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GENERAL INFORMATION

Varanasi at a Glance

The holy city of Varanasi, known as the city of temples and learning, is a place of great historical and cultural importance. This spiritual capital of India is situated on the banks of the holy river Ganga and is presided over by Lord Shiva. It is an epitome of the synthesis of cultures, religions and races. The river-front of the city is decorated by hundreds of well built ghats which is a unique feature. The holy Buddhist place, Sarnath is in its precincts. Varanasi is the premier place of oriental learning. The city is reputed for silk fabrics, perfumes, artistic brass and copper wares and a variety of handicrafts. It is an important centre of literature, art and culture. This vibrant city of joy, knowledge and liberation has a magnetic attraction for people all over the world.

RELEVANT INFORMATION

- Registration Fee **Rs. 2000.00** (Others)
- Registration Fee **Rs. 1000.00** (Students)

Dates

April 7-9, 2020

Last date of the abstract submission: 25-03-2020

Venue

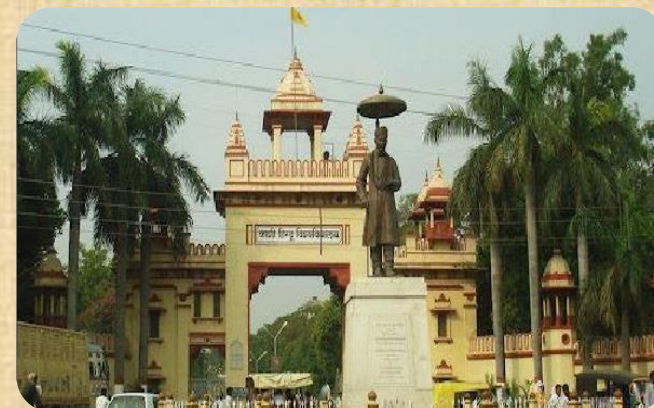
Hydrogen Energy Centre, Department of Physics,
Banaras Hindu University,
Varanasi-221 005

Accommodation

Accommodation may be arranged on request in the University Guest House, Faculty Guest House, Hotel on the payment basis. The details of the hotels in Varanasi may be viewed on www.varanasicity.com

CONFERENCE CUM WORKSHOP On

NEW DIRECTIONS ON APPLICATION OF NANO-MATERIALS FOR HARNESSING HYDROGEN ENERGY



Organized By

**Nanoscience Centre and Hydrogen Energy Centre
Department of Physics
Banaras Hindu University
Varanasi-221005
Web-site : www.bhu.ac.in**

(April 7 - 9, 2020)



Genesis and Objective

Energy is crucially important for survival and efficient sustenance of human beings in a manner in which no other issue is. The production and use of energy has undergone paradigm change after the December 2015 Paris convention on Climate Change signed by 200 countries. The resolution passed on 12th Dec. 2015 of the Paris Convention clearly asserts that the fossil fuels e.g. coal (for Electrical) and petroleum (for motive power e.g. transport) will no longer be permitted to be used and they will remain as "stranded assets" in order to circumvent global warming / climate change so that the earth's temperature does not increase by more than 2°C. India has already declared a cut of ~ 35% in CO₂ emission up to 2030 (which produces global warming / climate change effects). Therefore, we will have to shift even though slowly to a new Energy vector which is climate friendly. From the Indian point of view the energy component embodied in petroleum is most important. This is so since India has only meager fraction of ~ 0.9% of world oil deposit as against 60% for middle east, 25% for N. American, 5% for China. Another relevant development is the pronouncement by Hon'ble Supreme court of India on 13 Nov. 2019 for use of new clean energy fuel "Hydrogen" on the promotion in India, similar to Japan & China. In the light of the above the new energy vector must not only be climate friendly but it should be produced indigenously. Several urban areas in India, e.g. New Delhi, Kanpur, Varanasi etc. are highly polluted cities of the World. Keeping all the above facts in view it can safely be said that "Hydrogen" is the new fuel for India. Produced from water through energy inputs of several types including Solar Energy, it burns back to water. Therefore, it takes care of all the three infirmities of petroleum. It can be indigenously produced, it is climate friendly, is renewable and clean. Its use avoids global warming/urban area pollution. Hydrogen can produce electricity through Fuel cells or by combustion in Turbine (replacement of coal fired thermal power station) and as fuel replacing petroleum for vehicular transport employing IC Engine or Fuel Cells.

The aim and objective of the conference is to provide a platform for researchers, from all relevant disciplines as well as industrial professionals for presenting their research results and interact on the development activities. This conference provides opportunities for the delegates to exchange new ideas and application experiences face to face, to establish research relations & business and to find global partners for future collaboration.

The conference will deliberate on the role of nano-materials for production and storage of hydrogen: and its ramification relevant to harnessing Hydrogen.

- **Nano-materials:** Their role relevant to Hydrogen Energy: Production & Storage
- **Hydrogen Production:** Role of Nano-materials in Enhancing Efficiency of Hydrogen Production
- **Hydrogen Storage:** Elemental, Intermetallic, Complex and Light Weight Hydride: Role of Nano based Storage Materials and Nano Catalyst
- **Hydrogen Storage:** Modeling and Simulation of known and upcoming Nano/Functional Materials
- **Harnessing Hydrogen as a Green Fuel**
- Other Renewable Energy

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KEY NOTE SPEAKER

Prof. C.N.R. Rao (Bharat Ratna), JNCASR, Bangalore

Guideline for the authors

- An electronic version of the manuscript in MS word format should be submitted via E-mail. All the text should be in single space with 1 inch margins on all the sides on (A4) size paper using a font size of 10 with Arial.
- Reference should be in alphabetical order

Last date of the abstract submission: 25-03-2020