

International conference on

# Advances in Biological Hydrogen Production and Applications

Organized by

**Institute of Science and Technology**

**Jawaharlal Nehru Technological University Hyderabad**

(14-15 December 2012, JNTUH, India)

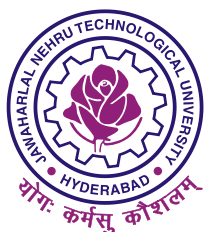
First Announcement



## ICABHPA-2012



Organized By:



## Introduction

Alternative fuels are gaining importance due to the shortage of fossil fuels. Hydrogen has been identified not only as a clean fuel but also as an energy source with high potential. Biological routes for its production are currently gaining importance due to its inherent advantages and eco-friendly nature of the process. Biohydrogen is produced either by photo-biological production or dark fermentation.

Photo-biological hydrogen production is an attractive process due to its simplicity and elegance and uses water as the source of electrons and sunlight for powering the process. Dark fermentation is an abridged pathway of anaerobic digestion but with different organisms/mixed consortia and optimized reactor operating conditions.

The substrates for hydrogen production can vary starting from defined media to different wastewaters. Use of wastewaters for hydrogen production will result in simultaneous remediation of wastewater. Microbial electrolysis cell for biohydrogen generation helps to improve the process performance and to overcome the limitations in fermentative hydrogen production.

Use of hydrogen as a fuel will contribute significantly to cleaner technologies especially in automobiles and distributed energy systems as this is a zero carbon emission fuel.

Considering the importance of hydrogen production, we are organizing a two day international conference on biological hydrogen production on 14<sup>th</sup> and 15<sup>th</sup> of December 2012 at JNTUH, Hyderabad. This conference is being organized jointly by JNTUH and IICT, Hyderabad, IIT Kharagpur, TERI New Delhi, BHU Varanasi and Allahabad University.

## Objective

Ministry of New and Renewable Energy (MNRE), Govt. of India has already prepared Hydrogen road map of India. On the basis of this, they approved four Technology Mission Projects in different areas like Hydrogen production, Storage, Usage, etc. Hydrogen production through biological routes is one of the Technology Mission Projects. It is projected to play an important role in building of a hydrogen based economy. The purpose of the present International Conference is to share the research activities in different areas of biohydrogen production, their applications and to explore the possibilities for future collaboration among other research institutes and commercial interests.

## About JNTUH

The Institute of Science and Technology is a constituent unit of Jawaharlal Nehru Technological University Hyderabad. It was established in 1989 and is currently offering postgraduate and research programmes in interdisciplinary areas of science and technology leading to M.Sc, M. Tech and Ph.D degrees. The units offering academic programmes in the Institute are Biotechnology, Environmental sciences, Spatial Information technology, Chemical science and technology, Pharmaceutical sciences, Water resources and Nano science and technology. Besides these two other centres, the centre for Alternative Energy options and Centre for Innovative research are dedicated to research in different areas. All the centres are equipped with state of art laboratories and the faculty members of the institute attract funded research projects.

## Themes

### Feed stocks for hydrogen production

Hydrogen from Industrial wastes and other resources of Biomass

### Dark fermentation

Nutrient formulation and optimization of process parameters for hydrogen production with pure cultures and microbial consortia

### Photo-biological production

Organisms for photobiological processes, Optimization process parameters with different media

### Genetics and Metabolic Engineering of hydrogen production

Pathways of hydrogen production and scope for manipulation

### BES (Bio Electrochemical System)

Microbial fuel cells, Microbial electrolysis cells

### Purification and storage

Purification methodologies and storage in metal hydrides and complex hydrides and Adsorption Technologies

### Reactor design and scale-up

Reactor design for hydrogen production, Hybrid bioreactors, Pilot plant studies and Scale-up

### Safety issues, Applications and Economics of H<sub>2</sub> production

Safety issues, Existing and Emerging Markets, Stationary and transportation applications.

### Application of bioH<sub>2</sub> for Chemical fuel cell

Electrochemistry of HT fuel cells and Fuel Cells Membranes and stack components and modelling

## Programme: Main Outline

14 December, 2012

### Inauguration

### Technical sessions I & II to be held parallelly

- Themes**
- Feed stocks for hydrogen production
  - Dark fermentation

### Lunch Break

### Poster sessions

### Technical sessions III & IV to be held parallelly

### Themes

- Photo-biological production
- Genetics and Metabolic Engineering of hydrogen production

### Dinner

15 December, 2012

### Technical sessions V & VI to be held parallelly

- Themes**
- BES (Bio Electrochemical System)
  - Purification and storage

### Technical sessions VII & VIII to be held parallelly

- Themes**
- Reactor design and scaleup
  - Safety issues, Applications and Economics of H<sub>2</sub> production
  - Application of bioH<sub>2</sub> for Chemical fuel cell

### Lunch break

### Panel discussion

Road map for the production and utilization of hydrogen energy

### Closing ceremony

Closing remarks and prize distribution

## Registration

## Location

This conference is being conducted in Hyderabad. Hyderabad, the fifth largest metropolis of India, is the state capital of Andhra Pradesh, known for its rich history and culture with monuments, mosques, temples, and a rich and varied heritage in arts, crafts and dance. It is also known as the city of pearls. Hyderabad has an international airport with direct flights from major international carriers to many destinations around the globe. The temperatures during December will vary from 15° C to 28° C.

## Call for Papers

The conference will consist of both invited lectures by eminent scientists and oral/ poster presentation by young researchers. Those who wish to participate in the conference can send abstracts of their work in english not exceeding 300 words along with title, authors, mailing address with telephone numbers to the organizing secretary on or before 14<sup>th</sup> October 2012.

## Accommodation

Limited accommodation will be provided to the student participants at the university guest house on payment basis. Alternatively accommodation can be arranged on payment basis in nearby hotels, the tariff of which varies between ₹ 2,000 to ₹ 10,000.

**Payment:** All payments should be sent through demand draft in favour of "Organizing secretary, ICABHPA-2012", Payable at Hyderabad.

## Important Dates

Announcement & call for abstracts	19 <sup>th</sup> March 2012
Deadline for abstract submission	15 <sup>th</sup> September 2012
Notification to author	1 <sup>st</sup> October 2012
Registration fees and accommodation reservation due	14 <sup>th</sup> October 2012
Deadline for full paper submission	14 <sup>th</sup> October 2012
Dates of Conference	14 <sup>th</sup> and 15 <sup>th</sup> December 2012

Type of registration	Foreign Delegates		Indian Delegates		
	Scientists	Students	Scientists	Students	Industry
Early registration (Upto 15 <sup>th</sup> October 2012)	US \$ 200	US \$ 100	₹ 5,000	₹ 1,000	₹ 10,000
Spot registration/ After 15 <sup>th</sup> October 2012	US \$ 250	US \$ 120	₹ 6,000	₹ 1,500	₹ 12,000
Accompanying Guests	US \$ 50		₹ 1000		

## Organization

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Prof. T Nejat Veziroglu, President, IAHE

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Prof. Rameswara Rao, VC, JNTUH

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## Local Organizing Committee

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## Sponsorship Details

The organizing committee is actively seeking sponsorship for various activities and events. It is an ideal platform for exhibition of books and equipment to showcase their latest products and reach out to the young talents. The committee is willing to discuss detailed and customized sponsorship benefits with the interested sponsors and requests regarding the same should be addressed to the correspondence as already notified. The rates of sponsorship are as follows:

### Conference Events

Lunch (each day) ₹ 50,000  
Dinner (each day) ₹ 60,000  
Tea & snacks (each day) ₹ 20,000  
Technical Session ₹ 20,000

### Others

Paraphernalia ₹ 70,000  
Logistics ₹ 30,000

### Advertisements

Proceedings back-cover ₹ 10,000	Full page (B/W) ₹ 15,000
Proceedings Inside Front Cover ₹ 75,000	Half page (B/W) ₹ 7000
Proceedings Inside Back Cover ₹ 50,000	Banner Exhibition (Inside Hall) ₹ 2000
Proceedings CD ₹ 70,000	Banner Exhibition (Outside Hall) ₹ 1000
Special Full page (Colour) ₹ 50,000	

## Places of Tourist Attraction

### Birla Mandir



The temple, built on a hillock called Kala Pahad, one of the Naubat Pahad twins, lords over its equally celebrated surroundings comprising the imposing Secretariat buildings, the azure-blue waters of Hussain Sagar, the serene and halcyon Lumbini Park, the luxurious Public Gardens dominated by the Asafjahi-style Legislative Assembly complex and the Reserve Bank of India. From the highest level of the temple, the spectacle around is breath-taking.

Charminar is always on the top of the mind of any tourist visiting Hyderabad. To say that Charminar is a major landmark in the city is to state the obvious, to repeat a cliché. Built by Mohammed Quli Qutub Shah in 1591, shortly after he had shifted his capital from Golkonda to what now is known as Hyderabad, this beautiful colossus in granite, lime, mortar and, some say, pulverised marble, was at one time the heart of the city.

### Charminar



### Chow Mohalla Complex



Built in several phases by the Nizams between 1857-1869, this is now one of the heritage buildings. The complex comprises four palaces in Moghal and European styles, of which the main palace is double storeyed with the others being single-storeyed blocks. Located near Charminar - Himmatpura.

Golconda is one of the famous forts of India. The name originates from the Telugu words "Golla Konda" meaning "Shepherd's Hill". The origins of the fort can be traced back to the Yadava dynasty of Deogiri and the Kakatiyas of Warangal. Golconda was originally a mud fort, which passed to the Bahmani dynasty and later to the Qutb Shahis, who held it from 1518 to 1687 A.D. The first three Qutb Shahi kings rebuilt Golconda, over a span of 62 years.

### Golconda Fort



### Qutub Shahi Tombs



These stately domes form an umbrella over the tombs underneath which rest the majestic kings of the Qutub Shahi dynasty in peace. The tombs, which have been silent spectators to the many developments in Hyderabad over four centuries, are open to visitors on all days except Fridays.

One of the modern monuments of trade and technology, it embodies the newfound attitude of Hyderabad and today finds a place of pride. Situated on the outskirts of the city, it is the nucleus of Cyberabad, the IT destination in this part of the world. Cyber Towers is the main building here.

### Hi Tech City





ICABHPA-2012

## REGISTRATION FORM

International conference on

# Advances in Biological Hydrogen Production and Applications

(During 14-15 December 2012)

Organized by: Institute of Science and Technology, Jawaharlal Nehru Technological University, Hyderabad

Name: \_\_\_\_\_

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Presentation: Oral [            ], Poster [            ]

Title of the paper/poster: \_\_\_\_\_

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Author(s): \_\_\_\_\_

Registration type: Scientist [            ], Student [            ], Industry [            ], Accompanying [            ]

Registration amount:

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ii. Demand draft