

TECHNICAL PROGRAMME



Symposium on Hydrogen and Fuel Cells SHFC 2012



July 9-11, 2012
Department of Chemistry
Quaid-i-Azam University Islamabad



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All Professors

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INAUGURAL CEREMONY

Department of Chemistry

Quaid-i-Azam University, Islamabad

Monday, 9th July, 2012

- | | |
|--------------|--|
| 9:50 | Guests to be seated |
| 10:00 | Arrival of the chief guest |
| 10:05 | Recitation from the Holy Quran |
| 10:10 | Welcome Address:
<i>Secretary Symposium</i> |
| 10:20 | Keynote Address:
<i>Chairman Symposium</i> |
| 10:30 | Inaugural Address by the Chief Guest |

Refreshments

TECHNICAL PROGRAMME

MONDAY, 9th JULY, 2012

Session 1 (11:30-13:30)

Chairperson: Prof. Dr. Arshad S.Bhatti, TI (COMSATS)

- 11:30
Invited Lecture Development of batteries and fuel cell energy systems
Fiaz Ahmad, *National Engineering and Science Commission, Islamabad.*
- 12:10
Invited Lecture Development of materials and components for polymer electrolyte membrane fuel cells
Riaz Ahmed, *Quaid-i-Azam University, Islamabad.*
- 12:50
Synthesis of bimetallic efficient Pt-Ni nanoalloy on multiwalled carbon nanotubes (MWCNTs) for direct methanol fuel cells
Asad Mumtaz, *University of Wah, Wah Cantt.*

13:10 – 14:30 Lunch/prayer break

Session 2 (14:30-16:10)

Chairperson: Dr. Fiaz Ahmed (NESCOM)

- 14:30
Invited Lecture The next generation fuel cells: Anion exchange membrane fuel cells
S. T. A. Sherazi, *COMSAT Institute of Information Technology, Abbottabad.*
- 15:10
Pt/Al₂O₃-Carbon nanocomposite as a catalyst for fuel cells
Rabia Naeem, *Quaid-i-Azam University, Islamabad.*
- 15:30
Microcontroller based implementation of fuel cell and battery integrated hybrid power source
Fahad Ali, *University of Management and Technology, Lahore.*
- 15:50
Adsorption of CO on Pt_m-Ni_n alloys: A density functional theory study
Rabia Jamil, *Quaid-i-Azam University, Islamabad.*

16:10 – 16:30 Tea Break

Session 3 (16:30-18:00)

Chairperson: Prof. Dr. M. Shahid Ansari (QAU)

- 16:30
Synthesis and characterization of high performance nano catalysts for polymer electrolyte fuel cells

Shafiqullah, *Quaid-i-Azam University, Islamabad.*

- 16:50 Catalysts for fuel cells and fuel reforming: A current state of research
Bushra Ismail, *Nanoscience and Catalysis division, National Centre for Physics, Quaid-e-Azam University Campus, Islamabad.*
- 17:10 Dynamic modeling and characterization of a proton exchange membrane fuel cell
Muhammad Salik, *University of Management and Technology, Lahore.*
- 17:30 Porous Carbon derived from MOF-5/Sucrose Composite for Super-Capacitors and Fuel Cell Application
Inyat Ali Khan, *Quaid-i-Azam University, Islamabad.*

TUESDAY, 10th JULY, 2012

Session 4 (9:00-11:00)	
Chairperson:	Dr. Muhammad Mujahid (NUST)
9:00 Invited Lecture	Hydrogen production from nano ceramic catalytic pyrolysis of methane Syed Tajammul Hussain, <i>National Centre of Physics, Islamabad.</i>
9:40	Hydrogen storage on Ni/Al ₂ O ₃ nano-composite for fuel cell applications Hameed Ullah Wazir, <i>Hazara University Mansehra.</i>
10:00	Energy of desorption of BH ₃ NH ₃ Shaneela Nosheen, <i>National University of Science of Technology, Islamabad.</i>
10:20	Quantum dots for low cost solar power generation Muhammad Javed Iqbal, <i>Preston institute of nano-science & technology, Preston University, Islamabad.</i>
10:40	Electrochemical energy: Green face of salt-affected lands Muhammad Ashraf, <i>University of agriculture, Faisalabad.</i>
11:00 – 11:30	Tea Break

Session 5 (11:30-13:10)	
Chairperson:	Dr. Syed Tajammul Hussain (NCP)
11:30 Invited Lecture	Development and electro-chemical characterization of low cost electrode/electrolyte for solid oxide fuel cell Ghazanfar Abbas, <i>COMSATS Institute of Information Technology, Islamabad.</i>
12:10	Overview of impediments in the widespread usage of SOFCs Saeed Khalid, <i>PNEC, National University of Science of Technology Karachi.</i>
12:30	Sr ³⁺ /Sm ³⁺ co-doped based two phase nanocomposite electrolytes for low temperature solid oxide fuel cell Rizwan Raza, <i>COMSATS Institute Information Technology, Lahore.</i>
12:50	Hydrogen production by photoelectrochemical water splitting over MnTiO ₃ /TiO ₂ composite oxide thin films deposited by AACVD Shahzad Abu Bakar, <i>National Centre of Physics, Islamabad.</i>
13:10 – 14:30	Lunch/prayer break
Session 6 (14:30-16:10)	
Chairperson:	Dr. Muhammad Javed Iqbal (Preston University)
14:30 Invited Lecture	Hydrogen storage materials-An Overview M. Arif Nadeem, department of Chemistry, <i>Quaid-i-Azam University, Islamabad.</i>
15:10	Manufacturing and testing of polymer electrolyte membrane fuel cells Riaz Ahmed, <i>Pakistan Institute of Nuclear Science and Technology, Nilore, Islamabad.</i>
15:30	Comparative analysis of fuel cells and suggestions to improve their efficiencies for sustainable future Manzar Ahmed, <i>University of South Asia, Lahore.</i>
15:50	Influence of aluminum and lanthanum co-doping on the electrochemical properties of LiCoO ₂ Maryam Iftekhar, <i>Quaid-i-Azam University, Islamabad.</i>
16:10 - 16:30	Tea Break

Session 7 (16:10-18:00) - Poster Session	
Chairperson:	Dr. Riaz Ahmed (QAU)
P-1	Synthesis and characterization of Co@Pt-W/C core-shell catalyst for the electro-oxidation of methanol. Saliha Shahid, <i>Quaid-i-Azam University Islamabad.</i>
P-2	Formulation of an electric equivalent circuit of PEMFC and its behavioral studies under steady state and transient conditions Asfa Javed, <i>University of Management and Technology, Lahore.</i>
P-3	Preparation and characterization of nano-nickel graphite and evaluation of its catalytic properties by immobilization of cadmium, copper and zinc Tayyaba Asim, <i>Lahore University of Management Sciences, Lahore.</i>
P-4	Model based analysis and efficient control system design for fuel cell power systems Mashood Nasir, <i>University of Management and Technology, Lahore.</i>
P-5	Effect of syngas and coal composition on performance of solid oxide fuel cell Aysha Mohy-ud-Din, <i>University of Management and Technology, Lahore.</i>
P-6	Synthesis, spectroscopic characterization and catalytic activity of new triorganotin(IV) carboxylates in production of biodiesel from rocket seed oil Muhammad Tariq, <i>Quaid-i-Azam University Islamabad.</i>
P-7	Total Synthesis of (+)-Roxaticin via C–C Bond Forming Transfer Hydrogenation: A Departure from Stoichiometric Chiral Reagents, Auxiliaries, and Premetalated Nucleophiles in Polyketide Construction Abbas Hassan, <i>Quaid-i-Azam University Islamabad.</i>
P-8	Systems integration of PEM fuel cells Shabbir Hussain, <i>Chemistry Division, Directorate of Science, Pakistan Institute of Nuclear Science and Technology, P.O. Nilore, Islamabad.</i>
P-9	Electrochemically synthesized Cu nanodendrites as <i>In-situ</i> electro-catalyst for the CO ₂ reduction Nabiha Dilshad, <i>Department of Chemistry, Quaid-i-Azam University, Islamabad, Pakistan.</i>
P-10	Materials and manufacturing of bipolar plates for PEMFC Riaz Ahmed, <i>Pakistan Institute of Nuclear Science and Technology, P.O. Nilore, Islamabad.</i>
P-11	Indigenously development of membrane electrode assembly for PEM fuel cell applications Mohsin Ali Raza Anjum, <i>Pakistan Institute of Nuclear Science and Technology, P.O. Nilore, Islamabad.</i>

P-12	Properties of the new absorber antimony tin sulphide thin films for solar cell applications N. Ali, <i>University of the Punjab, Lahore.</i> <i>National Centre for Physics, Islamabad.</i>
P-13	Designing and manufacturing of Air breathing cathodes for direct liquid feed fuel cells Zahid Pervaiz Khan, <i>National Development Complex, Islamabad.</i>
P-14	Optimization of fuel composition for direct borohydride fuel cells Amir Nawaz Gondal, <i>National Development Complex, Islamabad.</i>

WEDNESDAY, 11th JULY, 2012

Session 8 (9:00-11:00)

Chairperson: Dr. Nasir Khalid (PINSTECH)

- 9:00
Invited Lecture Photocatalytic production of hydrogen
Abdul Hameed, *Pakistan Atomic Energy Commission, Islamabad.*
- 9:40 Developments in batteries and fuel cells for electric and hybrid electric vehicles - An overview.
Riaz Ahmed, *Quaid-i-Azam University, Islamabad.*
- 10:00 Estimation of pressure-into-power potential in natural gas transmission lines
Imran nazir, *Mehran University of Engineering & Technology, Jamshoro.*
- 10:20 Development of new transition metal catalyzed hydrogen-mediated C-C bond forming reactions: Enantioselective conversion of primary alcohols to α -Exo-Methylene γ -Butyrolactones
Abbas Hassan, *Quaid-i-Azam University, Islamabad.*
- 10:40 Bioelectronic based on redox enzymes to produce electric power for small electronic devices.
Muhammad Nadeem Zafar, *University of Gujrat, Gujrat.*

11:00 – 11:30 Tea Break

Session 9 (11:30-12:30)

Chairperson: Saeed Khalid (PNEC, Karachi)

- 11:30
Invited Lecture Catalytic synthesis of diesel from syngas: Theoretical and practical aspects
Nasir Khalid, *Pakistan Institute of Nuclear Science and Technology, Nilore, Islamabad.*
- 12:10 The hydrogen and fuel cells: Our future options and promises
Din Mohammad, *CCCCS, Department of Chemistry, Quaid-i-Azam University, Islamabad.*

12:30 – 14:00 Lunch/prayer break

Session 10 – (14:00-15:30)

Chairperson: Prof. Dr. M. Siddiq (QAU)

14:00 - 14:30 Coal Gasification

Invited Lecture Dr. Samar Mubarakmand

14:30 Concluding Session

15:30–16:00 Refreshments