



2<sup>nd</sup> international conference on the **E**lectrochemical **P**romotion **O**f **C**atalysis  
and its **A**pplications

Oléron Island, France

September 29<sup>th</sup> –October 3<sup>rd</sup> 2008

# PROGRAMME

## TOPICS:

Development of electrochemical reactors  
Elaboration and characterization of catalyst thin films  
EPOC for fuel cells  
Electrochemical sensors  
EPOC for environmental and energy applications

Chairman	MONDAY 29 <sup>th</sup> SEPTEMBER		
Prof C.G. Vayenas (University of Patras) Miss A. Stevens	KL1	C. Guizard (Saint-Gobain CREE, France)	Elaboration and characterization of catalyst thin films
	O1	S. Brosda (University of Patras, Greece)	Electrochemical investigations of the gas exposed Rh/YSZ interface under reaction conditions
	O2	E. Siebert (LEPMI - ENSEEG, France)	Reduction properties of La <sub>0.7</sub> Sr <sub>0.3</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3</sub> perovskite oxide catalyst
Dr Y. Sakamoto (Toyota) Miss D. Poulidi	O3	V. Kournoutis (University of Patras, Greece)	CO combustion on La-Sr-Fe and La-Sr-Co-Fe perovskites
	O4	J-P. Viricelle (Ecole Nationale Supérieure des Mines de Saint-Etienne, France)	Developpement of a Single Chamber Solid Oxide Fuel Cell (SCFC)
	O5	L. N. Cleemann (The Technical University of Denmark)	Electrochemical promotion in the CO,H <sub>2</sub> / (Pt/Ru)/PBI (H <sub>3</sub> PO <sub>4</sub> )/Pt/H <sub>2</sub> membrane fuel cell system at 140°C
Prof J.L. Valverde (University of Castilla La Mancha) Dr A. Princivalle (SAINT-GOBAIN)	KL2	J. L. Valverde (Universidad de Castilla-La Mancha, Spain)	Effective Harnessing of Electrochemical & Electronic Catalytic/Electrocatalytic Effects in Chemical Reactors as Essential Components of New & Sustainable Environmental Solutions
	O6	E. Lay (Commissariat à l'Energie Atomique de Grenoble (CEA-G), LEPMI-ENSEEG, France)	On the influence of cerium in Ce-substituted LSCM as a new SOFC electrode material
	O7	F.M.Sapountzi (University of Patras, Greece)	A comparative study of PEM fuel cell performance in presence of CO using Pt and Au anodes
Prof S. Neophytides Miss C. Jimenez-Borja (University of Castilla La Mancha)	O8	G. S. Tasic (Vinca Institute of Nuclear Sciences, Serbia)	On the Use of Different Electrocatalysts in PEMFC for H/D Isotope Separation
	O9	P. Coddet (University of Technology of Belfort Montbeliard, France) / (FEMTO-ST / ENISYS, France)	Electrochemical characterisation of Yttria Stabilised Zirconia Coatings Reactively Sputter Deposited
	O10	M. P. Marceta Kaninski (Vinca Institute of Nuclear Sciences, Serbia)	Electrochemical D/H Isotope Effects on PEM Fuel Cell with different Pt loading

Chairman	TUESDAY 30 <sup>th</sup> SEPTEMBER		
Dr C. Guizard (SAINT-GOBAIN) Miss F. Sapountzi (University of Patras)	KL3	D. Tsiplakides (CPERI-CERTH, Greece)	Electrochemical Promoted Catalysis: Towards Practical Utilization
	O11	C. Falgairette (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Persistent-EPOC related to charge storage at the Pt/YSZ interface, Thermal stability study
	O12	E. Papaioannou (University of Patras, Greece)	Hydrocarbon production via electrochemical promotion of the reverse water gas shift reaction
Chair: Prof A. Billard (University of Montbeliard) Miss M. Mercata Kaninski	O13	C. Pirovano (Unité de Catalyse et de Chimie du Solide, France)	BITAVOX electrolyte for the Electrochemical Promotion of Catalysis at low temperature
	O14	M.N. Tsampas (University of Patras, Greece)	Electrochemical promotion of CO oxidation on Pt/YSZ
	O15	D. Poulidi (Newcastle University, UK)	Electrochemical promotion of the high-temperature proton conductor LaNb <sub>0.99</sub> Sr <sub>0.01</sub> O <sub>4-δ</sub>
Dr. Nikola Anastasijevic (OUTOTEC)	ROUND TABLE on EPOC Applications		<p>1/ Fundamentals: what could be done to extend chances for commercial application of NEMCA effect?</p> <p>2/ Scale-up: What are technological bottlenecks for commercial application of NEMCA?</p> <p>3/ Applications: what are the industrial targets?</p>

Chairman		WEDNESDAY 1 <sup>st</sup> OCTOBER	
Dr S. Balomenou (CPERI) / Mr C. Falgairrette (EPFL)	KL4	J. L. Valverde (Universidad de Castilla-La Mancha, Spain)	A new improvement of catalysis by solid state electrochemistry. An electrochemical assisted NOx storage/reduction catalyst
	O16	A. Billard (Université de Technologie de Belfort-Montbéliard, France)	Pt/CGO electrochemical catalysts for low temperature oxidation of propane in the presence of water stream
	O17	A. de Lucas-Consuegra (Universidad de Castilla La Mancha, Spain)	Pt/K-βAl <sub>2</sub> O <sub>3</sub> solid electrolyte cell as an a smart electrochemical catalyst for the effective removal of NOx under wet reaction conditions
Prof M. Jaksic (University of Belgrade) Miss K. Papisizi (CEPRI)	O18	A. Caravaca (Universidad de Castilla La Mancha, Spain)	Oxidation of NO to NO <sub>2</sub> over supported Pt based catalyst and electrochemical catalyst
	O19	Y. Sakamoto (Toyota Central R&D Labs. Inc.)	Temperature dependence of the electrochemically promoted NO reduction with C <sub>3</sub> H <sub>6</sub> in presence of O <sub>2</sub> using a Rh deposited electrode
	O20	A. Hadjar (Saint-Gobain CREE/University Lyon 1 France) / (Université Lyon 1, France)	YSZ as a NOx Storage Material for NSR catalyst

Chairman		THURSDAY 2 <sup>nd</sup> OCTOBER	
Dr S. Brosda (University of Patras) Dr M. Guth (University of Lyon)	KL5	S. G. Neophytides (Institute of Chemical Engineering and High Temperature Processes, Greece)	Electrochemical Metal support interactions. The role of electrochemical interface in the promotion of supported metal catalysts
	O21	V. Roche ( Université Lyon 1/ LEPMI-ENSEEG, France), (LEPMI - ENSEEG, France)	Origins of the electrochemical activation of LSM/YSZ for the propane deep oxidation
	O22	C. Capdeillayre (Université Lyon 1, France)	Preparation and characterisation of supported gold-platinum catalysts for nitrogen oxides sensors
Prof W. Harbich (EPFL) Dr C. Capdeleire (University of Lyon)	O23	F. Gaillard (Université de Lyon 1, France)	Use of silver as a catalyst-electrode in EPOC of toluene deep oxidation
	O24	S. Souentie (University of Patras, Greece)	NO reduction by C <sub>2</sub> H <sub>4</sub> in presence of high excess oxygen using a Monolithic ElectroPromoted Reactor equipped with Rh/YSZ/Pt electrocatalytic elements
	O25	A. V. Stevens (Cambridge University, England)	Hydrocarbon sensing under UHV conditions: Principle and Practice
Dr I. Petrushina (Technical University of Denmark) Mr A. De Lucas Consuegra (University of Castilla La Mancha)	KL6	W. Harbich (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Monodispersed catalysts with a countable number of atoms

## THURSDAY 2<sup>nd</sup> OCTOBER

<b>POSTER SESSION</b>	P1	C. Jiménez-Borja (Universidad de Castilla La Mancha, Spain)	Complete oxidation of methane on Pd/K- $\beta$ Al <sub>2</sub> O <sub>3</sub> by electrochemical promotion
	P2	A. Lintanf (LEPMI - ENSEEG, France)	Catalytic performances of nanostructured Pt membranes prepared by Electrostatic Spray Deposition. Electrochemical promotion of NO reduction by C <sub>3</sub> H <sub>6</sub>
	P3	A. Toghian (University of Hanover, Germany)	"Ellipsometric study of the electrochemical promotion of catalytic CO oxidation with Pt/YSZ catalysts"
	P4	L. Mazri (Université Lyon 1, France)	Substitution of manganese by zirconium in LSM perovskites by SHS synthesis. Influence on catalytic deep oxidation of propene
	P5	A.A. Markov (Institute of Solid State Chemistry Ural Branch of Russian Academy of Sciences Ekaterinburg, Russian Federation)	Development of laboratory catalytic membrane reactors for partial oxidation of methane: impact of sizes and geometry.
	P6	L. N. Cleemann (The Technical University of Denmark)	CO electrochemical reduction in a CO/ (Pt/Ru)  PBI (H <sub>3</sub> PO <sub>4</sub> )  Pt/H <sub>2</sub> membrane cell at 150°C
	P7	A. Princiville (Saint-Gobain CREE, France)	Nanodispersed Pt/YSZ catalysts for propane deep oxidation
	P8	A. Bochra (Faculté des Sciences de Tunis., Tunis)	TiO <sub>2</sub> nanotubes promoting Pt/C catalysts for methanol electro-oxidation in acidic media
	P9	L. Lizarraga (NQUIMAE and Departamento de Química Inorgánica, Analítica y Química Física, Facultad de Ciencias Exactas y Naturales, Argentina)	Study of structural and electrochemomechanical properties of aniline/2 metoxianiline copolymers
	P10	M. E. Monge (Facultad de Ciencias Exactas y Naturales de Buenos Aires, Argentina)	A novel design of potentiometric sensors for metal ions detection
	P11	V. M. Nikolic ( Vinca Institute of Nuclear Sciences, Serbia)	Electrochemical impedance spectroscopy diagnosis of fuel cells as D/H isotope separating unit
	P12	K. G. Papazisi (CPERI-CERTH, Greece)	Regenerative PEM fuel cells for space applications
	P13	M. Guth (Unversité Lyon 1, France)	Doped LaMnO <sub>3</sub> and LaFeO <sub>3</sub> perovskites catalysts for Diesel soot combustion
	P14	R. Cozic (SRA Instruments)	Development of a transportable gas analyzer: micro thermal desorber / micro gas chromatograph / mass spectrometer detector coupling (m-TD / m-GC / MSD) - Application to on-line analysis of volatile organic compounds at traces level

**Chairman**

## FRIDAY 3<sup>rd</sup> OCTOBER

Dr D. Tsiplakides (CEPRI) Dr V. Roche (University of Lyon)	KL7	M. M. Jaksic (University of Belgrade, Serbia)	Electrocatalysis and Electrochemical Promotion for Hydrogen and Oxygen Electrode Reactions in the Light of Hypo-Hyper-d-d-Electronic Correlations
	O26	J. Gao (Ecole des Mines de Saint Etienne, France)	Investigation of mixed potential detection in automotive exhaust stream
	O27	M.V. Patrakeev (Institute of Solid State Chemistry Ural Branch of Russian Academy of Sciences Ekaterinburg, Russian Federation)	The partial oxidation of methane in catalytic membrane reactors: evolution of the process parameters
	O28	M. Topcu Sulak (Gebze Institute of Technology, Turkey)	Electrochemical Laccase Biosensor (Trametes versicolor) for Determination of Phenol