FCH JU Grant Agreement number: 245156

Project acronym: DEMMEA

Project title: Understanding the Degradation Mechanisms of Membrane-Electrode-Assembly for High Temperature PEMFCs and Optimization of the Individual Components

Deliverable 7.3: Dissemination through papers in specialized and non specialized press

Period covered: 01/01/2010-31/12/2012

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Dissemination activities

Dissemination strategy

Dissemination of the information to the scientific community is done firstly through the publication of selected information from the experiments and data analysis of the project in international "peer-reviewed" journals.

A detailed list of the aforementioned is provided below, also available in Table A.1 below.

Publications

- "Covalent cross-linking in phosphoric acid of pyridine based aromatic polyethers bearing side double bonds for use in high temperature polymer electrolyte membrane fuel cells", K.D. Papadimitriou, M. Geormezi, S.G. Neophytides, J.K. Kallitsis Journal of Membrane Science 433, 1–9 (2013)

- "Cross-linked high temperature polymer electrolytes through oxadiazole bond formation and their applications in HT PEM fuel cells", C.I Morfopoulou, A.K. Andreopoulou, M.K. Daletou, S.G. Neophytides, J.K. Kallitsis Journal of Materials Chemistry A: Materials for Energy and Sustainability, 1 (5) 1613-1622, (2013)

- "Design of a Reference Electrode for High Temperature PEM Fuel Cells", S. Kaserer, C. Rakousky, J. Melke, C. Roth, J. Appl. Electrochem., submitted (2013)

- "Cooperative behaviour of Pt microelectrodes during CO bulk electrooxidation", D.A. Crespo-Yapur, A. Bonnefont, R. Schuster, K.Krischer and E.R. Savinova, ChemPhysChem (2013) accepted, DOI: 10.1002/cphc.201300105.

- "Recent trends in the fabrication of dimensionally ordered electrodes for fuel cell applications", A. Bonnefont, P. Ruvinskiy, M. Rouhet, A. Orfanidi, S. Neophytides, E.R. Savinova Energy and Environment, Wiley, an invited advanced review, to be submitted on April 30, 2013.

- "Thermal crosslinking of aromatic polyethers bearing pyridine groups for use as high temperature polymer electrolytes", I. Kalamaras, M.K. Daletou, V.G. Gregoriou, J.K. Kallitsis Journal of Membrane Science, Journal of Membrane Science 415–416, 42–50 (2012)

- “Polymer blends based on copolymers bearing both side and main chain pyridine units as proton exchange membranes for high temperature fuel cells”, M. Georgezi, V. Deimede, J.K. Kallitsis, S. Neophytides Journal of Membrane Science Volume 396, 57-66 (2012)

- “Analyzing the Influence of H_3PO_4 as Catalyst Poison in High Temperature PEM Fuel Cells using in-operando X-ray Absorption Spectroscopy”, S. Kaserer, K. Caldwell, D.E. Ramaker, C. Roth, J. Phys. Chem. C [Online early access]. DOI: 10.1021/jp311924q. Published Online: March 1, 2013

- ‘‘Performance of a High-Temperature Polymer Electrolyte Membrane Fuel Cell under Mechanical Compression Control:, Diedrichs and P. Wagner, Accepted for publication in ECS Transactions 50, September 2012 Honolulu/Hawaii, USA.

- “3D-ordered layers of vertically aligned carbon nanofilaments as a model approach to study electrocatalysis on nanomaterials” P.S. Ruvinskiy, A. Bonnefont, E.R. Savinova, Special Issue of Electrochimica Acta – International Year of Chemistry 2011 "Electrochemical Science and Technology - State of the Art and Future Perspectives", Electrochimica Acta, 84 (2012) 174-186 (invited review article).

- “Using Ordered Carbon Nanomaterials for Shedding Light on the Mechanism of the Cathodic Oxygen Reduction Reaction”, Pavel S. Ruvinskiy, Antoine Bonnefont, Cuong Pham-Huu, and Elena R. Savinova, , Langmuir, 27 (2011) 9018-9027.

- “Cathode Materials for Polymer Electrolyte Fuel Cells based on Vertically Aligned Carbon Filaments”, P. S. Ruvinskiy, M. Rouhet, A. Bonnefont, K.A. Friedrich, C. Pham-Huu, E.R. Savinova ECS transactions, 41 (1), 1089 (2011).

- “Sulfonated Aromatic Polyethers Containing Pyridine Units as Electrolytes for High Temperature Fuel Cells” , I. Kalamaras, M.K. Daletou, V.G. Gregoriou, J.K. Kallitsis FUEL CELLS 11(6), 921–931 (2011)

- “The effect of structural variations on aromatic polyethers for high temperature PEM fuel cells”, C. Morfopoulou, A.K. Andreopoulou, J.K. Kallitsis Journal of Polymer Science Part A: Polymer Chemistry 49, 4325–4334 (2011)

- “Cross-Linking of Side Chain Unsaturated Aromatic Polyethers for High Temperature Polymer Electrolyte Membrane Fuel Cell Applications”, K.D. Papadimitriou, F. Paloukis, S.G. Neophytides, J.K. Kallitsis Macromolecules 44, 4942–4951 (2011)

- “Further insight into the oxygen reduction reaction on Pt nanoparticles supported on spatially structured catalytic layers”, P. S. Ruvinskiy, A. Bonnefont, and E.R. Savinova, Electrocatalysis 2 (2011) 123-133.

- “Preparation, testing and modeling of three-dimensionally ordered catalytic layers for electrocatalysis of fuel cell reactions”, P. S. Ruvinskiy, A. Bonnefont, M. Houllé, C. Pham-Huu, and E.R. Savinova, Electrochim. Acta, 55 (2010) 3245-3256.

- “Mass transport effects in CO bulk electrooxidation on Pt nanoparticles supported on vertically aligned carbon nanofilaments”, Pavel S. Ruvinskiy, Antoine Bonnefont, Maryam Bayati, and Elena R. Savinova, Phys Chem. Chem. Phys 2010, 12 (46), 15207 – 15216.

- “Preparation and characterization of Pt on modified multi-wall carbon nanotubes to be used as electrocatalysts for high temperature fuel cell applications”, Alin Orfanidi, Maria K. Daletou, Stylianos G. Neophytides, Applied Catalysis B: Environmental (doi:10.1016/j.apcatb.2011.05.043).

Table A. 1: **LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS**

No	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Year of publication	Relevant pages	Permanent identifiers
1	Covalent cross linking in phosphoric acid of pyridine based aromatic polyethers bearing side double bonds for use in high temperature polymer electrolyte membrane fuel cells	K. Papadimitriou	Journal of Membrane Science	433	Elsevier	2013	1-9	http://www.sciencedirect.com/science/article/pii/S0376738813000409
2	Cross linked high temperature polymer electrolytes through oxadiazole bond formation and their applications in HT PEM fuel cells	C.I. Morfopoulou	Journal of Materials Chemistry A: Materials for Energy and Sustainability	1	RSC Publishing	2013	1613-1622	http://pubs.rsc.org/en/Content/ArticleLanding/2013/TA/C2TA00610C
3	Design of a reference electrode for high temperature PEM fuel cells	S. Karerer	Journal of Applied Electrochemistry			Submitted 2013		
4	Cooperative behaviour of Pt microelectrodes during CO bulk electrooxidation	D. A. Crespo-Yapur	Chem. Phys. Chem		John Wiley and Sons	2013 accepted		http://onlinelibrary.wiley.com/doi/10.1002/cphc.201300105/abstract
5	Thermal crosslinking of aromatic polyethers bearing pyridine groups for use as high temperature polymer electrolytes	I. Kalamaras	Journal of Membrane Science	415-416	Elsevier	2012	42-50	http://www.sciencedirect.com/science/article/pii/S0376738812003973
6	Polymer blends based on copolymers bearing both side and main chain pyridine units as proton exchange membranes for high temperature fuel	M. Georgezi	Journal of Membrane Science	396	Elsevier	2012	57-66	http://www.sciencedirect.com/science/article/pii/S0376738811009574

	cells							
7	Analyzing the influence of H3PO4 as catalyst poison on high temperature PEM fuel cells using in operand X-ray absorption spectroscopy	S. Kaserer	The Journal of Physical Chemistry C		American Chemical Society	Accepted 2013		http://pubs.acs.org/doi/abs/10.1021/jp311924q
8	3D ordered layers of vertically aligned carbon nanofilaments as a model approach to study electrocatalysis on nanomaterials	P.S. Ruvinskiy	Special Issue of Electrochimicxa Acta, International Year of Chemistry 2011	84	Elsevier	2012	174-186	http://www.sciencedirect.com/science/article/pii/S0013468612004860
9	Using Ordered Carbon Nanomaterials for Shedding Light on the Mechanism of the Cathodic Oxygen Reduction Reaction	Pavel S. Ruvinskiy	Langmuir	27	American Chemical Society	2011	9018-9027	http://pubs.acs.org/doi/abs/10.1021/la2006343
10	Cathode Materials for polymer electrolyte fuel cells based on vertically aligned carbon filaments	P.S. Ruvinskiy	ECS transactions	41(1)	The Electrochemical Society	2011	1089-1097	http://ecst.ecsdl.org/content/41/1/1089.abstract
11	Sulfonated aromatic polyethers containing pyridine units as electrolytes for high temperature fuel cells	I. Kalamaras	Fuel Cells	11 (6)	John Wiley and Sons	2011	921-931	http://onlinelibrary.wiley.com/doi/10.1002/fuce.201100024/abstract
12	Cross linking of side chain unsaturated aromatic polyethers for high temperature polymer electrolyte membrane fuel cell applications	K.D. Papadimitriou	Macromolecules	44	American Chemical Society	2011	4942-4951	http://pubs.acs.org/doi/abs/10.1021/ma200351z
13	Further insight into the oxygen reduction reaction on Pt nanoparticles supported on spatially structured catalytic layers	P. S. Ruvinskiy	Electrocatalysis	2	Springer	2011	123-133	http://www.springerlink.com/content/u520230427620213/

14	Preparation, testing and modeling of three-dimensionally ordered catalytic layers for electrocatalysis of fuel cell reactions	P. S. Ruvinskiy	Electrochim. Acta	55	Elsevier	2010	3245-3256	http://www.sciencedirect.com/science/article/pii/S0013468610000940
15	Mass transport effects in CO bulk electrooxidation on Pt nanoparticles supported on vertically aligned carbon nanofilaments	P. S. Ruvinskiy	Phys Chem. Chem. Phys.	12 (46)	RSC Publishing	2010	15207 – 15216	http://pubs.rsc.org/en/content/articlelanding/2010/cp/c0cp00593b/
16	Preparation and characterization of Pt on modified multi-wall carbon nanotubes to be used as electrocatalysts for high temperature fuel cell applications	Alin Orfanidi	Applied Catalysis B: Environmental	106 (3-4)	Elsevier	2011	379-389	http://www.sciencedirect.com/science/article/pii/S0926337311002621
17	The effect of structural variations on aromatic polyethers for high temperature PEM fuel cells	C. Morfopoulou	J. Polym. Sci. Part A: Polym. Chem	49	John Wiley and Sons	2011	4325-4334	http://onlinelibrary.wiley.com/doi/10.1002/pola.24897/pdf