

XV International Congress of the Mexican Hydrogen Society

1

In Honor of Professor Suilma Marisela Fernández Valverde

22 – 25 September 2015, Mexico City, CINVESTAV IPN, Mexico

Welcome

The organizing committee of the "XV International Congress of the Mexican Hydrogen Society" warmly invites you to participate in the 2015 event "Sixteenth anniversary of the Mexican Society of Hydrogen", to be held from september 22 to 25 in Mexico city. The Congress will be to honor the academic and scientific career of Prof. Suilma Marisela Fernández Valverde."



Organizing Committee

Committee Chairs

- Dr. Omar Solorza Feria CINVESTAV
- Dr. Héctor M. Poggi Varaldo CINVESTAV
- M.C. Giovanni Hernández Flores CINVESTAV
- Dr. Rosa de Guadalupe González Huerta ESIQIE IPN
- Dr. Ernesto López Chávez UACM
- Dr. Guadalupe Ramos Sánchez UAM-I

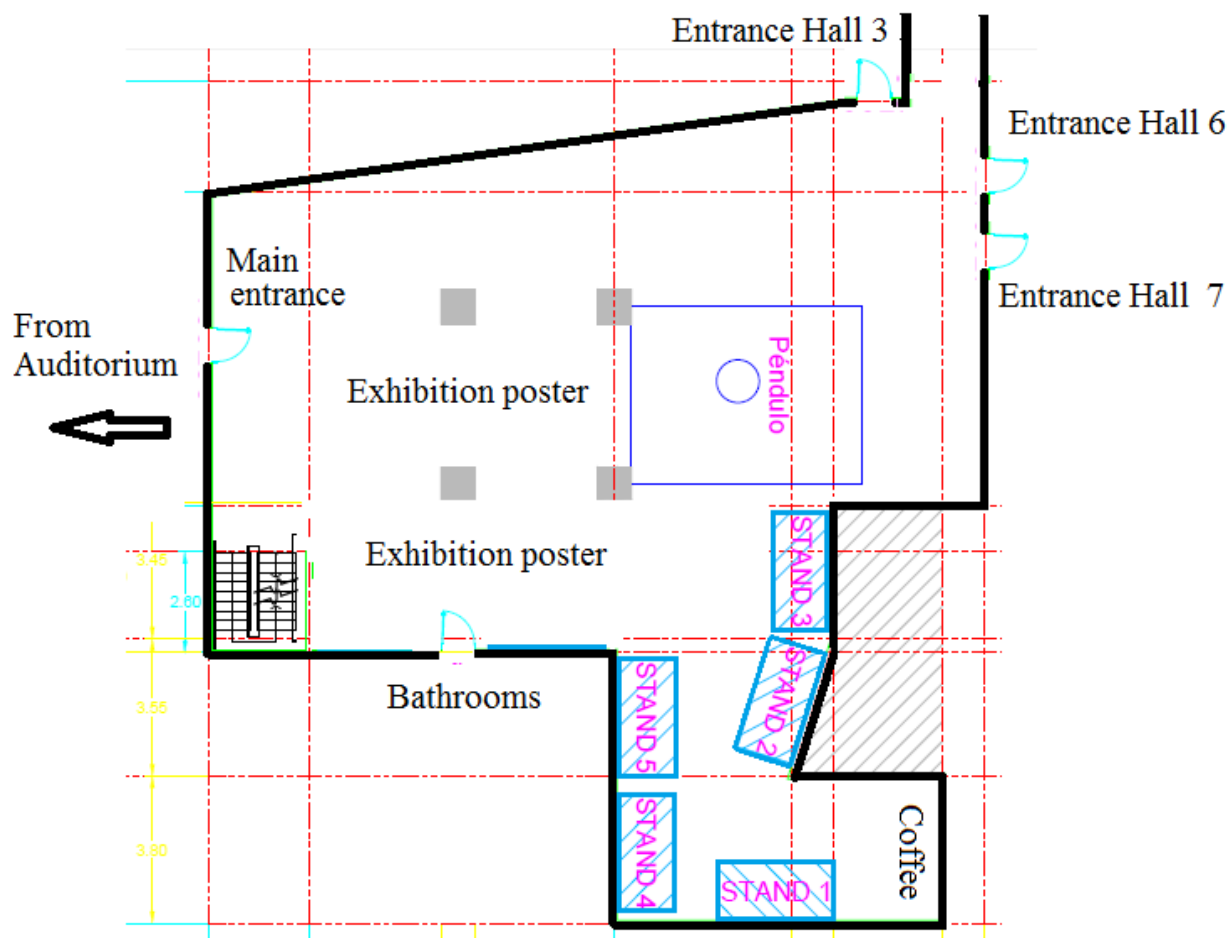
2

Scientific Committee

- Dr. Omar Solorza Feria CINVESTAV
- Dr. Héctor M. Poggi Varaldo CINVESTAV
- M.C. Giovanni Hernández Flores CINVESTAV
- Dr. Rosa González Huerta ESIQIE IPN
- Dr. Alejandro López Ortiz CIMAV
- Dr. Beatriz Escobar Morales CICY
- Dr. Fray de Landa Castillo IPN
- Dr. Ysmael Verde Gómez ITC
- Dr. F. Javier Rodríguez Varela CINVESTAV
- Dr. Karina Suárez Alcántara UNAM
- Dr. Roberto Benavides Cantú CIQA
- Dr. Romeli Barbosa Pool UQROO
- Dr. Sergio Durón Torres UAZ
- Dr. Virginia Collins Martínez CIMAV
- Dr. Gerardo González García UACM
- Dr. Beni Camacho Pérez, UTTeCámac
- M.C. Dulce J. Hernández Melchor, UTTeCámac
- Dr. Aldo E. González Becerra, CBM-SO, Spain
- Dr. Xochitl Domínguez Benetton, VITO, Belgium
- Dr. Rosa Olivia Cañizares Cinvestav
- M. C. Javier Acuapan Cinvestav
- Dr. Carlos Escamilla Alvarado UANL
- Dr. Areli del Carmen Ortega UV
- Dr. Ana Line Vazquez ITS Tierra Blanca
- Dr. Katy Juárez López IBT-UNAM
- M. C. Lilian Domínguez Cinvestav
- M. C. Leticia Romero Cinvestav

Location place

Building Espacios Teóricos - CINVESTAV



3

Program: XV International Congress of the Mexican Hydrogen Society

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	Tuesday 22 sep		Wednesday 23 sep	Thursday 24 sep		Friday 25 sep
	Pre-congress course			Congress		
	Registration		Registration	Registration	Registration	Registration
8:00-9:00			Opening	Chairman Dr. Sergio Duron	Chairman Dr. Alejandro López	
9:00-9:20		Course 2		Prof. Andrzej Lasia	Prof. Krishana Rajeshwar	
9:20-9:40	Dr. Dominic Francis Gervasio	Dr. Karina Suárez Alcántara		Determination of the Kinetics of the hydrogen evolution reaction	Renewable Hydrogen and Solar Fuel: A Viable Paradigm	
9:40-10:00	Polymer electrolyte membrane fuel cells	Hydrogen storage	Chairman Dr. Omar Solorza		SMH15-324 SMH15-296 SMH15-260	
10:00-10:20			Dr. Marisela Fernandez	Chairman Dr. Guadalupe Ramos	SMH15-333 SMH15-298 SMH15-345	
10:20-10:40			Past, Present and Future of Hydrogen Energy	Dr. Perla Balbuena		
10:40-11:00			Chairman Dr. Francisco Pérez	Analysis of the Oxygen Reduction Reaction in Core-Shell Nanoparticles	SMH15-294 SMH15-291 SMH15-267	
11:00-11:20		Coffee	Dr. Dominic Francis Gervasio	Coffee	SMH15-314 SMH15-310 SMH15-205	
11:20-11:40		Course 3	Membranes for hydrogen storage	SMH15-278 SMH15-209 SMH15-318	Coffee	
11:40-12:00	Continuation Course 1	Dr. Hector Poggi Varaldo M. C. Giovanni Hernández	Coffee	SMH15-217 SMH15-206 SMH15-214	SMH15-270 SMH15-317 SMH15-293	
12:00-12:20		Microbial fuel cells	SMH15-213 SMH15-330 SMH15-319	SMH15-229 SMH15-277 SMH15-226	SMH15-215 SMH15-207 SMH15-227	
12:20-12:40			SMH15-271 SMH15-304 SMH15-241	SMH15-255 SMH15-219 SMH15-233	SMH15-249 SMH15-326 SMH15-336	
12:40-13:00			SMH15-240 SMH15-308 SMH15-246	SMH15-230 SMH15-295 SMH15-235	SMH15-224 SMH15-250 SMH15-337	
13:00-13:20			SMH15-228 SMH15-269 SMH15-251	SMH15-266 SMH15-239 SMH15-262	SMH15-225 SMH15-342 SMH15-208	
13:20-13:40		Lunch	SMH15-232 SMH15-259 SMH15-263	SMH15-265 SMH15-231	Sponsors	
13:40-14:00			Sponsors	Sponsors	Sponsors	
14:00-14:20	Course 4	Course safe handling of hydrogen	Lunch	Lunch	Closure	
14:20-14:40	Prof. Andrzej Lasia	Chairman. Dr. Karina Suárez				
14:40-15:00	Electrochemical impedance spectroscopy on hydrogen evolution reaction	Expositor Ing. Javier Fortuna	Chairman Dr. Javier Rodríguez Varela	Prototypes exhibition		
15:00-15:20			Table discussion			
15:20-15:40						
15:40-16:00	Café	Café				
16:00-16:20		Course safe handling of hydrogen				
16:20-16:40	Continuation Course 4	Chairman. Dr. Karina Suárez	Poster session	HMS Assembly		
16:40-17:00		Expositor Ing. José Anaya				
17:00-17:20						
17:20-17:40						
17:40-18:00						
18:00-19:00			Cultural Activity	Transfer to hotel		
19:00-20:00						
20:00-24:00			Transfer to hotel	Gala dinner		

General Information

Registration Hours during the Congress

Tuesday, 22 September 2015	8:00 to 9:00
Wednesday, 23 September 2015	8:00 to 9:00
Thursday, 24 September 2015	8:00 to 9:00
Friday, 25 September 2015	8:00 to 9:00

Coffee Breaks

Tuesday, 22 September 2015	10:40 to 11:00 and 15:40 to 16:00
Wednesday, 23 September 2015	11:40 to 12:00
Thursday, 24 September 2015	11:00 to 11:20
Friday, 25 September 2015	11:20 to 11:40

Lunches

Tuesday, 22 September 2015	13:00 to 14:00
Wednesday, 23 September 2015	14:00 to 15:00
Thursday, 24 September 2015	14:00 to 15:00

Sponsors

Wednesday, 23 September 2015	13:40 to 14:00
Thursday, 24 September 2015	13:40 to 14:00
Friday, 25 September 2015	13:20 to 13:40
Friday, 25 September 2015	13:40 to 14:00

Gala dinner

Thursday, 24 September 2015 at 20:00

Closure

Friday, 25 September 2015 at 14:00 to 14:40

Courses

Tuesday, 22 September 2015

Location: CINVESTAV

Av. Instituto Politécnico Nacional No 2508, 07360, Gustavo A. Madero.

Course 1

9:00 to 10:40 and 11:00 to 13:00

Room: 3

Polymer Electrolyte Membrane Fuel Cell – *Dr. Dominic Francis Gervasio.*

Course 2

9:00 to 10:40

Room: 6

Hydrogen Storage - *Dr. Karina Suárez Alcántara.*

Course 3

11:00 to 13:00

Room: 6

Microbial Fuel Cells – *Dr. Héctor M. Poggi Varaldo & M.C. Giovanni Hernández Flores*

Course 4

14:00 to 15:40 and 16:00 to 18:00

Room: 3

Electrochemical Impedance spectroscopy on hydrogen evolution reaction – *Prof. Andrzej Lasia.*

Course Security

14:00 to 15:40 and 16:00 to 18:00

Room: 6

Safe handling of hydrogen – *Ing. José Anaya & Dr. Karina Suárez Alcántara*

Plenary Session

Location: CINVESTAV

Library Auditorium

Wednesday, 23 September 2015

9:40 to 10:40

Dr. Marisela Fernández Valverde

Chairman Dr. Omar Solorza Feria

Academic and Scientific Tribute

10:40 to 11:40

Dr. Dominic Francis Gervasio

Chairman Dr. Francisco Pérez Robles

Membranes for hydrogen storage

15:00 to 16:00

Chairman Dr. Javier Rodríguez Varela

Table discussion

Thursday, 24 September 2015

9:00 to 10:00

Prof. Andrzej Lasia

Chairman Dr. Sergio Durón Torres

Determination of the kinetics of hydrogen evolution reaction

10:00 to 11:00

Dr. Perla Balbuena

Chairman Dr. Guadalupe Ramos Sánchez

Analysis of the Oxygen Reduction Reaction in Core-Shell

Friday, 25 September 2015

9:00 to 10:00

Prof. Krishnana Rajeshwar

Chairman Dr. Alejandro López Ortiz

Renewable Hydrogen and Solar Fuel: A Viable Paradigm



Cultural Activity

Wednesday, 23 September 2015

Location:

18:00 to 20:00

8

Prototypes Exhibition

Thursday, 24 September 2015

Location:

15:00 to 16:20

HMS Assembly

Thursday, 24 September 2015

Location:

16:20 to 18:00



Sponsors



9



Oral Presentation Program



Oral Session: 1

Wednesday, 23 September 2015

Location: CINVESTAV

Av. Instituto Politécnico Nacional No 2508, 07360, Gustavo A. Madero.

12:00 to 13:40

Room: 3 Chairman Dr. Beatriz Ruiz Camacho

SMH15-213

Electrocatalytic oxygen evolution reaction in alkaline media using a hydrotalcite-like material
Ni/Co-Fe

12:00 to 12:20

SMH15-271

TiO₂ nanotubes array sensitized with CdS and Sb₂S₃, for photoelectrochemical hydrogen
generation

12:20 to 12:40

SMH15-240

Photocatalytic hydrogen evolution on TiO₂/HKUST-1 composites under visible light.

12:40 to 13:00

SMH15-228

Photocatalytic hydrogen production using Pd, Co and Ni oxides based on Au/TiO₂ catalysts.

13:00 to 13:20

SMH15-232

Hydrogen production from Methanol/Water photocatalytic decomposition using Pt catalysts
supported on hollow@TiO₂ core-shell nanostructures.

13:20 to 13:40

Room: 6 Chairman Dr. Ysmael Verde Gómez

SMH15-330

Synthesis of carbon nanotubes doped with nitrogen towards the ORR in alkaline media.

12:00 to 12:20

SMH15-304

CoTiO₃ deposited by laser ablation on a commercial alkaline membrane: electrochemical performance for the ORR reaction in alkaline media.

12:20 to 12:40

SMH15-308

Effect of the graphene and other supports for the oxygen reduction and evolution in alkaline media.

12:40 to 13:00

SMH15-269

New advanced 2D NiAu@Pt nanolayers with high electrocatalytic activity for the oxygen reduction reaction.

13:00 to 13:20

SMH15-259

Design and analysis of photovoltaic-hydrogen system for illumination and fuel cell characterization.

13:20 to 13:40

Room: 7 Chairman Dr. Roberto Benavides Cantú

13

SMH15-319

Analysis of the oxygen reduction reaction in core-shell nanoparticles.

12:00 to 12:20

SMH15-241

Effect of porosity on IEC and water distribution for sulfonated poly(styrene-co-acrylic acid)
PEM copolymer

12:20 to 12:40

SMH15-246

Protic ionic liquids as “all-in-one” solvent toward the green synthesis of metal oxides.

12:40 to 13:00

SMH15-251

Ion conduction in membranes of sulfonated polyetherimide: Theoretical study.

13:00 to 13:20

SMH15-263

Preparation of electrospun SPEEK-PVB nanofiber embedded in SPEEK-PVA blend as
composite membrane for PEM fuel cell.

13:20 to 13:40



Oral Session: 2

Thursday, 24 September 2015

Location: CINVESTAV

Av. Instituto Politécnico Nacional No 2508, 07360, Gustavo A. Madero.

11:20 to 13:40

Room: 3 Chairman Dr. Karina Suárez Alcántara

SMH15-278

Comparative electrocatalytic study of Fe₃O₄@Pt/C and Fe₂O₃@Pt/C core-shell nanostructures for the ORR.

11:20 to 11:40

SMH15-217

A first-principles study of Co-Ni@Pt core-shell electrocatalysts for the ORR.

11:40 to 12:00

SMH15-229

Effect of surfactant concentration and metal salt molar ratio on the stability, structure and activity in ORR of Ni@Pt-Pd core-shell.

12:00 to 12:20

SMH15-255

Selective heterogeneous nucleation of Platinum nanoparticles onto graphitic domains of multi-walled carbon nanotubes.

12:20 to 12:40

SMH15-230

Nb coating could enhance electrocatalytic performance and lifetime of Ni cathode in MCFC.

12:40 to 13:00

SMH15-266

Formic oxidation on core-shell Au@Pt_x/C electrocatalyst.

13:00 to 13:20

SMH15-221

Performance of a microtubular SOFC with an LSCF based composite as cathode.

13:20 to 13:40

Room: 6 Chairman Dr. Beatriz Escobar Morales

SMH15-209

Ionic and thermal conductivity of $\text{Ln}_2\text{Hf}_2\text{O}_7$ hafnates (Ln=lanthanides) prepared by mechanical milling.

11:20 to 11:40

SMH15-206

Optimization of stack performance of low power PEM Fuel Cells.

11:40 to 12:00

SMH15-277

High performance Pd-based catalysts for electro-oxidation of formic acid.

12:00 to 12:20

SMH15-219

Synthesis, characterization and evaluation of Ni@Pt and Fe@Pt nanoparticles with core-shell structure to the electro-oxidation reaction of ethanol.

12:20 to 12:40

SMH15-295

Innovative functionalization of graphene to increase the catalytic activity of Pt/Gr electrocatalyst for the methanol oxidation reaction (MOR).

12:40 to 13:00

SMH15-239

Synthesis and characterization of $\text{Pr}_{0.9}\text{Sr}_{0.1}\text{Ni}_{0.6}\text{Fe}_{0.4}\text{O}_3$ perovskite as cathode material for intermediate temperature solid oxide fuel cell.

13:00 to 13:20

SMH15-265

Methanol oxidation on Au@Pt and Cu@Pt core-shell electrocatalysts.

13:20 to 13:40

Room: 7 Chairman Dr. José Gerardo Cabañas Moreno

SMH15-318

Emerging electrochemical technologies for hydrogen utilization: redox flow batteries.

11:20 to 11:40

SMH15-214

Insertion/Desertion of Na^+ and Mg^{2+} in Cobalt Hexa-cyanoferrate towards electrochemical energy storage.

11:40 to 12:00

SMH15-226

Instant disposable Microbial-battery from paper cup for electronic applications.

12:00 to 12:20

SMH15-233

Hydrogenation and dehydrogenation in air-exposed Mg-Fe mixtures.

12:20 to 12:40

SMH15-235

On the dehydrogenation of $2\text{LiBH}_4/\text{Al}$ mixture.

12:40 to 13:00

SMH15-262

Synthesis and characterization of carbon nanofibers for fuel cell applications.

13:00 to 13:20

SMH15-231

Design of a microfluidic system in a PEMFC cell.

13:20 to 13:40

Oral Session: 3

Friday, 25 September 2015

Location: CINVESTAV

Av. Instituto Politécnico Nacional No 2508, 07360, Gustavo A. Madero.

Room: 3 Chairman Dr. Héctor M. Poggi Varaldo

17

SMH15-324

Review: Pretreated solid potential applied to a OFMSW biorefinery to improve the performance of hydrogen production.

10:00 to 10:20

SMH15-333

Effect of the phenolic compounds in the sugar cane bagasse saccharification for the lignocellulosic ethanol production.

10:20 to 10:40

SMH15-294

Technical and economical feasibility Analysis of biorefineries for hydrogen production.

10:40 to 11:00

SMH15-314

Technical analysis and environmental gains of including biohydrogen in a conventional oil refinery.

11:00 to 11:20



Room: 3 Chairman M. en C. Giovanni Hernández Flores

SMH15-270

Biosynthesis of iron nanoparticles for perchloroethylene treatment.

11:40 to 12:00

SMH15-215

Photobiological Hydrogen production by Chlamydomonas sp. and Chlorella sp.

12:00 to 12:20

SMH15-249

Improved hydrogen production by pretreating a solids stream derived from an OFMSW biorefinery.

12:20 to 12:40

SMH15-224

Improvement of novel microbial fuel cell design for wastewater treatment.

12:40 to 13:00

SMH15-225

Use of Clay tube as integrated microbial fuel cell for wastewater treatment.

13:00 to 13:20

Room: 6 Chaiman Francisco Javier Rodríguez Varela

SMH15-296

Defects and disorder in the $\text{Gd}_2\text{Hf}_{2-x}\text{Zr}_x\text{O}_7$ solid solution: mechanochemical synthesis, characterization and electrical properties.

10:00 to 10:20

SMH15-298

Synthesys of carbon nanomaterials doped with sulfur as electrocatalysts in fuel cells.

10:20 to 10:40

SMH15-291

Physicochemical and stability study of Ir-Sn-Sb-O materials as catalyst-supports for the oxygen evolution reaction.

10:40 to 11:00

SMH15-310

Bimetallic cores decorated with Pt as electrocatalyst for PEM fuel cell.

11:00 to 11:20

Room: 6 Chaiman Dr. Ernesto López Chávez

SMH15-317

Effect of different wavelength on the efficiency of Photosystem II and lipid synthesis in
Botryococcus braunii UTEX 2441.

11:40 to 12:00

SMH15-207

Hydrodeoxygenation of oxygenated organic compounds using Ni / γ -Al₂O₃ performed by the
wet impregnation incipient method.

12:00 to 12:20

SMH15-326

Flow of hydrogen adapted to cell fuels using recycled aluminum.

12:20 to 12:40

SMH15-250

Development of Nickel hollow spheres electrocatalysts for ethanol electrooxidation in alkaline
media.

12:40 to 13:00

SMH15-342

Used disposable diapers as substrate for hydrogen production: Effect of temperature and diaper
conditioning.

13:00 to 13:20

Room: 7 Chairman Dr. Francisco Pérez Robles

SMH15-260

New catalytic technology implementation on the hydrogen production industry.

10:00 to 10:20

SMH15-345

Hidrógeno líquido.

10:20 to 10:40

SMH15-267

Oxyhydrogen gas production for fuel enriched in internal combustion engine.

10:40 to 11:00

SMH15-205

Use of Hydrogen for sustainable urban transportation in Cuenca, Ecuador.

11:00 to 11:20

Room: 7 Chairman Dr. Guadalupe Ramos Sánchez

SMH15-293

Cascaded multilevel inverter for fuel cell applications.

11:40 to 12:00

22

SMH15-227

Energy management system for a hybrid hydrogen-solar sustainable house.

12:00 to 12:20

SMH15-336

Biocathodes, a bioelectrochemical technology for electricity generation and effluents treatment:
a review.

12:20 to 12:40

SMH15-337

Revising the molecular dynamics of hydrogen within the sulfur-ammonia photothermochemical
cycle through NMR spectroscopy.

12:40 to 13:00

SMH15-208

Infraestructure analysis of the hydrogen refueling station in Mexico.

13:00 to 13:20

Poster Session

Wednesday, 23 September 2015

Location: CINVESTAV

Coordinadores:

Dr. Romeli Barbosa Pool

Dr. Alejandro López Ortíz

M. en C. Giovanni Hernández Flores

16:00 to 18:00

Room: Lobby building Espacios Teóricos

SMH15-210

Electrical properties of $\text{Gd}_{1-x}\text{Ca}_x\text{Ti}_2\text{O}_7-\delta$ ionic conductors obtained by a novel ultrasound-assisted wet-chemistry method.

SMH15-211

Energy balance analysis of a solar-hydrogen hybrid system integrated to a sustainable house.

SMH15-212

Solar radiation measurements to optimize a PV system according to local weather conditions.

SMH15-216

First-principles studies of graphene for its application in PEMFC: A review.

SMH15-218

Kinetic study of $\text{Pt}_x/\text{Mo}_y/\text{CNT}$ electrocatalyst in oxygen reduction reaction.

SMH15-220

Reactor with agitation of double twist for hydrotreating of oxygenated compounds organic.

SMH15-222

Efficient photoreforming of glycerol on $\text{Ag}/\text{TiO}_2/\text{ZSM-5}$ composites under UV and visible light.

SMH15-223

Pd and Pd-NiO as anodes in a paper-based ethanol membraneless nanofluidic fuel cell.

SMH15-234

Dehydrogenation study of LiAlH_4 .

SMH15-236

On the hydrogenation of $2\text{LiH}/\text{AlB}_2$ mixture.

SMH15-237

A novel production method of $\text{TiFeH}_x\text{-Ni}$ for hydrogen storage.

SMH15-238

Polyaniline films fabricated by electrochemical polymerization: A systematic electrochemical study.

SMH15-242

Polystyrene-co-acrylic acid proton exchange membranes: morphology and mechanical properties.

SMH15-243

Co-culture specific bacteria for hydrogen production in organic waste in different culture media.

SMH15-244

Hydrogen production from compost leachates in an acidogenic SBR.

SMH15-245

Control implementation of a DC-DC energy router for renewable sources.

SMH15-247

Photocatalytic hydrogen production with $\text{TiO}_2\text{-Ni}_x\text{O}_y$ as mixed oxide.

SMH15-248

Impedance study of the electrocatalytic reduction of oxygen on Pt/C and Pt-Ag/C .

SMH15-252

Photoelectrocatalysis hydrogen production by Au, Pt doped TiO_2 .

SMH15-253

Statistical analysis of the microstructure of a proton exchange membrane fuel.

SMH15-254

Evaluation of microorganisms settling ability in hydrogen production.

SMH15-256

Kinetic study of hydrogen storage in calcium oxide.

SMH15-257

Electrochemical properties of low cost free-metal electrocatalyst obtained from waste materials.

SMH15-258

Comparative study of different carbon supported $\text{Fe}_2\text{O}_3/\text{Pt}$ catalysts for oxygen reduction reaction.

SMH15-261

A screening of hydrogen evolution during photocatalytic CO_2 reduction.

SMH15-264

Assembly and characterization of a PEM electrolyser for hydrogen generation from wave power.

SMH15-268

Dissociative mechanism of oxygen reduction reaction (ORR) on Pd-Cu disordered binary alloy metal surfaces: A theoretical study.

SMH15-272

Public policy performance for social development: solar energy approach to assess technological outcome in Mexico City metropolitan area.

SMH15-273

Cellulose, hemicellulose and lignin from urban waste to saccharides by hydrolysis for biohydrogen production.

SMH15-274

Numerical study of heat transfer in a PEM fuel cell with different flow- fields.

SMH15-275

Numerical evaluation of a PEM electrolyzer using computational fluid dynamics.

SMH15-276

$\text{W}_{1-x}\text{Mo}_x\text{O}_3 \cdot 0.33\text{H}_2\text{O}$ compounds synthesized by hydrothermal and microwave -radiation for H_2 production.

SMH15-279

Development of an electrolysis stack type solid polymer electrolyte.

SMH15-280

Development of polymer solid electrolyte type fuel cell stack of H₂/O₂.

SMH15-281

Development of a fuel cell of ethanol direct the type PEM.

SMH15-282

Thermo mechanical system for manufacturing fuel cell electrodes.

SMH15-283

Development of micro electrodes by alternative system.

SMH15-284

Design and characterization of fuel cell regenerative for social communications.

SMH15-285

An optimization study of the electrophoretic deposition parameters to prepare PEMFC electrodes using non-asymmetric AC electric field.

SMH15-286

Effect of change in shape of electrocatalysts core-shell Au-Pd in the oxygen reduction reaction.

SMH15-288

Specific and mass activities of Ni-Pd nanoparticles for the oxygen reduction reaction in acid medium.

SMH15-289

Quantum yield for hydrogen production in photocatalytic water splitting using TiO₂-Pt prepared by different methodologies.

SMH15-290

Preparation and electrochemical study of M: TiO₂ (M= Sn, Ta, V) as support of IrO₂ for oxygen evolution reaction.

SMH15-292

Hydrogen storage of Mg nanoparticles confined in carbon cryogels.

SMH15-297

Preparation of sulfonic-functionalized mesoporous carbon as ion-exchange material for fuel cells applications.

SMH15-299

Effect of the neodymium addition to Rh on alumina supported catalysts in the activity and selectivity to hydrogen on CH₄ dehydrogenation.

SMH15-300

Simulation process of alkaline electrolysis to save natural gas in food dehydration plant.

SMH15-301

Modelling membraneless fuel cell with finite element method.

SMH15-302

Synthesis and characterization of Sn@Pt/C and Ru@Pt/C core-shell nanocatalysts for the EOR.

SMH15-303

Effect of organic molecule (ethylenediamine) in the preparation of ZnS and ZnS(hybrid) semiconductor in H₂ production.

SMH15-305

Evaluation a stand-alone hybrid system PV-WT-FC and batteries in Mexico.

SMH15-306

Electrocatalytic Oxygen Reduction Reaction (ORR) on nanostructured Pt-NiTiO₃/C catalyst in alkaline media.

SMH15-307

Photoelectrochemical behavior of tio₂ nanorods film decorated by silver nanoparticles.

SMH15-309

APQP methodology applied in the design and manufacture of alkaline electrolyser.

SMH15-311

Design, construction and implementation of electronic control module for the enrichment of hydrogen in combustion engines.

SMH15-312

Evaluation of the bismuth content effect on cathodic catalysts for PEM fuel cells.

SMH15-313

Thermodynamic analysis of the ethanol chemical looping autothermal reforming with CO₂ capture.

SMH15-315

Harvesting energy from leachates in microbial fuel cells using an anion exchange membrane.

SMH15-316

Role of functionalized carbon support on the electroactivity of Platinum and Palladium.

SMH15-320

Trends of the production of Biohydrogen from Algae: A Review.

SMH15-321

Biological production of CO₂-free hydrogen by anaerobic microbial mixed microflora in an upflow anaerobic sludge blanket (UASB) reactor.

SMH15-322

Response of cerium incorporation at TiO₂ nano-structures for induced.

SMH15-323

Hydrogen adsorption process in Magnesium-Aluminum compounds (Mg₂₅Al, Mg₅₀Al and MgOAl) varying pressure and temperature conditions.

SMH15-325

Optimal conditions of pomace slow pyrolysis for the generation of a feedstock gas for Hydrogen production.

SMH15-327

Synthesis and characterization of membranes based on agar-agar-KCl.

SMH15-328

Nanostructured ionic conductors thin films for solid oxide fuel cells deposited by ultrasonic spray pyrolysis.

SMH15-329

Synthesis of biodiesel and value-added products from glycerol using sodium and lithium silicate.

SMH15-331

Hybrid membranes for microbial fuel cells.

SMH15-332

Electrocatalytic properties of Ni, Co and Ni-Co nanoparticles for hydrogen evolution reaction in alkaline medium.

SMH15-334

Hydrogen production research in Mexico: A Review.

SMH15-335

Separators in microbial fuel cells: a Review.

SMH15-338

A review on microbial fuel cell technology for soil and sediment remediation.

SMH15-339

Alternative membranes to replace Nafion membranes in microbial fuel cells.

SMH15-340

Microbial fuel cells fed with municipal wastewater and leachates.

SMH15-341

Market research in Mexico of Hydrogen technologies.

SMH15-343

Electrochemical evaluation of the Pd-Fe₃O₄/C nanocatalyst as highly active anode for the oxidation of organic molecules.

SMH15-344

Synthesis and characterization Pt/WO₃ supported on CNT for oxygen reduction reaction.

SMH15-346

DFT study of W_{1-x}MoxO₃·0.33H₂O (x=0 to 1) photocatalyst: importance of +U and +J on-site terms

SMH15-347

Synthesis, characterization and photocatalytic evaluation of M_{1-x}M'_xWO₄ (M, M' = Ni, Co, Cu and Mn) Tungstates.

SMH15-348

Using hydrogen fuel and bio-ethanol in internal combustion engines to reduce emissions of greenhouse gases.

SMH15-349

Micro-direct methanol fuel cells