide Fuel Cells, *Journal of Electrochemical Society*, 158 (12), B1532-B1538, 2011.
19. Iqbal G., Kang B., Elastic Brittle Damage Model of Ni-YSZ and Predicted Stress: Strain Relations as a Function of Temperature and Porosity, *Journal of Fuel Cell Science and Technology*, 8 (5), 2011.
20. Eigenbrodt B.C., Corellating Electrochemical Performance with In Situ Optical Spectroscopy in Solid Oxide Fuel Cells, *PhD Thesis*, University of Maryland, USA, 2011.
21. Lanzini A., Santarelli M., Orsello G., Residential Solid Oxide Fuel Cell Generator Fuelled by Ethanol: Cell, Stack and System Modelling with a Preliminary Experiment, *Fuel Cells*, 10 (4), pp. 654-675, 2010.
22. Azimova M.A., McIntosh S., Properties and Performance of Anode-Supported Proton-Conducting $\text{BaCe}_{0.48}\text{Zr}_{0.4}\text{Yb}_{0.1}\text{Co}_{0.02}\text{O}_{3-\delta}$ Solid Oxide Fuel Cells, *Journal of Electrochemical Society*, 157(10), B1397-B1402, 2010.
23. Santarelli M., Gariglio M., De Benedictis F., Delloro F., Cali M., Orsello G., SOFC 5kW CHP Field Unit: Effect of the Methane Dilution, *Fuel Cells*, 10 (3), pp. 453-462, 2010.
24. Mermelstein J., Brandon N., Millan M., Impact of steam on the interaction between biomass gasification tars and nickel-based solid oxide fuel cell anodes, *Energy & Fuels*, 23 (10), pp. 5042-5048, 2009.
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26. Nor Aishah Saidina Amin and Soon Ee Peng, Gibbs Energy Minimization Method for Analysis of Methane Oxidation to Higher Hydrocarbons, *Jurnal Teknologi (Malaysia)*, 48(F), 33-50, 2008
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29. Nor Aishah Saidina Amin, Soon Ee Peng, Sri Raj Ammasi, Development of Zeolite Catalyst for the Conversion of Natural Gas to Ultraclean Liquid Fuel, University Teknologi Malaysia, 2007.
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34. Nikooyeh, K., Jeje, A.A., Hill, J.M., 3D modeling of anode-supported planar SOFC with internal reforming of methane, *Journal of Power Sources* 171 (2), pp. 601-609, 2007
35. Jamsak, W., Assabumrungrat, S., Douglas, P.L., Croiset, E., Laosiripojana, N., Suwanwarangkul, R., Charojrochkul, S., Thermodynamic assessment of solid oxide fuel cell system integrated with bioethanol purification unit, *Journal of Power Sources* 174 (1), pp. 191-198, 2007
36. Harrun N.A, Development of zeolite catalysts for the conversion of natural gas to ultraclean liquid fuel, Project Report. Faculty of Chemical and Natural Resource Engineering, Skudai, Johor
37. Jong K.M., Catalytic conversion of methane and carbon dioxide in conventional fixed bed and dielectric barrier discharge plasma reactors, PhD Thesis, Universiti Teknologi Malaysia, 2007
38. Cordiner S., Feola M., Mulone V., and Romanelli F., Analysis of a SOFC energy generation system fuelled with biomass reformate, *Applied Thermal Engineering*, 27(4), 738-747, 2007
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C22. Energy and exergy analysis of a Solid Oxide Fuel Cell plant fueled by ethanol and methane

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C23. Bi₄Cu_{0.2}V_{1.8}O_{11-δ} based membrane electrochemical reactors for propane oxidation at moderate temperatures

R. Cai, J.H. Tong, B.F. Ji, W.S. Yang, S. Douvartzides (oral presentation) and P. Tsiakaras

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