FP7-FCH-JU-2008-1-CP

ROBANODE

“Understanding and minimizing anode degradation in hydrogen and natural gas fuelled SOFCs”

FCH JU Grant Agreement number: 245355

Project acronym: ROBANODE

Project title: Understanding and minimizing anode degradation in hydrogen and natural gas fuelled SOFCs.

Deliverable: D5.3

Dissemination through papers in specialized and non specialized press

Period covered: 01/01/2010-30/06/2011

Name, title and organization of the scientific representative of the project's coordinator:

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Objectives

Dissemination of the results to the wide public as well as in the scientific community with publications in international “peer-reviewed journals” and participation in conferences and Exhibitions

ROBANODE aims to develop methodologies and diagnostic tools for understanding of anode degradation mechanisms and predicting anode failure in natural gas fuelled SOFCs. It thus poses an ambitious technological and research challenge, which is expected to be successfully addressed, yielding to results that will definitely accelerate the successful introduction of SOFC technology in the market. In this respect the results and conclusions coming out of the project have to be shared not only among the proposing partners but also with all SOFC stakeholders, coming both from the scientific community and the related industry, as well as with the wider public through a proper dissemination mechanism which will allow following of the project progress and accessing the project results by all interested parties. Furthermore, as understanding and prediction of anode degradation will offer tools for the improvement of the natural gas fuelled SOFCs technology it represents an innovative enabling technology, which should be exploited by the project partners, ensuring however its protection through proper intellectual property rights management and a transparent consortium agreement. Specifically, the participation of both CERECO and Saint Gobain ensures fast dissemination of the high added value ROBANODE proposed methodology and expected technology improvement due to their broad worldwide network and links with industrial end users of the proposed technology.

Dissemination of project results

Dissemination of the information to the fuel cell stakeholders from industry will practically follow the same mechanism, i.e. publications, conferences and public website. In addition, as not all of the industries participate in scientific conferences, the dissemination of the project results will be made through the Enterprise Europe Network, the largest European network offering services primarily to SMEs with 554 organizations members in 44 countries supported by the Competitiveness and Innovation Program and providing amongst others innovation, technology and knowledge transfer services.

The Enterprise Europe Network is the mechanism recommended by the IPR help desk (http://www.iprhelpdesk.org/documents/ES_PlanUseDisseminationNew_0000006666_00.xml.htm) for the dissemination and exploitation of research results coming from FP7 EU funded projects. The Enterprise Europe Network will also be an important tool during the progress of the work by offering the opportunity to perform a “technology watch”, on what technologies are currently available in this field, as the Network concentrates all the latest innovative technologies from all 44 member countries. Hence, cutting edge technologies are very likely to be in the Networks database.

The communication strategy that includes a planning for publications to be made, presentations to be given and conferences to be attended on behalf of the consortium, will be discussed at each Steering
Committee meeting. In all publications of results, which will come out from the proposed project, proper acknowledgement to FP7 funding will be given as follows: 

Financial support from the European Commission's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° xxxxxx. (ROBANODE project) is greatly acknowledged.

1st Period (18 month) dissemination activities

The results of the ongoing work have been presented at scientific conferences such as an invited talk in the 219th Electrochemical Society Meeting held in Montreal (Canada) (1-6 May 2011), while a presentation in a more specialized conference (2nd International Workshop on Degradation Issues of Fuel Cells, Thessaloniki, Greece 21 – 23 September 2011) was recently given.

A detailed list of the aforementioned is provided below:

**Participation on Conferences**

**International Conferences**


5. P. Pandis, P. Sakkas, G. Sourkouni, Ch. Argirusis, and Ch. Fтикос, “Influence of doping on oxygen permeability in La_{1-x}Ba_xCo_{1-y}M_yO_{12-δ} (M=Fe,Mn) perovskites”, International Conference on Solid State Chemistry 2010 (SSC2010), Prague, Czech Republic,

7. V. Stournari, Ch. Argirusis, G. Sourkouni, and V. Stathopoulos, “Preparation and characterization of nano-crystalline apatite-type lanthanum silicates for solid oxide fuel cells”, European Materials Research Society International Conference, E-MRS 2011 Spring & Bilateral Meeting, Nice (France), May 9 to 13, 2011


9. P. Pandis, V. Siaperas, V. Nikolakaki, Ch. Ftikos, G. Sourkouni, and Ch. Argirusis, “Influence of doping on electrical conductivity and oxygen permeability of La$_{1-x}$Ba$_x$Co$_{1-y}$M$_y$O$_{3+\delta}$ (M=Fe,Mn) perovskites”, 18th International Conference on Solid State Ionics, 03-08 July, 2011, Warszawa, Poland

10. P. Pandis, Ch. Ftikos, G. Sourkouni, and Ch. Argirusis, “Structural integrity after long-term oxygen permeation studies at BaME$_2$Fe$_{1.5}$O$_{3.5}$ (ME=Ni, Cu) compounds”, 18th International Conference on Solid State Ionics, 03-08 July, 2011, Warszawa, Poland


14. Redox behavior of nanosized PtCo alloys: new insights from ambient pressure x-ray photoelectron and absorption spectroscopies par S. Zafeiratos, “Nanoalloys as advanced materials: from structure to properties and applications” Invited presentation (14-16 Apr. 2011) Barcelona (Spain)

15. Surface modification of model PtCo/TiO2 catalysts in reactive atmospheres studied in situ by


Greek Conferences

17. V. Stournari, Ch. Argirusis, G. Sourkouni, and V. Stathopoulos,
“Synthesis and characterization of doped apatite type silicon oxides for SOFC applications”
8th Panhellenic Scientific Conference for Chemical Engineering, Thessaloniki, May 26–28, 2011

18. E. Michopoulos, P. Pandis, Ch. Argirusis, G. Sourkouni, and V. Stathopoulos,
Wet chemistry synthesis and characterization of ceramic catalytic iron oxides, La1-xSrxFexO3 (x=0.10, 0.20, 0.30), of high specific surface”
8th Panhellenic Scientific Conference for Chemical Engineering, Thessaloniki, May 26–28, 2011

19. E. Xenogianakopoulou, P. Pandis, P. Sakkas, C. Andreouli, Ch. Argirusis, and Χ. V. Stathopoulos,
“Development of dense thin films on porous NiO/YSZ substrates for SOFC applications by means of the RF sputtering technique”
8th Panhellenic Scientific Conference for Chemical Engineering, Thessaloniki, May 26–28, 2011

20. Ch. Argirusis, V. Stathopoulos, and G. Sourkouni,
“Synthesis and formation of ceramic membranes SrCe0.95Yb0.05O3 and BaCe0.90Y0.10O3,”
8th Panhellenic Scientific Conference for Chemical Engineering, Thessaloniki, May 26–28, 2011

21. P. Sakkas, Ch. Argirusis, S. Martens, O. Schneider, G. Sourkouni, and V. Stathopoulos,
“Electrochemical synthesis of metal nanoparticles with the use of sonochemistry”
8th Panhellenic Scientific Conference for Chemical Engineering, Thessaloniki, May 26–28, 2011
In the following table 5.3.1 is a list of scientific (peer reviewed) publications relating to the foreground of the project for the first year.

**Table 5.3. 1: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS**

| NO. | Title                                                                 | Main author                        | Title of the periodical or the series | Number, date or frequency | Publisher                         | Place of publication | Year of publication | Relevant pages | Permanent identifiers¹ (if available) | Is/Will open access² provided to this publication?
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<td>2</td>
<td>When a Metastable Oxide Stabilizes at the Nanoscale: Wurtzite CoO Formation upon Dealloying of PtCo</td>
<td>Papaefthimiou V and Zafeiratos S</td>
<td>JOURNAL OF PHYSICAL CHEMISTRY</td>
<td>2, 2011</td>
<td>ACS</td>
<td>2011</td>
<td>2011</td>
<td>900 – 904</td>
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¹ A permanent identifier should be a persistent link to the published version full text if open access or abstract if article is pay per view) or to the final manuscript accepted for publication (link to article in repository).
² Open Access is defined as free of charge access for anyone via the internet. Please answer “yes” if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.
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<td>3</td>
<td>Nontrivial Redox Behavior of Nanosized Cobalt: New Insights from Ambient Pressure X-ray Photoelectron and Absorption Spectroscopies</td>
<td>ACS NANO</td>
<td>5</td>
<td>2011</td>
<td>2182 - 2190</td>
<td>Papaefthimiou V and Zaferatos S</td>
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<td>5</td>
<td>RedOx study of anode-supported solid oxide fuel cell</td>
<td>J. Power Sources</td>
<td>193 (1)</td>
<td>2009</td>
<td>55 - 64</td>
<td>Faes, A.*, Nakajo, A., Hessler-Wyser, A., Dubois, D., Brisse, A., Modena, S, Van herle, J.</td>
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<td>No</td>
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