

Alexandros Katsaounis

Assistant Professor

University of Patras

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Personal Details

Date of Birth: February 12, 1977
Marital Status: Married with two children
Nationality: Greek

Education

1999-2004 PhD in Chemical Engineering
University of Patras, Dept.of Chemical Engineering, Greece
Thesis title: Study of the Electrochemical Promotion of Catalysis using temperature programmed techniques (TPD, TPO and transient experiments) under ultra high vacuum and atmospheric pressure conditions.

1999-2004 Diploma in Chemical Engineering
University of Patras, Dept.of Chemical Engineering, Greece

Professional Experience

2011 - Assistant Professor at University of Patras, Greece
Department of Chemical Engineering
Laboratory of Chemical Processes & Electrochemistry

2010 Visitor Researcher at Ecole Polytechnique Fédérale de Lausanne (EPFL)
Institute of Chemical Sciences and Engineering, Lausanne, Switzerland

2006 - 2010 Lecturer at Technical University of Crete, Greece
Department of Environmental Engineering
Laboratory of Applied & Environmental Electrochemistry

2004-2006 Senior Researcher
University of Patras, Greece
Department of Chemical Engineering
Laboratory of Chemical Processes and Electrochemistry (Prof. C. Vayenas)

Member in organizations

- Member of International Society of Electrochemistry (ISE)
- Member of The Electrochemical Society (ECS)
- Member of the Hellenic Federation of Chemical Engineering

Current Scientific Research

1. Mechanistic Studies on the origin of Electrochemical Promotion of Catalysis (EPOC or NEMCA effect)
2. Electrochemical Promotion of the light hydrocarbons oxidation
3. Preparation and electrochemical characterization of Dimensionally Stable Anodes (DSA) for waste water treatment via electrochemical oxidation
4. Low temperature fuel cells (PEM and DAFC)

Chapters in Books

1. A. Katsaounis, S. Brosda and C.G. Vayenas, "Electrocatalysis" in Encyclopaedia of Electrochemistry, Vol. 5, Wiley-VCH GmbH & Co KGaA, editors A.J. Bard, M. Stratmann etc, 2008
2. A. Katsaounis, "Air Treatment Technologies" in Introduction to Environmental Engineering Science, Technical University of Crete, 2008
3. C.G. Vayenas, A. Katsaounis, S. Brosda and A. Hammad "Electrochemical Modification of Catalytic Activity" in "Handbook of Heterogeneous Catalysis", 2nd edition, editors G. Ertl, H. Knötzinger, F. Schüth and J. Weitcamp, Weinheim, 2008
4. A. Katsaounis and S. Souentie "In-Cell Mediated (via Active Chlorine) Electrochemical Oxidation of Organic Pollutants in Water Using DSA Electrodes" in "Encyclopedia of Applied Electrochemistry", editors R.F. Savinell, Ken-ichiro Ota, G. Kreysa, Springer 2012
5. C.G. Vayenas, A. Katsaounis, S. Brosda and F. Sapountzi, "Electrochemical Promotion of Catalytic Reactions" in "Encyclopedia of Applied Electrochemistry", editors R.F. Savinell, Ken-ichiro Ota, G. Kreysa, Springer 2012

Invited Lectures

"Recent advances in Electrochemical Promotion of Catalysis", 4th Training course: Trends in Electrochemical Promotion of Catalysis (TEPOC), Almagro, Ciudad Real, Spain, November 24-26, 2009

"Effectiveness factor of isopropanol oxidation and various redox couples on IrO₂ based electrodes of different loading", 60th International Society of Electrochemistry Annual Meeting, August 16-21, 2009, China

"Temperature Programmed Desorption Techniques for the origin of Electrochemical Promotion of Catalysis (EPOC)", University of Belgrade, Faculty of Technology and Metallurgy, December 8, 2008

"Electrochemical Promotion of Catalysis (EPOC)... on the way to explore the mechanism of promotion and develop the next generation of electropromoted reactors", 8th European Symposium on Electrochemical Engineering, Prague August 24-28, 2008

"Characterization techniques for electrode applications in PEM fuel cells and electropromoted reactors", 1st training course: Basics and Applications of Solid state Electrochemistry (BASE), Patras, Greece, 2007

Patents

C.G. Vayenas, S. Balomenou, D. Tsiplakides, **A. Katsaounis**, S. Brosda, G. Foti, C. Comninellis, S. Thieman-Handler, B. Cramer, World Intellectual Property Organization (WO/2005/072860).

Awards

Carl Wagner Medal Award in Electrochemical Engineering, European Federation of Chemical Engineering, Working Party on Electrochemical Engineering, 2008.

Publications in Scientific International Journals

- P44. E.I. Papaioannou, E. Siokou, Ch. Comninellis and A. Katsaounis
"Pt-Ir binary electrodes for direct oxidation of methanol in low temperature fuel cells (DMFCs), submitted
- P43. H. Biorn, E. Kalamaras, E.I. Papaioannou, L. Sygellou and A. Katsaounis
"Electrochemical oxidation of alcohols on Pt-TiO₂ binary electrodes", Int. J. Hydrogen Energy, accepted for publication
- P42. V.M. Daskalaki, H. Marakas, D. Mantzavinos, A. Katsaounis, P. Gikas
" Use of seawater for the Boron-doped diamond electrochemical treatment of diluted vinasse wastewater", Water Science and Technology, accepted for publication
- P41. D. Theleritis, S. Souentie, A. Katsaounis and C.G. Vayenas
"Mathematical modeling of Ni/GDC and Au-Ni/GDC SOFC anodes performance under internal methane steam reforming conditions", J. Catalysis, 306 (2013) 116-128
- P40. D. Venieri, E. Chatzisyneon, E. Politi, S. Sofianos, A. Katsaounis, D.Mantzavinos
"Photoelectrocatalytic disinfection of water and wastewater: performance evaluation by qPCR and culture techniques", J. Water and Health, 11 (2013) 21-29
- P39. D. Theleritis, S. Souentie, A. Katsaounis and C.G. Vayenas
"Hydrogenation of CO₂ over Ru/YSZ electropromoted catalysts", ACS Catalysis, 2 (2012) 770
- P38. D. Venieri, E. Chatzisyneon, S. Sofianos, E. Politi, N. Xekoukoulotakis, A. Katsaounis, D. Mantzavinos

- "Removal of faecal indicator pathogens from waters and wastewaters by photoelectrocatalytic oxidation on TiO₂/Ti-films under simulated solar radiation" *Environmental Science & Pollution Research* 19 (2012) 3782–3790
- P37. V. Amstutz, A. Katsaounis, A. Kapałka, Ch. Comninellis and K.-M. Udert
 "Effects of carbonate on the electrolytic removal of ammonia and urea from urine with thermally prepared IrO₂ electrodes", *J. Applied Electrochemistry*, 42 (2012) 787-795
- P36. C. Jiménez-Borja, A. Consuegra, F. Sapountzi, F. Dorado, A. Katsaounis, J.L. Valverde
 "Oscillatory behaviour of Rh/YSZ under electropromoted conditions" *Chemical Physics Letters*, 519-520 (2012) 89-92
- P35. E. Tsantaki, T. Velegraki, A. Katsaounis, D. Mantzavinos
 "Anodic oxidation of textile dyehouse effluents on boron-doped diamond electrode", *Journal of Hazardous Materials*, 207-208 (2012) 91-96
- P34. Z. Frontistis, C. Brebou, D. Venieri, D. Mantzavinos, A. Katsaounis
 "BDD anodic oxidation as tertiary wastewater treatment for the removal of emerging micro-pollutants, pathogens and organic matter" *Journal of Chemical Technology and Biotechnology* 86 (2011) 1233-1236
- P33. E. Turro, A. Giannis, R. Cossu, E. Gidarakos, A. Katsaounis
 "Electrochemical oxidation of stabilised landfill leachate on DSA electrodes", *Journal of Hazardous Materials*, 190 (2011) 460
- P32. V. Daskalaki, E. Timotheatou, A. Katsaounis, D. Kalderis
 "Degradation of Reactive Red 120 using hydrogen peroxide in subcritical water", *Desalination*, 274 (2011) 200
- P31. V. Daskalaki, Z. Frontistis, D. Mantzavinos and A. Katsaounis
 "Solar light-induced degradation of bisphenol-A with TiO₂ immobilized on Ti", *Catalysis Today*, 161 (2011) 110
- P30. A. Nakos, S. Souentie and A. Katsaounis
 "Electrochemical promotion of methane oxidation on Rh/YSZ", *Applied Catalysis B: Environmental*, 101 (2010) 31
- P29. A. Kapałka, A. Katsaounis, N.L. Michels, A. Leonidova, S. Souentie, Ch. Comninellis, Kai M. Udert
 "Ammonia oxidation to nitrogen mediated by electrogenerated active chlorine on Ti/PtO_x-IrO₂", *Electrochemistry Communications* 12 (2010) 1203
- P28. A. Kapałka, S. Fiero, Z. Frontistis, A. Katsaounis, S. Neodo, K.M. Udert and Ch. Comninellis
 "Electrochemical oxidation of ammonia (NH₄⁺/NH₃) on thermally and electrochemically prepared IrO₂ electrodes", *Electrochimica Acta*, 56 (2011) 1361
- P27. E. Chatzisyneon, S. Fierro, I. Karafyllis, D. Mantzavinos, N. Kalogerakis, A. Katsaounis
 "Anodic oxidation of phenol on Ti/IrO₂ electrode: Experimental studies", *Catalysis Today* 151 (2010) 185
- P26. T. Panakoulis, P. Kalatzis, D. Kalderis and A. Katsaounis
 "Electrochemical degradation of Reactive Red 120 using DSA and BDD anodes", *J. Applied Electrochemistry* 40 (2010) 1759
- P25. T. Velegraki, N. Xekoukoulotakis, A. Katsaounis, E. Diamantopoulos and D. Mantzavinos

- "Electrochemical oxidation of benzoic acid in water over BDD electrodes: Statistical analysis of key operating parameters, kinetic modelling, reaction by-products and ecotoxicity", *Chemical Engineering Journal* 160 (2010) 538
- P24. A. Kapalka, S. Fierro, Z. Frontistis, A. Katsaounis, O. Frey, M. Koudelka, Ch. Comninellis and K.M. Udert
 "Electrochemical behaviour of ammonia ($\text{NH}_4^+ / \text{NH}_3$) on electrochemically grown anodic iridium oxide film (AIROF) electrode", *Electrochemistry Communications* 11 (2009) 1590
- P23. Chatzisyneon, E., Xekoukoulotakis, N.P., Diamadopoulos, E., Katsaounis, A. and Mantzavinos, D.
 "Boron-doped diamond anodic treatment of olive mill wastewaters: Statistical analysis, kinetic modeling and biodegradability", *Water Research*, 43 (2009) 3999
- P22. Alexandros Katsaounis
 "Recent developments and trends in Electrochemical Promotion of Catalysis", *Journal of Applied Electrochemistry*, 40 (2010) 885
- P21. E.H. Calderon, A. Katsaounis, R. Wüthrich, P. Mandin, G. Foti, Ch. Comninellis
 "Effectiveness factor of fast ($\text{Fe}^{3+}/\text{Fe}^{2+}$), moderate (Cl_2/Cl^-) and slow ($\text{O}_2/\text{H}_2\text{O}$) redox couples using IrO_2 based electrodes of different loading", *Journal of Applied Electrochemistry*, 39 (2009) 1827
- P20. E.H. Calderon, J. Hahladakis, G. Foti and A. Katsaounis
 "Effectiveness factor of isopropanol oxidation on IrO_2 based electrodes of different loading", *Electrochimica Acta*, 55 (2010) 8215
- P19. N. Papastefanakis, D. Mantzavinos and A. Katsaounis
 "DSA electrochemical treatment of olive mill wastewater on Ti/RuO₂ anode", *J. Applied Electrochemistry* 40 (2010) 729
- P18. E. Chatzisyneon, A. Dimou, D. Mantzavinos, Ch. Comninellis and A. Katsaounis
 "Electrochemical Oxidation of model compounds and Olive Mill Wastewater over DSA electrodes: 1. The case of Ti/ IrO_2 ", *Journal of Hazardous Materials*, 167 (2009) 268
- P17. A. Katsaounis
 "Temperature programmed desorption of oxygen from Pd films interfaced with Y_2O_3 -doped ZrO_2 ", *Journal of Applied Electrochemistry*, 38 (2008) 1097
- P16. A. Katsaounis
 "Electrochemical promotion of catalysis (EPOC): Perspectives for application to gas emissions treatment", *Global Nest Journal*, 10 (2008) 225
- P15. C.G. Vayenas, M. Tsampas and A. Katsaounis
 "First principles analytical prediction of the conductivity of Nafion membranes", *Electrochimica Acta*, 52 (2007) 2244-2256
- P14. S. Balomenou, D. Tsiplakides, A. Katsaounis, S. Brosda, G. Foti, Ch. Comninellis, S. Thiemann-Handler, B. Cramer, and C.G. Vayenas
 "Monolithic Electrochemically Promoted Reactors: A step for the practical utilization of Electrochemical Promotion", *Solid State Ionics*, 177 (2006) 2201
- P13. A. Katsaounis, M. Tsampas, S.P. Balomenou, D. Tsiplakides and C.G. Vayenas
 "Potential-dependent electrolyte resistance and steady-state multiplicities of PEM fuel cells" *Solid State Ionics*, 177 (2006) 2397
- P12. C.G. Vayenas and A. Katsaounis

- "Proton and electron wave-particles in chemical and physical environments" *Applied Catalysis B: Environmental*, 64 (2006) 111
- P11. C. Koutsodontis, A. Katsaounis, J.C. Figueroa, C. Cavalca and C.G. Vayenas
"The effect of catalyst film thickness on the magnitude of the Electrochemical Promotion for the case of ethylene oxidation on Pt/YSZ" *Topics in Catalysis*, 39 (2006) 97-100
- P10. C. Koutsodontis, A. Katsaounis, J.C. Figueroa, C. Cavalca and C.G. Vayenas
"The effect of catalyst film thickness on the magnitude of the Electrochemical Promotion of catalytic reactions" *Topics in Catalysis*, 38 (2006) 157
- P9. M. Tsampas, A. Picos, S. Brosda, A. Katsaounis and C.G. Vayenas
"The effect of membrane thickness on the conductivity of Nafion", *Electrochimica Acta*, 51 (2006) 2743-2755
- P8. A. Katsaounis, S.P. Balomenou, D. Tsiplakides and C.G. Vayenas
"The role of potential-dependent electrolyte resistance in the performance and steady-state multiplicities of PEM fuel cells: Experimental investigation and macroscopic modeling" *Electrochimica Acta*, 50 (2005) 5132
- P7. D. Tsiplakides, S. Balomenou, A. Katsaounis, C. Koutsodontis and C.G. Vayenas
"Electrochemical promotion of Catalysis: Mechanistic investigations and monolithic electropromoted reactors", *Catalysis Today*, 100 (2005) 133
- P6. A. Katsaounis, S. Balomenou, D. Tsiplakides, S. Brosda, S.G. Neophytides and C.G. Vayenas
"Proton tunneling-induced bistability, oscillations and enhanced performance of PEM fuel cells", *Applied Catalysis B: Environmental*, 56 (2004) 237
- P5. A. Katsaounis, Z. Nikopoulou, X.E. Verykios and C.G. Vayenas
"Comparative isotope-aided investigation of Electrochemical Promotion and Metal-Support Interactions: 2. CO oxidation by $^{18}\text{O}_2$ on electropromoted Pt films deposited on YSZ and on nanodispersed Pt/YSZ catalysts", *Journal of Catalysis*, 226 (2004) 197
- P4. S. Balomenou, D. Tsiplakides, A. Katsaounis, S. Thiemann-Handler, B. Cramer, G. Foti, Ch. Comninellis and C.G. Vayenas
"Novel monolithic electrochemically promoted catalytic reactor for environmentally important reactions", *Applied Catalysis B: Environmental*, 52 (2004) 181
- P3. A. Katsaounis, Z. Nikopoulou, X.E. Verykios and C.G. Vayenas
"Comparative isotope-aided investigation of Electrochemical Promotion and Metal-Support Interactions: 1. $^{18}\text{O}_2$ TPD of electropromoted Pt films deposited on YSZ and of dispersed Pt/YSZ catalysts", *Journal of Catalysis*, 222 (2004) 192
- P2. F. Tietz, Ch. Papadelis, D. Tsiplakides, A. Katsaounis and C.G. Vayenas
"Temperature Programmed Oxygen Desorption of the Perovskites Series $\text{Ln}_{0.65}\text{Sr}_{0.3}\text{Mn}_{0.8}\text{Co}_{0.2}\text{O}_3$ (Ln: La-Gd)", *Ionics*, 7 (2001) 101
- P1. C.G. Yiokari, G.E. Pitselis, D.G. Polydoros, A.D. Katsaounis and C.G. Vayenas
"High-Pressure Electrochemical Promotion of Ammonia Synthesis over an Industrial Iron Catalyst", *The Journal of Physical Chemistry A*, 104 (1999) 10600-10602

Participations in Scientific International and European Conferences

Portugal

1. "*Electrochemical Promotion of CO₂ Hydrogenation on Ru/ β "'-Al₂O₃ (Na⁺)*",
M.Makri, D. Theleritis, A. Katsaounis, C.G. Vayenas

2. "*CO₂ Hydrogenation Over Ru/YSZ Electropromoted Catalysts in a High Pressure Reactor*",
D.Theleritis, S. Souentie, A. Katsaounis, C.G. Vayenas

12-14/09/12 **3rd International Conference on Industrial and Hazardous Waste Management, Chania, Greece**

"Removal of faecal indicator pathogens from waters and wastewaters by photoelectrocatalytic oxidation on TiO₂/Ti-films under simulated solar radiation",
D. Venieri, E. Chatzisyneon, S. Sofianos, E. Politi, N. Xekoukoulotakis, A. Katsaounis and D. Mantzavinos

19-24/08/12 **63rd Annual Meeting of the International Society of Electrochemistry, Prague, Czech Republic**

1. "*Pt-TiO₂ binary electrodes for electrochemical oxidation of alcohols*",
E. Papaioannou and A.Katsaounis

2. "*Effect of thermal treatment on the electrocatalytic properties of Pt-Ir binary electrodes for DAFC*"
E. Papaioannou and A.Katsaounis

3. "*Solar-induced photoelectrocatalytic degradation of bisphenol-A on TiO₂ ITO-film anode and BDD cathode*"

V. Daskalaki, Z. Frontistis, A. Katsaounis and D. Mantzavinos

4. "*Triode operation of CO poisoned PEM fuel cells*"

S. Divane, A. Gousev, E. Martino, A. Katsaounis and C.G. Vayenas

01-06/07/12 **15th International Congress on Catalysis, Munich, Germany**

"CO₂ hydrogenation over Ru electropromoted catalysts",
D. Theleritis, S. Souentie, A.Katsaounis and C.G. Vayenas

29-30/09/11 **2nd European Symposium on Photocatalysis, Bordeaux, France**

1. "*Removal of fecal indicator pathogens from waters and wastewaters by means of photoelectrochemical oxidation*",
V.D.Mantzavinos, E.Chatzisyneon, S.Sofianos, N.Politi, N.Xekoukoulotakis,
A.Katsaounis and D.Venieri

19-23/06/11 **9th European Symposium on Electrochemical Engineering, Chania, Greece**

1. "*BDD anodic oxidation as tertiary wastewater treatment for estrogens and pathogens removal*",
C. Brebou, Z. Frontistis, D. Venieri, N.P. Xekoukoulotakis, D. Mantzavinos and A. Katsaounis

2. "*Photoelectrochemical disinfection of secondary treated wastewaters*"
E. Chatzisyneon, S. Sofianos, N. Politi, A. Katsaounis, D. Mantzavinos and D. Venieri

3. "Effectiveness factor of three-dimensional Ti/IrO₂ anodes"

G. Foti, E.H. Calderon, A. Katsaounis and Ch. Comninellis

4. "Influence of carbonate on anodic chlorine mediated ammonia oxidation"

V. Amstutz, A. Katsaounis, A. Kapalka, K. Udert and Ch. Comninellis

5-8/10/10

2nd International Conference on Hazardous and Industrial Waste Management, Chania, Greece

1. "Electrochemical degradation of textile effluents by anodic oxidation on boron doped diamond",

T. Velegraki, E. Tsantaki, D. Mantzavinos and A. Katsaounis

2. "Electrochemical degradation of ECDs by anodic oxidation on boron-doped diamonds"

Z. Frontistis, C. Brebou, A. Katsaounis and D. Mantzavinos

3. "Electrochemical oxidation of stabilized landfill leachate over DSA[®] electrodes on IrO₂ and RuO₂"

A. Giannis, E. Turro, R. Cossu, E. Gidarakos and A. Katsaounis

27/9-1/10/10

61th International Society of Electrochemistry Annual Meeting, Nice, France

1. "Induced oscillations by NEMCA effect over Rh electrochemical catalyst",

C. Jiménez Borja, A. Nakos, F. Dorado, A. Katsaounis and José Luis Valverde

2. "Electrochemical degradation of Reactive Red 120 using DSA and BDD anodes"

T. Panakoulis, P. Kalatzis, D. Kalderis and A. Katsaounis

3. "Ammonia Oxidation to Nitrogen Mediated by Electrogenerated Active Chlorine on Ti/Pt-IrO₂"

A. Katsaounis, A. Kapalka, N.-L. Michels, A. Leonidova, S. Souentie and Ch. Comninellis

5-9/07/10

10th International Protection and Restoration of the environment Conference, Corfu Island, Greece

1. "Use of Seawater for electrocatalytic treatment of ethanol distillation byproducts",

Daskalaki, H. Marakas, D. Mantzavinos, A. Katsaounis, P. Gikas

16-21/8/09

60th International Society of Electrochemistry Annual Meeting, Beijing, China

"Effectiveness factor of isopropanol oxidation and various redox couples on IrO₂ based electrodes of different loading",

E. Calderon, J. Hahladakis, G. Foti and A. Katsaounis

24-28/8/08

8th European Symposium on Electrochemical Engineering, Prague, Czech Republic

"Electrochemical Promotion of Catalysis (EPOC)... on the way to explore the mechanism of promotion and develop the next generation of electropromoted reactors"

A. Katsaounis

1-3/10/08

1st International Conference on Hazardous Waste Management, Chania, Greece

"Electrochemical oxidation of Olive Mill Wastewater over DSA electrodes based on

IrO₂"

E. Chatzisymeon, A. Dimou, D. Mantzavinos and A. Katsaounis

5-7/09/07

10th International Conference on Environmental Science and Technology, Kos island, Greece

"Electrochemical promotion of catalysis (EPOC): Perspectives for application to gas emissions treatment"

A. Katsaounis

26-31/08/07

Europacat-VIII, Turku/Abo, Finland

1. *"¹⁸O₂ tracer investigation of the origin of metal-support interactions of Pt supported catalysts"*.

A. Katsaounis and C.G. Vayenas

2. *"Proton tunneling in PEM fuel cell"*

M. Tsampas, A. Katsaounis and C.G. Vayenas

28/08-1/09/05

Europacat-VII, Sofia, Bulgaria

1. *"The Role of Potential-Dependent Electrolyte Resistance in the Performance and Steady-state Multiplicities of PEM Fuel Cells"*.

A. Katsaounis, M. Tsampas, S.P. Balomenou, D. Tsiplakides and C.G. Vayenas

2. *"Monolithic Electrochemically promoted reactors: A step for practical utilization of electrochemical promotion"*

S.P. Balomenou, D. Tsiplakides, **A. Katsaounis**, S. Brosda, G. Foti, Ch. Comninellis, S. Thiemann-Handler, B. Cramer and C.G. Vayenas

3. *"The effect of membrane thickness, potential and gas composition on the conductivity of Nafion: Experiment and Theory"*

M. Tsampas, A. Picos, **A. Katsaounis**, S. Brosda and C.G. Vayenas

4. *"The effect of film thickness on the Electrochemical Promotion of C₂H₄ oxidation on Pt paste films deposited on YSZ"*

C. Koutsodontis, **A. Katsaounis** and C.G. Vayenas

5. *"Oxygen ion mobility and its influence on chemisorptive and kinetic parameters"*

Z. Nikopoulou, **A. Katsaounis**, C.G. Vayenas and X.E. Verykios

17-22/07/05

SSI-15 International Conference on Solid State Ionics, Baden-Baden, Germany

1. *"The Role of Potential-Dependent Electrolyte Resistance in the Performance and Steady-state Multiplicities of PEM Fuel Cells"*.

A. Katsaounis, M. Tsampas, S.P. Balomenou, D. Tsiplakides and C.G. Vayenas

2. *"Monolithic Electrochemically promoted reactors: A step for practical utilization of electrochemical promotion"*

S.P. Balomenou, D. Tsiplakides, A. Katsaounis, S. Brosda, G. Foti, Ch. Comninellis, S. Thiemann-Handler, B. Cramer and C.G. Vayenas

3. *"The effect of membrane thickness, potential and gas composition on the conductivity of Nafion: Experiment and Theory"*

M. Tsampas, A. Picos, A. Katsaounis, S. Brosda and C.G. Vayenas

4. *The effect of film thickness on the Electrochemical Promotion of C₂H₄ oxidation on Pt*

paste films deposited on YSZ”
C. Koutsodontis, A. Katsaounis and C.G. Vayenas

15-20/05/05 **207th Meeting of The Electrochemical Society, Quebec City, Canada**

“The Role of Potential-Dependent Electrolyte Resistance in the Performance and Steady-state Multiplicities of PEM Fuel Cells”
A. Katsaounis, M. Tsampas, S.P. Balomenou, D. Tsiplakides and CG Vayenas

26-28/01/05 **First Conference of the European Union Coordination Action “CO-ordination of Nanostructured Catalytic Oxides Research and Development in Europe”: CONCORDE, Louvain-la-Neuve, Begium**

“Oxygen ion mobility in metal oxides used as catalysts or catalyst carriers”
Z. Nikopoulou, A. Katsaounis, C.G. Vayenas and XE Verykios

19-24/09/04 **55th Annual Meeting of International Society of Electrochemistry, Thessaloniki, Greece**

1. “Monolithic Electrochemically Promoted Reactor: A Step for Practical Utilization of Electrochemical Promotion”

S.P. Balomenou, D. Tsiplakides, A. Katsaounis, S. Brosda, G. Fóti, Ch. Comninellis, S. Thiemann-Handler, B. Cramer and C.G. Vayenas

2. “Electrochemical promotion of ethylene oxidation on thick Rh and Pt films deposited on a YSZ plate in a MEP reactor”

S.P. Balomenou, D. Tsiplakides, A. Katsaounis, S. Poulston, V. Houel, S. Thiemann-Handler, B. Cramer and C.G. Vayenas

3. “¹⁸O₂ isotope investigation of electrocatalysis and electropromotion in solid electrolyte cells”

A. Katsaounis and C.G. Vayenas

4. “Electrochemical promotion of oxidation reactions and NO reduction on Pt and Rh catalyst electrodes”

C. Koutsodontis, I. Constantinou, A. Katsaounis, D. Tsiplakides and C.G. Vayenas

5. “The Role of potential-dependent electrolyte resistance in the performance ad steady state multiplicities of PEM fuel cells.”

A. Katsaounis, S.P. Balomenou, D. Tsiplakides and C.G. Vayenas

11-16/07/04 **13th International Congress on Catalysis, Paris, France**

1. “Electrochemical promotion and metal-support Interactions with O²⁻ conducting supports: Size effects and modeling of the role of O²⁻ spillover”

S. Balomenou, A. Katsaounis and C.G. Vayenas

2. “Isotope Tracer and STM Investigation of the Origin of Electrochemical Promotion of Catalysis and of Metal-Support Interactions”

A. Katsaounis, D. Archonta and C.G. Vayenas

16-21/05/04 **10th Int. Conference. on Properties and Phase Equilibria for Product and Process Design (PPEPPD), Snowbird, Utah, U.S.A.**

“Thermodynamics and adsorbed species and the double layer approach to catalysis”
C.G. Vayenas (invited), C. Pliangos, C. Brosda, A. Katsaounis and D. Tsiplakides

- 16-21/11/03 **Annual Meeting of AIChE, San Francisco, USA**
1. "Isotope tracer investigation of the origin of electrochemical promotion of catalysis"
A. Katsaounis and C.G. Vayenas
 2. "¹⁸O₂ tracer investigation of the origin of metal-support interactions"
A. Katsaounis, Th. Halkides, X.E. Verykios and C.G. Vayenas
- 30/8-05/9/03 **54th Annual Meeting of International Society of Electrochemistry, São Pedro, Brazil**
- "Isotope tracer investigation of the origin of electrochemical promotion of catalysis"
A. Katsaounis and C.G. Vayenas
- 16-21/09/02 **9th Euroconference on Science and Technology of Ionics, Ixia, Rhodes, Greece**
- "Thermal Desorption Study of Oxygen Adsorption on Pd films deposited on YSZ and β"-Al₂O₃"
A. Katsaounis, D. Tsiplakides and C.G. Vayenas
- 01-08/10/00 **7th Euroconference on Science and Technology of Ionics, Corsica, France**
- "Temperature Programmed Oxygen Desorption of the Perovskites Series Ln_{0.65}Sr_{0.3}Mn_{0.8}Co_{0.2}O₃ (Ln=La-Gd)
F. Tietz, Ch. Papadelis, D. Tsiplakides, A. Katsaounis and C.G. Vayenas

Participations in Scientific Research Projects

As Scientific Director

- | | |
|-----------|---|
| 2007-2008 | Greek Research Program (from Technical University of Crete)
"Catalytic treatment of soot from diesel engines"
(budget: € 5000,00) |
| 2008-2010 | Greek Research Program (from Technical University of Crete)
"Development and study of low temperature direct alcohol fuel cells"
(budget: € 12000,00) |
| 2009-2010 | Research Program with Industry (FINOBETON Cement Industry)
"Measurement and distribution of gas emissions"
(budget: € 10000,00) |

As Member of the research team

- | | |
|-----------|--|
| 2004-2006 | Greek Programme 04 AKMON 61 supported from the Greek General Secretary of Research and Technology
(role in the program: main researcher
Scientific Director: Costas Vayenas) |
|-----------|--|

- 1999-2002 Greek Project GR1 AK991 6239 supported from the Greek General Secretary of Resea
 "Study of the mechanism of Catalyst Deactivation for ethylene oxide and vinyl acetate
 reactions the programm: main researcher
 (Scientific Director Costas Vayenas)
 Scientific Director: Costas Vayenas
- 2004-2006 Greek Project GR4 AK041 6146 (ESF) supported from the General Secretary of Resea
 "Electrochemical Promotion of Ammonia Synthesis from N₂ and H₂"
 (Scientific Director Costas Vayenas)
 Scientific Director: Costas Vayenas