

September 20-23, 2011  
City of Cuernavaca México

XI International

**Hydrogen Congress**

*an event of* The Mexican Hydrogen Society

Cuernavaca...

The Endless Spring

# TECHNICAL PROGRAM



*Renewable Hydrogen*

The Scientific Committee and

*The Organizing Committee*



**W**elcome to the 11<sup>th</sup> edition of the Hydrogen congress of the Mexican Hydrogen Society. In this occasion we are honoring *Renewable Hydrogen*, as this clean fuel is becoming more and more important as an option for energy storage of intermittent renewable primary sources. As renewable energy technologies get a larger participation in the electricity generation, in particular through PV solar and wind energy, dispatching installed capacity is of paramount importance. Hydrogen can be one way to resolve such challenge and could become a parallel energy vector to electricity.

**T**his 2011 edition will see technical contributions of all aspects of hydrogen energy, from its generation, its storage to its application. We will also have proposals presenting renewable energy systems and their related studies. As an effort of the Mexican Hydrogen Society and the organizers for the promotion of the technology transfer of scientists and engineers dedicated to work on hydrogen and renewable energy, we will have a one-day course on Technology Transfer. Don't miss this opportunity to understand the complexities of bringing an invention to commercial reality.

We hope you will enjoy this event and will find it not only technically interesting but also enjoyable from the social point of view, as we will have a cultural surprise on Wednesday 21 and we will share at dinner on Thursday 22 with traditional Mexican music.

Please make this an opportunity to renew old friendship with your colleagues and make new friends in sunny Cuernavaca. Welcome to the Endless Spring and help spread Renewable Hydrogen benefits...!

*The Organizing Committee*



## OUR SPONSORS

A special thanks goes to the Energy Network from the Mexican Council for Science and Technology for their generosity during the organization of this meeting.

Red de Fuentes de  
Energía del CONACYT



We are also very grateful to the following local authorities SECTUR, FITUR and INAH, CCYTEM in Morelos for their assistance in different facets of the social and cultural parts of this event.



The following are also crucial sponsors participating of this XI International Hydrogen Congress:



We want to thank the two host institutions that took part of the main organization of this event, Instituto de Investigaciones Eléctricas and Centro de Investigaciones en Energía:

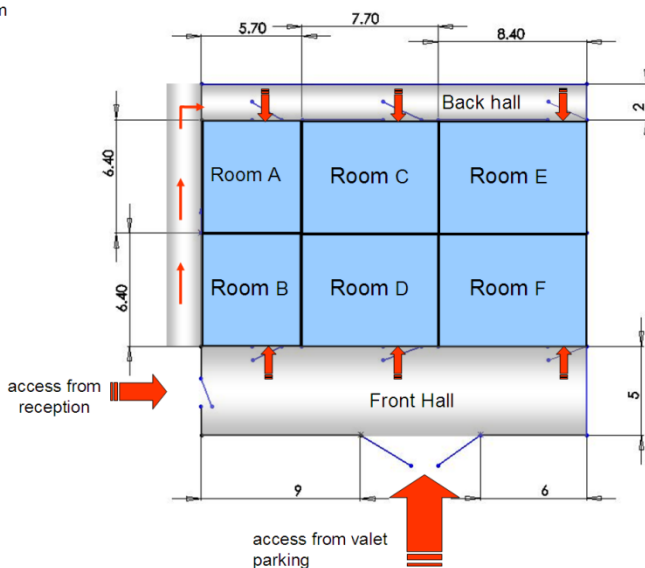


# Local Map

- Technical Parallel Sessions will take place in Rooms E and F.
- Plenary Talks and Poster Session will be held in Room C-D (see general program for time schedule) \*
- Industry Expo Stands are located in Rooms A-B and Front Hall

## Congress Rooms

scale 1:1m



Please note that lunch will be served in the Hotel's Restaurant

\*Please follow instructions from organizers for other events or any change.

# FULL PROGRAM

## Technology Transfer Workshop

Tuesday 20 of September, 2011.

### Room C-D

TIME	TUESDAY 20
08:00	ON-SITE REGISTRATION
09:00 – 10:00	TECHNOLOGY TRANSFER WORKSHOP
10:00 – 11:00	
11:00 – 11:20	COFFEE BREAK
11:20 – 13:00	TECHNOLOGY TRANSFER WORKSHOP
13:00 – 14:00	LUNCH
14:00 – 15:00	TECHNOLOGY TRANSFER WORKSHOP
15:00 – 16:00	
16:20 – 17:40	COFFEE BREAK

## Energy Network Meeting

### Room C-D

17:40 – 19:40	ENERGY NETWORK MEETING
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Energía del CONACYT

## Terrace

19:40	WELCOME COCKTAIL
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# International Hydrogen Congress

**Wednesday 21 of September, 2011**

<b>08:00</b>	<b>COFFEE AND REGISTRATION</b>	
	<b>Room C-D</b>	
<b>09:00</b>	<b>OPENING CEREMONY</b>	
<b>09:30</b>	<b>PLENARY SESSION 1</b>	
	<b>Room E</b>	<b>Room F</b>
<b>10:30</b>	<b>Energy Strategies and Studies ID 15</b>	<b>Hydrogen Storage ID 32</b>
<b>10:50</b>	<b>Energy Strategies and Studies ID 34</b>	<b>Hydrogen Storage ID 37</b>
<b>11:10</b>	<b>Renewable Energy ID 66</b>	<b>Hydrogen Storage ID 47</b>
<b>11:30</b>	<b>COFFEE BREAK</b>	
<b>11:40</b>	<b>Energy Strategies and Studies ID 36</b>	<b>Fuel Cells Components ID 38</b>
<b>12:00</b>	<b>Energy Strategies and Studies ID 68</b>	<b>Fuel Cells Components ID 39</b>
<b>12:20</b>	<b>Renewable Energy ID 17</b>	<b>Fuel Cells Components ID 93</b>
<b>12:40</b>	<b>Renewable Energy ID 60</b>	<b>Fuel Cells Components ID 91</b>
<b>13:00</b>	<b>LUNCH</b>	
<b>15:00</b>	<b>PLENARY SESSION 2 (Room C-D)</b>	
<b>16:00</b>	<b>Hydrogen Systems ID 86</b>	<b>Hydrogen Systems ID 31</b>
<b>16:20</b>	<b>Fuel Cells Applications ID 22</b>	<b>Hydrogen Generation ID 62</b>
<b>16:40</b>	<b>Fuel Cells Applications ID 35</b>	<b>Hydrogen Generation ID 83</b>
<b>18:00 – 20:00</b>	<b>CULTURAL AND SOCIAL EVENT</b>	

## Thursday 22 of September, 2011

08:00	COFFEE AND REGISTRATION	
	Room C-D	
09:00	PLENARY SESSION 3	
	Room E	Room F
10:00	Renewable Energy ID 18	Modeling ID 69
10:20	Renewable Energy ID 19	Modeling ID 84
10:40	Renewable Energy ID 20	Modeling ID 55
11:00	Renewable Energy ID 41	Fuel Cells Components ID 63
11:20	INDUSTRY PRESENTATIONS	
12:20	Fuel Cells Components ID 40	Hydrogen Generation ID 10
12:40	Fuel Cells Components ID 78	Hydrogen Generation ID 12
13:00	Fuel Cells Components ID 79	Hydrogen Generation ID 26
13:20	Fuel Cells Components ID 96	Hydrogen Generation ID 29
13:40	LUNCH	
	Room C-D	
15:30	PLENARY SESSION 4	
16:30	POSTER SESSION (Room E-F)	
20:00	CONGRESS DINNER	

## Friday 23 of September, 2011

<b>08:00</b>	<b>COFFEE AND REGISTRATION</b>	
	<b>Room C-D</b>	
<b>09:00</b>	<b>PLENARY SESSION 5</b>	
	<b>Room E</b>	<b>Room F</b>
<b>10:00</b>	<b>Fuel Cells Components ID 21</b>	<b>Hydrogen Generation ID 33</b>
<b>10:20</b>	<b>Fuel Cells Components ID 23</b>	<b>Hydrogen Generation ID 53</b>
<b>10:40</b>	<b>Fuel Cells Components ID 43</b>	<b>Hydrogen Generation ID 56</b>
<b>11:00</b>	<b>Fuel Cells Components ID 67</b>	<b>Hydrogen Generation ID 61</b>
<b>11:20</b>	<b>COFFEE BREAK</b>	
<b>11:40</b>	<b>Fuel Cells Components ID 42</b>	<b>Hydrogen Generation ID 95</b>
<b>12:00</b>	<b>Fuel Cells Components ID 49</b>	<b>Hydrogen Generation ID 54</b>
<b>12:20</b>	<b>Fuel Cells Components ID 89</b>	<b>Hydrogen Storage ID 80</b>
<b>12:40</b>	<b>Fuel Cells Components ID 92</b>	<b>Hydrogen Storage ID 81</b>
<b>13:00</b>	<b>ADJOURN AND CLOSING COCKTAIL (RSVP)</b>	



ID	TITLE	AUTHORS	MODE
9	Production of extracellular lipase from different Fungus as catalyst for the enzymatic synthesis of biodiesel.	Lydia Toscano*1,2, Gisela Montero1, Margarita Stoytcheva1, Velizar Gochev3, Guadalupe Moreno2	POSTER
10	CoO-TiO2 and WO3-TiO2 mixed oxide as photocatalyst for hydrogen generation	A. Pérez-Larios, A. Hernández-Gordillo, F. Tzompantzi, R. Gómez	ORAL
12	Zeolites type SBA-16 as photocatalyst for hydrogen production	A. Pérez-Lariosa*, A Hernández-Gordilloa, M. A. Guzmanb, R. Huirache-Acuñac, R. Gómeza	ORAL
14	Effect of the Pr addition to Pt/Al2O3 and Rh/Al2O3 catalysts on the hydrogen production by steam reforming of methanol	Miroslava Barrera salgado, Gloria Del Angel, Raúl Pérez Hernández	POSTER
15	Energy balance for design and optimization of a renewable hybrid system with hydrogen storage	Romeli Barbosa, Beatriz Escobar, José Hernández, Ysmael Verde	ORAL
16	Hydrogen Production by Spirulina Maxima 2342 in Different Light Intensities and quantification through a PEMFC	Alina Juantorena Ugás, Sebastian Pathiyamattom Joseph, Orlando Lastres Danguillecourt, Geovannis Hernández Gálvez, Armando Bustos Gómez	POSTER
17	Study of Wind Energy Potential in San Quintin, Baja California	Marlene Zamora Machado, Alejandro Adolfo Lambert Arista	ORAL
18	Parallel connection and sandwich electrodes lower the internal resistance of a Microbial Fuel Cell	Arelí Ortega-Martínez1; Omar Solorza-Feria2; Elvira Ríos-Leal3 ; Katy Juárez-López4; María T. Ponce-Noyola5; Noemí F. Rinderknecht-Seijas6; Héctor M. Poggi-Varaldo1	ORAL
19	Comparison of Variable Resistance and Linear Sweep Voltammetry methods for characterizing a mediator-less single chamber microbial fuel cell loaded with sulfate reducing biocatalysts	K. Sathish Kumar1, Omar Solorza-Feria2,1, Gerardo Vazquez-Huerta2, Héctor M. Poggi-Varaldo3,1	ORAL
20	Electrical stress-directed evolution of biocatalysts community sampled from a sodic-saline soil	K. Sathish Kumar1; Omar Solorza-Feria2,1,*; Gerardo Vázquez-Huerta2; Marco A. Meraz-Ríos4; J. P. Luna-Arias5; Héctor M. Poggi-Varaldo3,1	ORAL
21	Thermal Treatment Effects on Pd5Cu4Pt Electrocatalyst for Oxygen Reduction in a PEM Fuel Cell	D. C. Martínez Casillas1,* , O. A. Gil Esquivel1, O. Solorza Feria1.	ORAL
22	Hybrid Electric Vehicle (Nayaa ) Fuel Cells And Batteries	A. Rodríguez-Castellanos, S. Citalán-Cigarroa, J. L. Díaz-Bernabe, O. Solorza-Feria	ORAL
23	High catalytic activity and degree of tolerance to ethanol of low platinum-content Pt-CeOx/MWCNT in acid media	Alberto Gaona Coronado, Javier Rodríguez Varela, Juan Carlos Loyola, Iván Escalante-García , Pascual Bartolo Pérez	ORAL

24	Synthesis and characterization of novel Pd-CeOx/MWCNT electrocatalysts as ORR cathode materials for DAFCs	Alberto Gaona Coronado, Javier Rodriguez Varela, Juan Carlos Loyola	POSTER
26	Oxidative Steam Reforming of Methanol and Hydrogen production: Effect of the Cu and Ni Impregnation on CeO2	Albina Gutiérrez-Martínez, Antonio Alba, Raúl Pérez-Hernández	ORAL
27	Platinum Deposit on WOx-C Synthesized by Different Methods As Catalyst In PEMFC	M. L. Hernández-Pichardo1,* , R. G. González-Huerta2, S. P. Paredes-Carrera1, J. A. Frías-Rojas1, E. Palacios-González3, P. del Angel3	POSTER
28	Decontamination Of Drinking Water By A Combined Photocatalysis-Sorption Couple System At Low Energy	S.P. Paredes1, M. A. Valenzuela1, M. L. Hernández-Pichardo1, Rodríguez-Clavel I. S1.	POSTER
29	Effect of WOx Over Ni/Hydrotalcite Catalysts To Produce Hydrogen From Ethanol	J. L. Contreras1* , M.A. Ortiz1, G.A. Fuentes2 , M.Ortega3, R.Luna1, M. Gordon1,J.Salmones4, B.Zeifert4, L. Nuño1 and T. Vázquez1	ORAL
30	SYNTHESIS AND CHARACTERIZATION OF MgTa ALLOY AND ITS POSSIBLE USE IN HYDROGEN STORAGE	José Luis Iturbe-García, Alberto Sandoval Jiménez	POSTER
31	Electrochemical Behavior of Ni-based Alloys as Negative Electrode for Nickel-Metal Hydride Batteries	Liliana Vazquez-Motaa, Karina Patlán-Olmedoa, Miguel Angel Oliver-Tolentinob, Rosa Gonzalez-Huertaa, Hector Javier Dorantes-Rosalesc, Arturo Manzo-Robledoa*	ORAL
32	Kinetics Study Of Hydrogen Storage In Mechanically Alloyed Magnesium	G. Garcia-Pacheco1*, J. G. Cabañas-Moreno2, K. Suarez-Alcantara3.	ORAL
33	Synthesis of Sb doped SnO2 (ATO) nanoparticles as support to IrO2 used to anode an electrolyzer ESP	Julio Cruz	ORAL
34	Preliminary design of hybrid Fuel Cell - Battery power systems for electric vehicles: A simple approach.	Leonardo De Silva Munoz	ORAL
35	Basic dynamic behaviour of a commercial 1 kW fuel cell system.	Leonardo De Silva Munoz	ORAL
36	Decentralized Power Planning: A Review Of Mathematical Models Used	Juan Rojas Zerpa1, José Yusta Loyo 2, Carlos Ponce Corral 3	ORAL
37	Synthesis of aluminosilicates under high pressure and using sulfur as directing agent: study of hydrogen and water adsorption.	Sandra Loera1,* , Jorge Flores1, Enrique Lima2, Heriberto Pfeiffer2, Miguel A. Olivier3, and Victor H. Lara4	ORAL

38	Characterization of an ultrasonic nozzle for the manufacture of Membrane-Electrode Assemblies	J. Roberto Flores Hernández1*, I. Lorena Albarrán Sánchez1	ORAL
39	Mechanical stabilization of Nafion® membrane to facilitate the manufacture of the Membrane-Electrode Assemblies	J. Roberto Flores Hernández1*, I. Lorena Albarrán Sánchez1, Brenda Reyes Peraza2 F. Isaías Vado Martínez2	ORAL
40	Characterization of Chitosan Proton Exchange Membrane	Molina Rojas D. S.1*, Mendoza López D. 1, Cortés Escobedo C. A. 1, Vázquez Huerta G.2, Solorza Feria O. 2, González Huerta R. G. 3	ORAL
41	Design and characterization of a biofuel cell using a laccase electrode as cathode	Javier Martínez Ortiz1, J. Roberto Flores Hernández2*, Rafael Vazquez Dualt1 and I. Lorena Albarrán Sánchez2	ORAL
42	SYNTHESIS AND CHARACTERIZATION OF Agn-Ptm/C CATALYST FOR PEMFC CATHODE	Andres Godínez-García, Diana C. Martínez-Casillas, J. Francisco Pérez-Robles, Omar Solorza-Feria, Luzma R. Aviles-Arellano, H. Vladimir Martínez-Tejada	ORAL
43	ORR Performance of Pt-Oxide-C Electrocatalysts Prepared By CVD	Beatriz Ruiz Camacho1*, Arturo Patiño Rojas1, Rosa Guadalupe González Huerta1, Miguel A. Valenzuela1, Roberto Vargas García2, Nicolás Alonso-Vante3	ORAL
45	Synthesis and characterization of WO3 for its application in tandem cells	Manuel Rodríguez, Geonel Rodríguez, Gerko Oskam	POSTER
47	Hydrogen Storage In Nanocavities Of Porous Imidazoles.	Claudia Vargas, Jorge Roque, Karina Tapia, Edilso Reguera, Hernani Yee	ORAL
48	Synthesis of BiVO4 by mechanochemical reaction between Bi2O3 and V2O5	B. Fuentes-Martínez, K.P. Padmasree, E. Mendoza-Mendoza, A.F. Fuentes	POSTER
49	ETHANOL ELECTRO-OXIDATION USING SUPPORTED MULTIMETALIC ACTIVE PHASES	L. C. Ordóñez, F. Avilés, G. Martínez, A. J. Delgado, R. L. Nolasco	ORAL
50	Synthesis And Transport Studies Of Nano-Crystalline Ce1-xBixO2-δ Systems	Siomara Martinez-Costilla1, Sagrario M. Montemayor1, Padmasree Karinjilottu Padmadas2, Antonio F. Fuentes2	POSTER
53	Steam reforming of ethanol for hydrogen production using Ni-W/CeO2, Ni-W/γ-Al2O3 and Ni-W/HT catalysts	I.P. Hernández1, A. M. Fernández2, Y. Gochi-Ponce3	ORAL
54	Influence of the pH on hydrogen production by SSF of paper industry wastes using anaerobic biofilms	Emma Berenice Herrera Ramírez1, Ileana Mayela María Moreno Dávila1, Leopoldo Javier Ríos González1*, Baltazar Gutiérrez Rodríguez1, Yolanda Garza García1, Jesús Rodríguez Martínez1	ORAL

55	A DFT Study of the Poisoning Effects of CO on PdxCu1-x (110) surface	Ernesto López-Chávez1,*, Alberto García-Quiroz1, Fray de Landa Castillo-Alvarado2, Gerardo Cabañas-Moreno3, José Manuel Martínez-Magadán4	ORAL
56	Hydrogen production in UASB reactor using enzymatic hydrolysates from paper industry wastes by anaerobic biofilms: Influence of HRT	Ileana Mayela María Moreno Dávila1, Emma Berenice Herrera Ramírez1, Leopoldo Javier Ríos González1*, Baltazar Gutiérrez Rodríguez1, Yolanda Garza García, Jesús Rodríguez Martínez1	ORAL
57	Synthesis and characterization of sulphonated HFA-co-DABS/ISO copolyamide for Polymer Electrolytic Membranes	1Pérez-Padilla Y., 2Smit M., 1Canche-Escamilla G., 1Aguilar-Vega M. J.	POSTER
58	Study Of Performance As Supercapacitors With Solid Electrolyte	Paola Garcia Hernández, Jose Martin Baas López, Daniella Pacheco Catalán, Mascha Smit	POSTER
59	Hydrogen production by native species of microalgae isolated from Mexico	Márquez-Reyes LA1, Sánchez Saavedra MP1, Valdez-Vazquez I1,2.	POSTER
60	Electrochemical Performance Of Supercapacitors Based On Poly(Pyrrole)-Cobalt Supported On Carbon Nanotubes	J. B. Pompeyo Duarte1, E. Morales2, M. A. Smit1 and D.E. Pacheco-Catalán1	ORAL
61	Synthesis of GaN by hydrothermal method as promising photo-electrocatalyst for hydrogen production	Anayancy Campos Badillo1, Arturo Manzo-Robledo2, Odilón Vázquez Cuchillo1, Nora ElizondoVillareal3 and Arquímedes Cruz-López1	ORAL
62	Synthesis And Characterization Of Ni-Mo Electrodes For The Hydrogen Evolution Reaction	Gabriel Tamayo, Diego Crespo, Marcelo Videá	ORAL
63	Dispersion of Ni and LiH on the hydriding-dehydriding kinetic in Mg based alloys for hydrogen storage	Antonio Alberto Zaldivar Cadena	ORAL
64	Modeling of the Hydriding-Dehydriding Kinetics of Pure Magnesium	Antonio Alberto Zaldivar Cadena	POSTER
65	Getting Hydrogen From NiH2 and CH4. A Theoretical Study Of The Reaction Mechanism	María Esther Sánchez-Castro, Mario Sánchez-Vázquez	POSTER
66	Performance Testing And Exhaust Emissions In A Single Cylinder Spark Ignition Using Gasoline-Anhydrous Ethanol Blends.	Jesus Antonio Camarillo Montero, Uriel González Macías, Juan José Marín Hernández, Juan Rafael Mestizo Cerón	ORAL

67	Oxygen Reduction Kinetic Pathway on Pt And Pd Compounds Synthesized By Different Methods	P. González Puente <sup>1</sup> , L. M. Leal Gámez <sup>1</sup> , B. Ruiz Camacho <sup>2</sup> , M. Valenzuela Zapata <sup>2</sup> , R. Vargas García <sup>3</sup> , Omar Solorza Feria <sup>4</sup> , R. González Huerta <sup>1</sup>	ORAL
68	Opportunities in the carbon market with a solar-hydrogen system	A. Yunez Cano <sup>1*</sup> , G. Contreras Puente <sup>2</sup> , M. Tufiño Velázquez <sup>2</sup> , D. Jiménez Olarte <sup>2</sup> , R. González Huerta <sup>1</sup>	ORAL
69	Absorption Enhanced Reforming Of Light Alcohols (Methanol And Ethanol) For The Production Of Hydrogen: Thermodynamic Modeling	Miguel A. Escobedo Bretado <sup>1</sup> , Manuel D. Delgado Vigil <sup>2</sup> , Jesús Salinas Gutiérrez <sup>2</sup> , Miguel Meléndez Zaragoza <sup>2</sup> , Virginia Collins-Martínez <sup>2</sup> and Alejandro López Ortiz <sup>2</sup>	ORAL
70	Application Of Current Pulses To Water Electrolysis Systems	A. Flores Olvera <sup>1</sup> , A Rubio Rubio <sup>1</sup> , R. Silva Casarin <sup>2</sup> , Omar Solorza Feria <sup>3</sup> , R. González Huerta <sup>1</sup>	POSTER
71	Magnesium-Iron-Zinc Alloys And Their Hydriding Properties	Angel Palacios-Lazcano, Karina Suárez-Alcántara, Gerardo Cabañas-Moreno	POSTER
72	Fuel Cells Stack Desing And Construction Implementing A Dc/Dc Convertor	E. Escobedo <sup>*1</sup> , O. Antonio <sup>2</sup> , Z. Martínez <sup>2</sup> , J. Polanco <sup>3</sup> , F.I. Chan Puc <sup>4</sup> M.A. Smit <sup>1</sup>	POSTER
73	Hydrogen Production From ESR Reaction Over Rh Supported Catalysts: Effect Of Support.	Oscar Arturo Gonzalez Vargas, Jose Antonio De Los Reyes Heredia, Armando Tonatuih Avalos Bravo	POSTER
75	Electrochemical Characterization Of Polymeric Electrolytes For Fuel Cells	Roberto Benavides	POSTER
76	Mathematical Model To Simulate Fuel Cell Performance	Roberto Benavides	POSTER
77	Potentiometric Titration Of Polymeric Electrolytes Used As Membranes In Fuel Cells	Gledir Martins <sup>3</sup> , Márcio A. Fiori <sup>1</sup> , Roberto Benavides <sup>2</sup> , Bruno Szpoganicz <sup>3</sup> , Marcos Marques da Silva Paula <sup>1</sup> , Luciano da Silva <sup>1,4</sup>	POSTER
78	Synthesis Of Polymeric Electrolytes For Their Use As Membranes In Fuel Cells	Roberto Benavides	ORAL
79	Composite Membranes Based on Micro and Mesostuctured Silica: A Comparison of Physicochemical and Transport Properties	Alejandra Alvarez López, Carlos Guzmán, Janet Ledesma García, Luis Gerardo Arriaga Hurtado	ORAL
80	Biomass Catalytic Steam Gasification: Thermodynamics Analysis and Reaction Experiments in a CREC Riser Simulator	Enrique Salaices, Benito Serrano, Hugo Delasa	ORAL

81	Steam Gasification of a Cellulose Surrogate over a Fluidizable Ni/ $\alpha$ -Alumina Catalyst: A Kinetics Model	Enrique Salaices, Benito Serrano, Hugo Delasa	ORAL
82	Hydrogen absorption properties of Mg <sub>1.95</sub> Ti <sub>0.05</sub> Ni <sub>0.95</sub> Cu <sub>0.05</sub> modified magnesium composite, prepared by ball-milling.	Juan Bonifacio Martínez	
83	A Kinetic-Mechanistic Study of the Hydrogen Evolution Reaction In Sulfuric Acid Solutions With Different Electrode Materials	J.C. FUENTES-ACEITUNO <sup>1*</sup> And G.T. LAPIDUS <sup>2</sup> .	ORAL
84	Thermodynamic Analysis Of The Absorption Enhanced Steam Reforming (Aesr) Of Bio-Oil Model Compounds	Miguel A. Escobedo Bretado <sup>1</sup> , Manuel D. Delgado Vigil <sup>2</sup> , Jesús Salinas Gutiérrez <sup>2</sup> , Miguel Meléndez Zaragoza <sup>2</sup> , Virginia Collins-Martínez <sup>2</sup> and Alejandro López Ortiz <sup>2</sup>	ORAL
85	Electrical Conductivity Studies On Y <sub>3+</sub> And Mg <sup>2+</sup> Co-Doped Ceria Electrolyte System	Raúl Alberto Montalvo-Lozano <sup>1</sup> , Sagrario Martínez Montemayor <sup>1</sup> , Padmasree Karinjilottu Padmadass <sup>2</sup> , Antonio Fernandez Fuentes <sup>2</sup>	POSTER
86	Hydrogen as Additive in Cars with Internal Combustion Engines.	Jaime Lorenzo Fonseca Ruiz, José Ramón Armendáriz Gutiérrez, Eduardo Florencio Herrera Peraza	ORAL
89	Oxygen Reduction Studies On Carbon	R. Hernández Maya <sup>1</sup> , A.J. Armenta González <sup>1,2</sup> , O. Ugalde <sup>1</sup> , M.T. Oropeza Guzmán <sup>2</sup> , P. Roquero <sup>1</sup>	ORAL
90	Adsorption of H <sub>2</sub> and O <sub>2</sub> onto Pd-Cu(110) alloy Surfaces: New material for PEMFC	Alberto García-Quiroz <sup>1</sup> , L. César de la Portilla-Maldonado <sup>2</sup> , Ernesto López-Chávez <sup>1</sup> , Fray de Landa Castillo-Alvarado <sup>3,†</sup> , Gerardo Cabañas-Moreno <sup>4</sup> .	POSTER
91	Development of ultrasonic gas humidification systems for fuel cell stacks	T. Romero*, L. De Silva, R. Mijarez	ORAL
92	Hydrogen-crossover evaluation of graphite bipolar plates and membrane-electrodes assemblies, used in PEMFC. Hardware development and methodology implementation	Félix Loyola, Ulises Cano, Irma Lorena Albarrán, Tatiana Romero	ORAL
93	Channel length and air flow rate effect on the PEM fuel cell overall performance	Félix Loyola, Ulises Cano	ORAL
94	Stirring method and temperature: its effect on the synthesis of metallic (M) and bimetallic (M-Pt) nanostructures	Nora Mayté Sánchez-Padilla <sup>1</sup> , Sagrario M. Montemayor <sup>1,*</sup> , F.J. Rodríguez Varela <sup>2</sup>	POSTER

95	Production of H <sub>2</sub> from Ethanol Using Pt/Hydrotalcite Catalysts Stabilized With WO <sub>x</sub>	J. L. Contreras <sup>1</sup> , M.A. Ortiz <sup>1</sup> , G.A. Fuentes <sup>2</sup> , R.Luna <sup>1</sup> , M. Gordon <sup>1</sup> , J.Salmones <sup>3</sup> , B. Zeifert. <sup>3</sup> and T. Vázquez <sup>1</sup>	ORAL
96	Effect of the addition of benzimidazole ionic liquid in ABPBI/H <sub>3</sub> PO <sub>4</sub> proton exchange membranes	Rubí A. Hernández Carrilloa, Juan Antonio Asenciob, Pedro Gómez Romerob, Eduardo M. Sánchez Cervantesa	ORAL