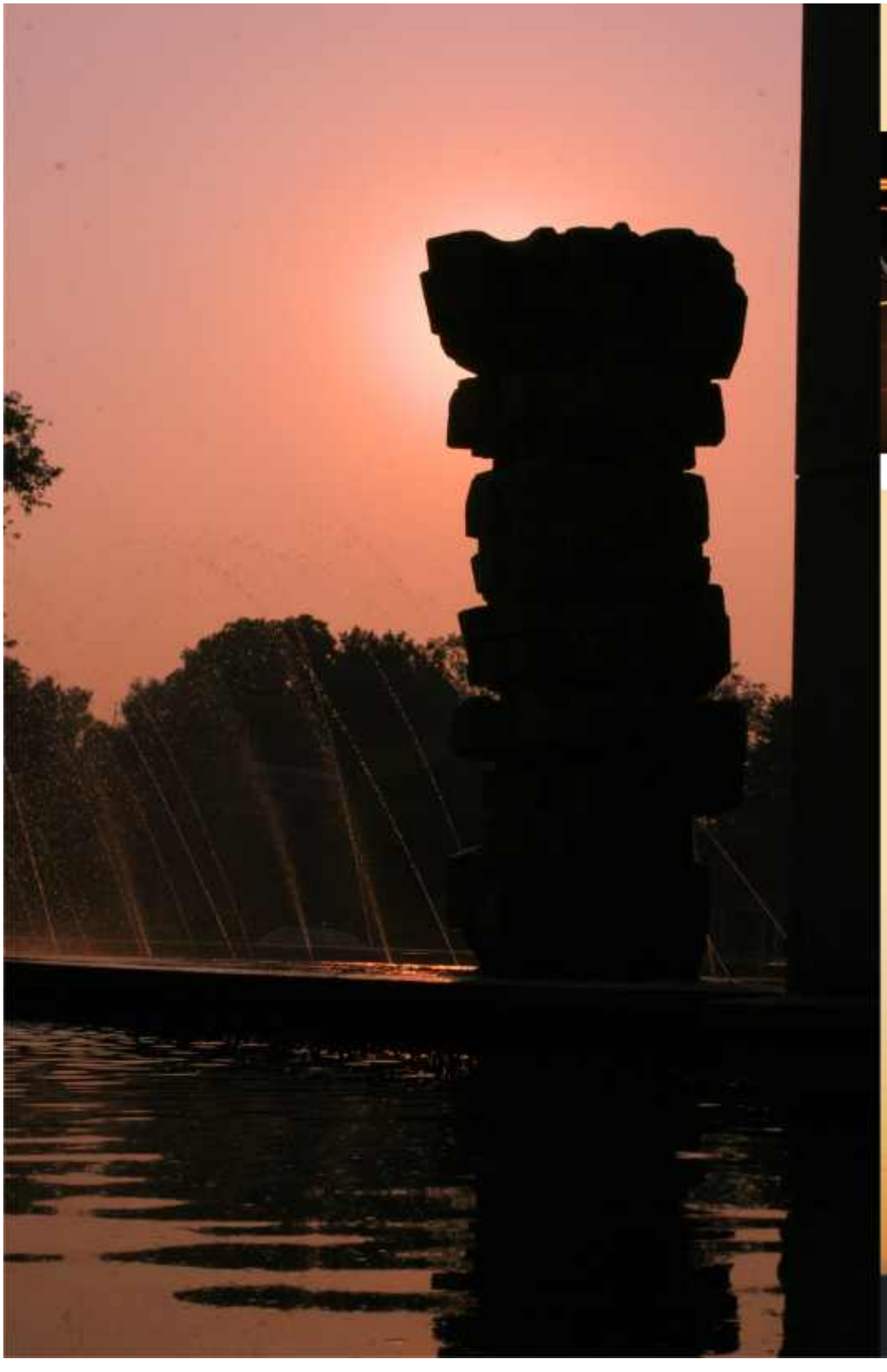

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

ENERGY CONCLAVE

8-15 January 2010

8 JANUARY
New Paradigms for Energy Policy and Regulation

9 JANUARY
Civilian Nuclear Energy

10-12 JANUARY
Advances in Combustion and Transportation

13 JANUARY
Photovoltaic Science and Technology

14 JANUARY
Hydrogen & Energy Storage

15 JANUARY
Smart Energy Delivery Systems

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- Dr. Deepu Philip
- Prof. S. Qureshi
- Dr. Akshai K. Runchal
- Dr. P. Sensarma
- Prof. S. C. Srivastava

LIST OF EVENTS

- **8 JANUARY**
  International Symposium on
  New Paradigms for Energy Policy and Regulation

- **9 JANUARY**
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  Civilian Nuclear Energy

- **10-12 JANUARY**
  International Workshop on Advances in
  Combustion and Transportation

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  Photovoltaic Science and Technology

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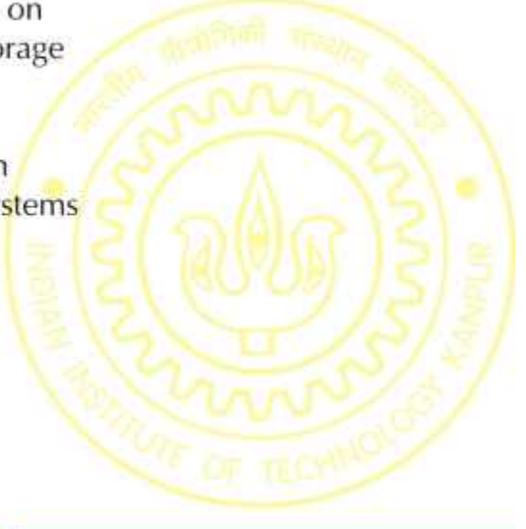
  Hydrogen and Energy Storage

- **15 JANUARY**
  DST - SERC Workshop on
  Smart Energy Delivery Systems



Message from Director
IIT Kanpur

Welcome to IIT Kanpur!

Energy is one of the important necessities of human civilisation. The world continues to face challenges in terms of depleting energy resources. Scientists, engineers, economists as well as policy makers endeavour to develop technologies to efficiently harness, transmit, store and utilize it in a conducive policy and regulatory environment. A growing emphasis is being placed by India towards expanding the access to energy for its citizens, to harness renewable energy sources and to improve efficiency of energy utilization for realizing sustainable economic growth. To this; IIT Kanpur fully understands its responsibilities and societal expectations.

IIT Kanpur places significant emphasis to identify and address frontier areas of energy research. The research and development activities in energy related fields form not only an integral part of our present activities, but also the futuristic vision of the institute. It gives me immense pleasure to note that a group of faculty members and researchers, across different departments and disciplines, has taken a joint initiative to organise an eight-day event – the Energy Conclave 2010. I note that the Conclave covers a wide spectrum of Energy related issues including policy/regulations, nuclear, hydrogen, solar PV, combustion and power distribution. This demonstrates the growing attention being placed to commit intellectual resources to such issues.

A holistic approach is indeed necessary; not just to discuss the present and emerging challenges in energy field, but to find sustainable technological solutions to address the energy challenges of our country. This conclave would also motivate the young minds, wanting to pursue the exciting frontiers in energy research using innovative interdisciplinary approaches.

I wish the delegates, both from India and abroad, a very fruitful, exciting, and enriching stay at IIT Kanpur. We certainly hope that this interaction will catalyze research & development activities that will strengthen the much needed human resource to undertake cutting edge research in energy and its related areas. I wish all the best to the organizing team.

S. G. Dhande

Director

IIT Kanpur

Message from Dean R & D

IIT Kanpur

Greetings and welcome to the week-long energy conclave being hosted by the Institute.

As a developing economy, we engineers are acutely aware of the galloping energy consumption of the industry and the massive appetite for more of it in the future. Existing technologies such as coal and gas-fired power plants, gas turbine installations, and nuclear power are expanding as never before while newer approaches based on fuel cells, wind and solar are knocking at the door steps. The coupling of energy with clean environment and climate change means that renewables are given prominence and we permanently move away from a carbon-based to a hydrogen economy. Apart from engineering solutions, policies and their implications play a crucial role in the selection of one technology over another, their timing, and our acceptance of the new way of life.

Our Institute has quite a few ongoing research programs related to energy devices. To name a few, these include (a) heat exchangers, furnaces, and electrostatic precipitators, (b) thermal management, (c) petroleum engineering and oil recovery, (d) gas turbine blade cooling (e) micro-devices such as reactors and sensors, (f) high voltage DC systems, (g) automation and electrical power transmission, (h) photovoltaics (silicon and organic), (i) nuclear reactor safety, (j) engines and emissions, biofuels, combustion and fire, (k) simulation techniques including CFD, and (l) energy markets, policy and regulation. The spread is quite large and justifies the collection of workshops and symposia organized under the banner of a conclave.

The above approach has paid dividends in the present context since technology increasingly intertwines disparate subjects. Research in energy requires a multi-disciplinary perspective wherein various topics need to be jointly understood. While engineers are aware of unique developments in science, a point they often overlook is the increasing complexity of engineering processes and devices. It has spawned whole new dimensions in systems design, integration, and dynamics. Putting a device together, for example a fuel cell, is not just an aspect of assembly. The behavior of the system is hardly predictable from its components. The whole is beyond the sum total of its parts. Happily, several initiatives of the Institute address systems engineering from concept to prototype.

It is a privilege to be writing this note as I wish the event a great success. With best wishes

K. Muralidhar

Message from Team, Envergy conclave

IIT Kanpur

Dear Energy Delegates,

Welcome to IIT Kanpur and the Energy Conclave 2010!

Depleting energy sources along with deteriorating global environment conditions have kept energy research on the top of the agenda of policy makers as well as researchers alike. The Energy Conclave 2010 of IIT Kanpur is a novel attempt to identify, discuss and explore new approaches to address various challenges in the field of energy sector at the national as well as international level.

Fruitful discussions are expected on many issues during the conclave in the context of recent and ongoing developments related to opening up energy markets, the civilian nuclear agreement, stringent emission norms for vehicles, proposed mileage standards, national solar mission, national hydrogen mission, the initiatives to design and implement smarter grids to optimize electricity distribution, and connectivity for renewable energy sources.

This conclave aims to provide an opportunity to hear renowned researchers and practitioners in the energy area across the globe. The themes to be covered in this conclave are new paradigms for energy policy & regulation, civilian nuclear energy, advances in combustion & transportation, photovoltaic science & technology, Hydrogen & energy storage, and smart energy delivery systems. Scholastic interactions on these themes will form the ideal foundation for further nurturing the growth of energy research in these areas.

Young minds wanting to pursue their career in the energy sector will get the ideal opportunity in this conclave to identify specific research areas and actively pursue them. In addition to the significant level of student participation as listeners; various research papers and as well as posters encompassing frontiers of energy research are submitted to this conclave. Thus, the conclave provides a broad canvas to portray the ongoing energy research endeavors of young scholars and students.

This Conclave provides a platform for exploring new avenues in energy research, strengthen the existing ties of academia and industry, and establish new areas of cooperation and growth. The academic environment at IIT Kanpur is the best platform to conduct such an event.

We wish you all a very productive week at IIT Kanpur.

Team, Energy Conclave 2010

January 8, 2010
International Symposium on
New Paradigms for Energy Policy and Regulation

TIME	SPEAKER	TITLE
8:30 AM – 9:00 AM	Registration	
9:00 AM – 10:00 AM	Inaugural Function : Energy Conclave 2010	
10:00 AM – 10:30 AM	**High Tea & Poster Session**	
	INAUGURAL SESSION	
10:30 AM – 11:30 AM	Dr. Kirit S. Parikh, Former Member, Planning Commission	Towards a framework for pricing in the energy sector
	ROUND TABLE	
11:30 AM – 1:00 PM	**Mr. Scott Hempling**, National Regulatory Research Institute, USA **Mr. L. Mansingh**, Chairman, Petroleum and Natural Gas Regulatory Board **Mr. S Jayaraman**, Member, Central Electricity Regulatory Commission	A Multi-Sector Energy Regulator: A Debate in the Indian Context
1:00 PM - 2:00 PM	**Lunch Break & Poster Session**	

TECHNICAL SESSION I		
2:00 PM – 2:45 PM	Prof. Ajay Pande, IIM Ahmedabad	New Paradigms for Regulating the Indian Power Sector
2:40 PM - 3:20 PM	Mr. Mohinder Gulati, World Bank	Direct Delivery of Power Subsidy to Agriculture: A New Paradigm
2:45 PM – 3:30 PM	Dr. Anoop Singh, IIT Kanpur	Implementing a Market for Renewable Energy Credits in India
TECHNICAL SESSION II		
4:00 PM – 4:45 PM	Dr. Jayant Sathaye, Lawrence Berkeley National Laboratory, USA	Markets for Energy Efficiency: An International Perspective
4:45 PM - 5:30 PM	Mr. Saurabh Kumar, Secretary, Bureau of Energy Efficiency	A Market for Energy Efficiency in India
5:30 PM - 6:15 PM	Dr. Sudhir Sharma, UNFCCC, Bonn	Carbon markets: Perspectives for Developing Countries

Conveners

Dr. Anoop Singh
Dr. Deepu Philip
Dr. Praveen Kulshrestha

January 9, 2010
Workshop on
Civilian Nuclear Energy

TIME	SPEAKER	TITLE
10:00 AM	Prabhat Munshi, IIT Kanpur	Welcome
10:05 AM	R K Singh, Secretary, Indian Nuclear Society	Address
10:30 AM- 11:00 AM	**High Tea & Poster Session**	
11:00 AM	S K Chande Atomic Energy Regulatory Board	Regulatory Aspects in Nuclear Industry
11:45 AM	A K Kohli, Board of Radiation & Isotope Technology	BRIT's role in Propagation of Application of Radiation and radioisotopes in India
12:30 AM	D K Goyal, Nuclear Power Corporation of India Ltd	Indian Nuclear Power plants
1:15 PM - 2:15 PM	**Lunch Break & Poster Session**	
2:15 PM	H S Kushwaha Bhabha Atomic Research Centre	Safety and Health Aspects of Nuclear Power

3:00 PM	S Revankar Purdue University	Assessing Safety Systems of an Advanced Light Water Reactor Design–Code modeling and Integral and Separate Effects Testing
3:45 PM - 4:00 PM	**High Tea & Poster Session**	
4:00 PM	Panel Discussion	Nuclear Engineering Education in India

Conveners

Prof. Prabhat Munshi
Prof. M. S. Kalra
Prof. S. Qureshi

January 10-12, 2010
International Workshop on Advances in Combustion and Transportation

DAY 1: JANUARY 10th, 2010		
TIME	**SPEAKER**	**TITLE**
9.00-10.15 AM	Prof. Ernst Wintner, TU Vienna	**Keynote:** Laser Ignition of Internal Combustion Engines
10:15 – 11.00 AM	**High Tea & Poster Session**	
11.00-1.00 PM	Session 1: New/ Renewable/ Sustainable Fuels	
	Prof. Anuradda Ganesh, IIT Bombay	Biomass Gasification Industry in India
	Mr. Atul Vij GE, Banglore	Overview of GE Gasification Technologies
	Prof. Sagar Maji Delhi Technological University	Utilization of Fuels and Lubricants in I C Engines
1.00-2.15 PM	**Lunch Break & Poster Session**	
2.15-3.45 PM	Session 2: Fire Science and Fire Safety	
	Dr. J C Kanpur, CIFEES	Importance of Fire Hazard Assessment & Quantification for Advanced Engineering Materials
	Mr. Pavan Sharma, BARC	Fundamental and Applied Fire Modelling for NPPs

	Dr. A K Runchal ACRi -- The CFD Innovators	Industrial Fires: Computational Aspects
3.45-4.15 PM	**High Tea & Poster Session**	
4.15-5.45 PM	Session 3: Flames	
	Prof. Amitabha Datta Jadavpur University	Partially Premixed Flames: Applications and Issues
	Dr. Swarnendu Sen Jadavpur University	Flame Synthesis of Carbon Nanostructures
	Prof. Anjan Ray IIT Delhi	Investigation of Dilution Effects on the Laminar Burning Velocity and Flame Stability of Syngas-Air Mixtures at Atmospheric Condition
DAY 2: JANUARY 11th, 2010		
9.00-10.15 AM	Mr. Jeet Bindra Chevron	**Keynote:** Energy & Climate Crisis - Can we have our cake and eat it too?
10:15 - 10:45 AM	**High Tea & Poster Session**	
10.45-1.00 PM	Session 4: Novel Concepts in Engine Research-I	
	Dr. A K Agarwal IIT Kanpur	Performance Emission and Endurance Test of Biodiesel Fuelled Transportation Systems
	Prof. R V Ravikrishna IISC Banglore	Experimental and Computational Studies on a Compact Trapped Vortex Combustor

	Prof. S L Soni MNIT Jaipur	Timed Manifold Injection of CNG in a S.I. Engine
1.00-2.15 PM	**Lunch Break & Poster Session**	
2.15-3.45 PM	Session 5: Novel Materials in Combustion and Transportation	
	Prof. Pradeep K. Rohatgi University of Wisconsin, Milwaukee	Lightweight Metal Matrix Composites and Syntactic Foams for Energy Conservation in Civilian Transportation Systems
	Dr. Sundeep Kumar GE Global	Advanced Cathode Materials for Lithium-ion Batteries
	Dr. Nitin Labhsetwar NEERI Nagpur	Low-Cost Materials for Energy and Environmental Applications
3.45-4.15 PM	**High Tea & Poster Session**	
4.15-6.15 PM	Session 6: Combustion Dynamics and Modelling	
	Dr. S R Chakraborty IIT Madras	Simultaneous Space-Time Multi-Scale Physics of Combustion Dynamics
	Prof. Razi Nalim Purdue university	Constant-Volume Combustion and Pulsed-Detonation Systems for Gas Turbines
	Dr. Abhijit Kushari IIT Kanpur	Combustion Dynamics in a Low Aspect Ratio Dump Combustor
	Prof. A Mukhopadhyay Jadavpur University	Analysis of Evaporation and Combustion of Multi-component Fuel Droplets in a Spray using Spherical Cell Model

DAY 3: JANUARY 12th, 2010		
8.30-10.15 AM	Session 7: Technologies for Large Bore Engines	
	Mr. Anirudh Gautam RDSO, Lucknow	Use of Biodiesel as Traction Fuel for Large Bore Rail Traction Engines
	Mr. M GopalaKrishna GE Banglore	Development of GE-Transportation GEVO Family of Diesel Engines
	Mr. M GopalaKrishna GE Banglore	Development of GE-Transportation GEVO Family of Diesel Engines
10:15 - 10:45 AM	**High Tea & Poster Session**	
10.45-1.00 PM	Session 8: Energy Environment Nexus	
	Prof. A B Gupta MNIT Jaipur	Pollution from Automobiles and Human Health with Special Emphasis on PM
	Dr. Gazala Habib IIT Delhi	Chemical, Microphysical and Optical Characteristics of Aerosols from Biomass Fuel Combustion
	Dr. B K Sapra BARC, Mumbai	Mitigation of Particulates Emitted by Burning of Mosquito Coils using Unipolar Ionisers
	Dr. Tarun Gupta IIT Kanpur	Exploring the Health Effects of Primary Vs Secondary Particulate Matter Present in Diesel Engine Exhaust
1.00-2.15 PM	**Lunch Break & Poster Session**	

2.15-3.45 PM	Session 9: Novel Concepts in Engine Research-II	
	Dr. techn. Johannnes Tauer TU Vienna	Transportation of Ignition Pulses via Optical Fibers?
	Prof. A Ramesh IIT Madras	Utilization of Hydrogen and Biogas in Stationary Internal Combustion Engines
	Prof. P K Bose NIT, Agartala	An Experimental Study of the Emission Reduction Potential of Hydrogen Enrichment in a Diesel Engine Under Different Cases of EGR Operation
3.45-4.15 PM	**High Tea & Poster Session**	
4.15-6.00 PM	Panel Discussion and Valedictory Session, Vote of Thanks	

Conveners

Dr. Avinash K. Agarwal
Dr. Abhijit Kushari
Dr. Akshai K. Runchal
Dr. Tarun Gupta

January 13, 2010
International Symposium on Photovoltaic Science and Technology

TIME	SPEAKER	TITLE
Up to 8:45 AM	Registration	
9:00 AM - 10:00 AM	Mr Deepak Gupta, Secretary, Ministry of New and Renewable Energy, Govt. of India	Inauguration
10:00 AM - 10:45 AM	Prof Ajit Rohtagi, Founder and CTO, Suniva Inc., Atlanta, GA, USA & Regent's Professor, Georgia Institute of Technology, Atlanta, GA, USA	**Keynote address :** Road to Cost Effective Silicon PV to Attain Grid Parity
10:45 AM - 11:30 AM	Prof Vikram Dalal, Dept. of Electrical and Computer Engr., Iowa State University, Ames, Iowa, USA	**Keynote address:** Research Needs in Thin Film Photovoltaic Technology: An Overview
11:30 AM - 11:45 AM	Prof Harsh Sehgal, Vice Chancellor, CSJM University, Kanpur	**Inauguration:** Exhibition of Solar and related Products
11:45 AM - 12:00 PM	**High Tea & Poster Session**	

PANEL DISCUSSION		
12:00 PM - 1:00 PM	**Mr Deepak Gupta, Secretary** MNRE, Govt. of India **Prof. Richard McCullough** MCU, USA **Dr Rajeshwaran, CTO** Moser Baer **Prof. KL Chopra** Ex-Director, IIT Kharagpur **Mr Rajinder Kaura** Bergen Associates Pvt Ltd **Prof V. Dalal** Iowa State University, USA **Mr K Subramanya, CEO** Tata-BP Solar **Mr Prashanth S, MD** HHV Solar	PV Technologies beyond Silicon - Polymer, Hybrid, Multi-junctions, CIGS
1:00 PM - 2:00 PM	**Lunch Break & Poster Session**	
2:00 PM - 2:50 PM	Prof Richard D. McCullough, Carnegie Mellon University, Pittsburgh, PA	Key Note: Printable Solar Cells: Power to the People at a Very Low Cost
2:50 PM - 3:10 PM	Dr KV Bhaskar Rao, Director, DMSRDE, Kanpur	Invited: Synthesis of Organic Materials for Polymer Solar Cells
3:10 PM - 3:30 PM	Prof Viresh Dutta, Centre for Energy Studies, Indian Institute of Technology Delhi	Invited: Dye Sensitised Solar Cells (DSSC) : An Indian Perspective

3:30 PM - 3:45 PM	Dr Arun Kumar Tripathi, Director, Ministry of New and Renewable Energy, Govt. of India	Invited: Solar Cities Program of MNRE
3:45 PM - 4:00 PM	**High Tea & Poster Session**	
4:00 PM - 4:15 PM	Dr Pran Kishan, Institute of Defence Scientists & Technologists, New Delhi	Invited: Solar Energy for Military Applications
4:15 PM - 4:30 PM	Dr. Ratheesh Kumar P M, HHV Solar Bangalore	Invited: India's first a-Si Photovoltaic solar module production Line
4:30 PM - 4:45 PM	Prof Pratima Agarwal, IIT Guwahati	Invited: Amorphous to nano-crystalline transition of hydrogenated silicon films: Effect of silane flow rate
4:45 PM - 5:00 PM	Mrs Silika Mahapatra, BHEL, Bangalore	Invited: Challenges for manufacture of PV Modules, suitable for Saline Environment
5:00 PM - 5:15 PM	Prof Vijay Kumar, CUSAT, Cochin	Invited: Third Generation Solar Cells: Development of Materials and Devices Using Chemical Methodology

Conveners

Dr. R. S. Anand
Prof. Monika Katiyar

January 14, 2010
International Symposium on Hydrogen and Energy Storage

TIME	SPEAKER	TITLE
8:30 AM	Pradip Majumdar Northern Illinois University	**Keynote:** Solid Oxide Fuel Cell for Stationary and Transportation Applications: State-of the-Art Review and Challenges
9:15 AM	Rajendra N. Basu Central Glass and Ceramic Research Institute, Kolkata	**Invited:** Current Status of Solid Oxide Fuel Cell Technology Development
9:40 AM	Rathindra Nath Das Ceramic Technological Institute, Bangalore	**Invited:** Advances in High Temperature Sealing Materials and Techniques
10:05 AM	J. Jasmine Ketzial, A. Samson Nesaraj Karunya University, Coimbatore	**Contributed:** Alternate Electrolyte Materials for Low Temperature Solid Oxide Fuel Cells
10:25 AM- 10:45 AM	**High Tea & Poster Session**	
10:45 AM	A.K. Suri Bhabha Atomic Research Centre, Mumbai	**Invited:** Solid Oxide Fuel Cell - Materials and Related Technologies
11:10 AM	Ankita Tiwari, C. Anand Singh, and Venkatesan V. Krishnan Indian Institute of Technology- Delhi	**Invited:** Modeling of Three Phase Boundary in Ni-Impregnated Anodes in Solid Oxide Fuel Cells (SOFCs)

11:35 AM	Srikanth Vengasandra, Syed Asif, Daniel Carlson, Greg Lance Hysitron, Inc. Minneapolis	**Invited:** Experimental Evaluation and Characterization of Fuel Cell Membrane Phase Separation From Nanoindentation Based Modulus Mapping Technique
12:00 PM	Chandra Shekhar Sharma, Ashutosh Sharma, Marc Madou Indian Institute of Technology, Kanpur	**Contributed:** Proposed Biomimetic Fractal Electrode Designs for Electrochemical Devices
12:20 PM	Jadhav A. B., Manjare S. D Birla Institute of Technology - Pilani	**Contributed:** Experimental and Theoretical Investigation of Proton Exchange Membrane (PEM) Fuel Cell Performance
12:40 PM	Kantesh Balani , Y. Chen, S. Omar, A.K. Keshri, S. Sharma , K. Babu, J.C. Nino, S. Seal and A. Agarwal Indian Institute of Technology, Kanpur	**Invited:** Enhanced Ionic Conductivity of YSZ Electrolyte for Solid Oxide Fuel Cell
1.05-2.15 PM	**Lunch Break & Poster Session**	
2:15 PM	Eric McFarland University of California, Santa Barbara	**Keynote:** Solar Photoelectrocatalysis for Production of Fuels and Chemicals: Is there a cost-effective path forward?
3:00 PM	B.Viswanathan Indian Institute of Technology Madras	**Invited:** Hydrogen Storage In Carbon Materials - Is There Any Hope?
3:25 PM	K.K. Pant Indian Institute of Technology Delhi	**Invited:** Catalytic Hydrogen Production From Oxygenated Compounds by Steam Reforming And Supercritical Water Reforming

3:50 PM - 4:05 PM	High Tea & Poster Session	
2:15 PM	Eric McFarland University of California, Santa Barbara	**Keynote:** Solar Photoelectrocatalysis for Production of Fuels and Chemicals: Is there a cost-effective path forward?
3:00 PM	B.Viswanathan Indian Institute of Technology Madras	**Invited:** Hydrogen Storage In Carbon Materials - Is There Any Hope?
4:05 PM	P.Muthukumar Indian Institute of Technology, Guwahati	**Invited:** Hydrogen Storage using Metal Hydrides - System modeling and Design
4:30 PM	Vilas Tathavadkar Tata Steel Ltd., Jamshedpur	**Contributed:** Novel hydrogen Harvesting Process For Recovery Of Waste Heat From Molten Slag
4:50 PM	Sanjiv Kumar and G.L.N. Reddy Bhabha Atomic Research Centre, Hyderbad	**Contributed:** Hydrogen Storage in Mg Powders Prepared By Thermal Evaporation
5:10 PM	Naresh Nalajala, S.Kumaran, T.Srinivasa Rao National Institute of Technology-Tiruchurapalli	**Contributed:** Synthesis And Characterization of Nanostructured Magnesium Based Multicomponent Alloys For Hydrogen Storage Through Mechanical Alloying
5:10 PM	Deepak Agnihotri, Amita Mahajan and Hitesh Sharma, Rayat and Bahra Institute of Engineering and Biotechnology, Sahauran	**Contributed:** The Catalytic Effect Of The Fullerene Cages On Metal Hydride Complexes CnNaXH4 (X=Al and B) for n=28, 32, 36 and 60

Conveners

Dr. Kantesh Balani
Dr. Raj Ganesh Pala
Dr. Malaya Das
Dr. Jitendra K. Bera

TIME	SPEAKER	TITLE
8:30 AM - 9:00 AM		Registration
9:00 AM - 10:00 AM		Inauguration and Tea
SESSION- I		
10:00 AM - 11:15 AM	Prof. S. C. Srivastava, IIT Kanpur	Smart Electric Power Delivery system : An Introduction and Systems Perspective
	Shri S. K. Soonee, NLDC, New Delhi	Grid Management in Smart Energy Delivery Systems
11:15 AM- 11:30 AM	**High Tea & Poster Session**	
SESSION- II		
11:30 AM - 12:45 AM	Prof. V. Ramanarayanan IISC Bangalore	Intelligent Power Extraction from Solar Photovoltaics
	Shri I. Saha Moserbaer India Ltd	Intelligent Power Extraction from Solar Photovoltaics - Industry Perspective
12:45 PM - 1:45 PM	**Lunch Break & Poster Session**	

SESSION- III		
1:45 PM - 3:00 PM	Mrs. Anjuli Chandra Central Electricity Authority, N.Delhi	Issues in the Integration of Renewables in the Grid
	Prof. P. Sensarma IIT Kanpur	Intelligent Extraction of Power from Wind Electric Systems
3:00PM- 3:15 PM	**High Tea & Poster Session**	
SESSION- IIV		
3:15 PM - 4:30 PM	Prof. A.M.Kulkarni IIT Bombay	Wide Area Stability Phenomena in Power Systems : Monitoring and Control
	Shri R.K.Jain & Shri C.P.Yadav KESCO, Kanpur	Intelligent Metering and Challenges in Anti-Theft Measures in Indian Context
3:00PM- 3:15 PM	**High Tea & Poster Session**	
PANEL DISCUSSION (Identifying R&D Challenges in Smart Energy delivery Systems)		
4:30 PM - 6:00 PM	**PANELISTS** Prof. Bhim Singh, IIT Delhi Prof. A.K.Sinha, IIT Kharagpur Prof. S.A.Soman, IIT Bombay Dr. Rajan Kapur, invVEST, Boulder, U.S.A	

Conveners

Prof. S. C. Srivastava
Dr. P. Sensarma

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TEAM, ENERGY CONCLAVE

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Bottom Row (Left to Right): R S Anand, Avinash K Agarwal,
Sameer Khandekar, Anoop Singh, Tarun Gupta