

Dr. rer. nat. Somenath Garai

Assistant Professor



PERSONAL STATEMENT

Highly accomplished Quantum Technological researcher with expertise in coordinative stabilization of reactive species, encapsulation chemistry, and inorganic synthesis under confinement. Proficient in structural characterization using X-ray data analysis and skilled in material characterization techniques such as SEM, TEM, and electrochemical workstations. Demonstrated success with a strong publication record, including prestigious international journals and patents. Recognized with national and international awards for research excellence and innovative Quantum Technological contributions to alternative green energy generation/ sustainable conversion.

WORK EXPERIENCE

Job Title	Employer	From	To
Assistant Professor	Banaras Hindu University	2020	Till Date
Assistant Professor	National Institute of Technology, Tiruchirappalli	2018	2020
Post-doctoral Researcher	Weizmann Institute of Science, Israel	2017	2017
Post-doctoral Researcher	Technische Universität, Berlin	2016	2016
Scientific Coworker & Post-doctoral Researcher	Bielefeld University, Germany	2010	2015

QUALIFICATION

Degree Name	University/ Institute	Passing Year	% of Marks/ Grade
Zurich School of Crystallography	University of Zurich	June-2015 (2 Weeks)	Obtained 3 ECTS Credit Points
Ph. D.	University of Bielefeld, Germany	2015	Summa Cum Laude (Best)
M. Sc.	IIT Kanpur	2010	CPI 8.9 out of 10
B. Sc.	Presidency College	2008	70%

Additional Information

- Research Papers – 75 (Published) & 8 (Submitted/Under Review)
- Patents – 02 (Two) & Applied-06 (Six)
- Technology Transfer and Industrialization: 04 (Four) Technologies
- Research Projects – 01 (One, Newly Sanctioned), 04 (Four, Ongoing) & 06 (Six, Completed)
- Book Chapter Publication – 05 (Four)
- Membership of Professional Societies – 04 (Four)
- Invited Talks – approx. 30 (Thirty)

MOST IMPORTANT SCIENTIFIC PUBLICATIONS

- *Adv. Energy Mater.* **2020**, 2001377. (I.F. - 29.698)
- *J. Am. Chem. Soc.* **2019**, 141, 9170. (I.F. - 16.383)
- *ACS Appl. Mater. Interfaces* **2017**, 9, 35086-35094. (I.F. - 10.383)
- *Angew. Chem. Int. Ed.* **2016**, 55, 6634-6637 (**Front Cover**). (I.F. - 16.823)
- *Adv. Mater.* **2015**, 27, 5165-5170. (I.F. - 32.086)
- *Angew. Chem. Int. Ed.* **2015**, 54, 5879-5882. (I.F. - 16.823)
- *Chem. Eur. J.* **2015**, 21, 4321-4325 (**Hot Paper**). (I.F. - 5.02)
- *Chem. Eur. J.* **2014**, 20, 6659- 6664 (**Front Cover**). (I.F. - 5.02)
- *Angew. Chem. Int. Ed.* **2013**, 52, 11765-11769. (I.F. - 16.823)
- *Angew. Chem. Int. Ed.* **2012**, 51, 10528-10531. (I.F. - 16.823)

CONTACT DETAILS

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- 📍 Ashrampara, P.O. & Dist. Jalpaiguri, Bengal - 735101, India

SKILLS

- POM Quantum-Containers Synthesis & Characterization.
- Cavity Confined Metal-Chalcogenide/Pnictide Complexes.
- Single Crystal X-Ray Crystallography of Macromolecular Cages.
- Naturally Inspired Electro- and Photo-Catalysis.
- Solid State Inorganic Synthesis at Higher Temperatures.
- Scanning Electron and Transmission Electron Microscopy.

ONGOING RESEARCH

INTERESTS

- Quantum Containers for Industrial Green H₂ Production.
- Bulk Methanol/CNG Production for Industrial Applications.
- Quantum Containers for Memristor/PV Applications.
- Overall Water Decontamination.
- Gainful Reclamation of Plastic Waste into Fuel.
- Advanced REE Extraction.
- Quantum Containers for Nb/Ta Separation.

FELLOWSHIPS

- VATAT – Israel
- INSPIRE-Faculty Award (not received due to NIT Tiruchirappalli employment)

AWARDS

- Early Career Research Award, 2019
- CSIR- NET (JUNE,2010) [AIR-01]
- GATE, 2010 [AIR - 35]
- CSIR- NET (JUNE,2009) [AIR-10]
- IIT-JAM, 2008 [AIR-18]

MOST IMPORTANT TECHNOLOGICAL HIGHLIGHTS

- ❁ **Banaras Hindu University** has received the **Prestigious Visitors' Award, 2023 (Hon'ble Presidents' Award)** based on our "Industrial Photocatalytic Green Hydrogen Production Technology" in March 2025.
- ❁ Created **India's first Digital Twin** for scaling a photocatalytic hydrogen-evolution process from lab scale to industrial pilot scale.
- ❁ **National and International Technology Transfer** for our "**Industrial Photocatalytic Green Hydrogen Production Technology**" accomplished through **Department of Science and Technology (DST)**, Govt. of India, in 2024.
- ❁ Our **Green Keplerate Laboratory** derived "Industrial Photocatalytic Green Hydrogen Production Technology" has received National and International highlights through **Press Release from the Press Information Bureau (PIB) of India on 11th October 2023**.
- ❁ **Completed 06 Research Projects (~2.14 Cr.)** as the Principal Investigator from Ministry of Mines, DST, SERB and PSU industries with total valuation of approximately ~12.4 Crore at the **Green Keplerate Laboratory**.
- ❁ Selected for the **INSA-ACS Future Leader Fellow** through Indian Academy of Sciences.
- ❁ Nominated through DST for the **Keynote lecture in the Asian Productivity Organization (APO) Workshop on Green Hydrogen Systems for the Sustainable Energy Transition** held on 7th - 9th February 2024 in Japan on behalf of National Productivity Council (NPC), India.
- ❁ Invited and **Demonstrated the Green Hydrogen Technology in 9th Smart Cities INDIA Expo** held on 17th – 19th January 2024 which was organized by India Trade Promotion Organization (ITPO), India and Exhibitions India Group.
- ❁ **Represented India at Tallin, Estonia in Big in Asia: Annual Event** held on 7th December 2023 which was organized by Estonian Business and Innovation Agency (EIS), Estonia.
- ❁ Invited and successfully **Demonstrated the Green Hydrogen Technology** in 14th Clean Energy Ministerial and 8th Mission Innovation Meeting held on 19th – 22nd July 2023 which was organized at **G20 Energy Transition Ministerial Meeting (ETMM)**, Goa University, Goa and **AHFC Expert DST Panel Meeting** at Banaras Hindu University, Varanasi on 9th - 10th October, 2023.
- ❁ Distinguished as the **Academic Spoke partner for the Ministry of Mines National Hub** at NFTDC, Hyderabad.
- ❁ **NITI AAYOG** has selected us as one of the **Six Best National Technology** to participate in **Innovation Centre Denmark (ICDK) Next-Generation Water Action Global Challenge 2021 in Denmark Technical University (DTU)** and in the **Suqia Water Innovation Global Award 2021, UAE**.

Major Research Focus

Quantum Encapsulation Technology-Enhanced Fuel Efficiency: Catalyzing a Green Revolution and Propelling the Future of "*Make-in-India*"

Embark on the era of hydrogen (H_2) innovation with *Quantum Encapsulation Technology* leading the charge! Seamlessly deliver H_2 for emission-free fuel, industrial feedstock or powering buildings with unrivalled expertise and cutting-edge solutions at every stage of our endeavour. The future is *Green H_2* and we're here to make it happen! The Green Keplerate Laboratory Team (GKL Team) at Banaras Hindu University, under the astute leadership of the eminent Dr. *rer. nat.* Somenath Garai, proudly present a revolutionary Quantum Technological marvel in the realm of green energy production. For an industrial revolution, they had unveiled the direct solar-driven quantum catalysis process, giving birth to Solar Green H_2 – a pristine and efficient fuel that's set to redefine the energy landscape. The eco-friendly innovation is not just a game-changer; it's a cost-effective powerhouse, delivering bulk energy with unparalleled quantum efficiency. Revolutionize the energy production approach with a faster, more affordable, and greener Solar Green Hydrogen, courtesy of the *state-of-the-art* green technology. This isn't just progress; it's a quantum leap towards a sustainable future. Dr. Garai and his team's cutting-edge technology doesn't just promise efficiency; it creates opportunities for employment growth, aligning success with sustainability.

The team has pioneered three generations of lab-scale photochemical reactors, aligning with the "*Waste-to-Wealth*" initiative for robust Green H_2 fuel production. The cutting-edge design features integrated internal illumination and external reflective panels for optimal solar energy harvesting at any light conditions. An innovative continuous electron supply system, fuelled by recycled industrial metal wastes, propels the reactors to the peak Green H_2 fuel production —*1 Liter per minute per 10 grams of Quantum Photocatalysts*. The heightened purity of our H_2 gas eliminates the need for additional purification steps, enhancing cost-effectiveness. The lab-scale demo unit is a powerhouse capable of bulk production at a remarkably cost-effective rate. To put it in perspective, producing 50 Liters of light-induced Green H_2 that only costs ₹4 with an electricity cost of ₹10 per unit, well below the limit set by the Department of Science and Technology (DST), Government of India. Experience innovation, efficiency, and cost-effectiveness in every green drop!

The GKL Team doesn't stop at fuel production—they've revolutionized automotive power with storage-free hydrogen fueled direct internal combustion engines. They've engineered and crafted *Green H_2 -powered Direct Internal Combustion Engines* for various vehicles (four-wheelers & two-wheelers), and power generators (2.8 KW Honda generator and a 7.5 HP diesel engine-based generator). Harnessing the higher energy efficiency of hydrogen, the deliberately modified engines go beyond being cost-effective—they're environmental-friendly and exceptionally safe. After meticulous optimization, the H_2 -IC engines emerge superior, emitting only water vapours from the exhaust. Their pioneering work in developing Green H_2 -powered engines for a variety of applications signifies a monumental step forward in sustainable energy solutions, promising a cleaner and greener future for transportation and power generation.

Technological Recognitions

We are glad that our Quantum Green Hydrogen technology has been awarded the prestigious Hon'ble President Award (VISITOR's Award). Prof. Srikrishna has received it on our behalf as the President of BHU innovation council.



Technological Recognitions

The inauguration of the functioning unit of Green H₂ generation and H₂ mobility was graced by the esteemed presence of Dr. Anita Gupta, Head of the C³E Division at DST, Dr. Ranjith K. Pai, Scientist and Director of the C³E Division at DST, and Prof. R. R. Sonde, IIT Delhi, Chairman of the Expert Committee, during the DST-PAC Meeting of AHFC and IC-MAP initiatives on 9th - 10th October, 2023. Dr. Garai and his team's groundbreaking innovations have earned commendations from a multitude of prestigious national and international platforms majorly on DST platform and DD news. Their pioneering work has been prominently recognized at high-level ministerial meetings and celebrated at renowned innovation exhibitions. This recognition not only underscores the substantial impact of their contributions to the field of sustainable energy but also highlights the global esteem for their advancements in hydrogen fuel technology. For those interested in delving deeper into these significant events, the specific links are provided below:

Sl. No.	Particulars	Link
1	Solar Hydrogen Production Technology Demonstration Set-Up in the G-20 Ministerial Meeting, Goa	 https://youtu.be/dkF3Q-FoJNY  https://youtu.be/mua3E5yUbGk

2	Demonstration by GKL at the 9 th Smart Cities INDIA Expo on 17-19 th January, 2024 at Pragati Maidan, New Delhi	 https://youtu.be/La9nwOIAnuM
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Technological Highlights

Sl. No.	Highlight Platform	Link
1	Department of Science & Technology	https://dst.gov.in/cutting-edge-quantum-technology-backed-green-hydrogen-production-unveiled-power-green-future
2	Government of India - Press Information Bureau	https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1966488
3	ET Government News	https://government.economictimes.indiatimes.com/news/technology/cutting-edge-quantum-tech-backed-green-hydrogen-production-unveiled-to-power-green-future/104336121
4	DD News	https://ddnews.gov.in/sci-tech/quantum-technology-promises-green-hydrogen-revolution
5	Times of India	https://timesofindia.indiatimes.com/city/varanasi/experts-discuss-green-h2-fuels-production-utilisation/articleshow/104358063.cms
6	Krishi Jagran, India	https://krishijagran.com/news/quantum-powered-green-hydrogen-production-paves-way-for-sustainable-future/
7	Carbon Pulse, USA	https://carbon-pulse.com/228388/
8	Sputnik News, Russia	https://sputniknews.in/20231011/india-unveils-cutting-edge-quantum-technology-to-boost-usage-of-green-hydrogen-4737808.html



Driving the Hydrogen Fuelled Boat in the River Ganges

<https://www.youtube.com/watch?v=-jLBpJ3GOHk>



Furthermore, Dr. Garai had the distinct honor of representing our nation at the illustrious "Big in Asia: Annual Event," held in Tallinn, Estonia, on 7th December, 2023. This prominent event was orchestrated by the Estonian Business and Innovation Agency (EIS), showcasing Dr. Garai's esteemed position within the global academic and professional community. Nominated by the prestigious Department of Science and Technology (DST), Dr. Garai was selected to deliver a lecture at the highly esteemed Workshop on Green Hydrogen Systems for the Sustainable Energy Transition, which took place from 7th to 9th February, 2024. This significant event was meticulously organized by the National Productivity Council, India, in collaboration with the APC Secretariat under the auspices of the Ministry for the Promotion of Industry and Internal Trade.

Dr. Garai was distinguished with the prestigious INSA-ACS Future Leader Fellowship through the Indian Academy of Sciences, underscoring his exemplary contributions to scientific research and innovation. Additionally, on 27th March, 2024, he participated in the New Generation Ideation Contest at the HP Green R&D Centre in Bengaluru, where his exceptional ideas earned him the Commendation Prize in the Open Category. These accolades collectively highlight Dr. Garai's profound impact and recognition in both national and international scientific communities.

Innovations Featured by the Ministry of Education, Govt. of India.

Additionally, the bulk green hydrogen production and utilization technology developed by Dr. Garai and his team has garnered recognition from the Ministry of Education and has been prominently featured on their official YouTube channel. The video can be accessed through the following link: <https://www.youtube.com/watch?v=WeJBvOOwuL4>.



Dr. Garai's most recent accolade involves the granting of a significant project by the Indian Navy. This project encompasses the testing and trial of a pilot plant for green H₂ generation technology, as well as the conversion of a ship engine of *INS Shivaji* to operate efficiently on H₂ fuel. This recognition not only underscores Dr. Garai's expertise in sustainable energy solutions but also highlights the strategic importance of his work in advancing maritime technology through innovative hydrogen fuel applications. This project represents a crucial step towards enhancing the efficiency and sustainability of naval operations, further solidifying Dr. Garai's standing as a leading figure in the field of green energy.

In summary, Dr. Garai's pioneering work in sustainable energy has earned him widespread recognition. From prestigious awards to leading projects with the Indian Navy, his expertise and contributions are making significant strides toward a greener future.

Snapshot of Sanction Letter of Indian Navy Project.

समुद्री अभियांत्रिकी निदेशालय		Directorate of Marine Engineering
नौसेना मुख्यालय		Naval Headquarters
रक्षा मंत्रालय		Ministry of Defence
'ए' विंग, सेना भवन		'A' Wing, Sena Bhawan
नई दिल्ली 110011		New Delhi 110011

फैक्स संदेश / FAX MESSAGE

द्वारा / From	: NHQ/ DME	Fax	: 011 – 23011352
सेवा में / To	: HQSNC/ CEO	Fax	: 0484 – 2667263
सूचनार्थ / Info	: INS SHIVAJI/ O/i-C CoE (ME)	Fax	: 02114 – 284701
	: Green Keplerate Laboratory (KAO: Dr. rer. nat. Somenath Garai)		BY MAIL
मिसिल सं. /File No.	: EG/6030/ENVIRON	प्रष्ठ/ Pages	: Date : 06 May 24

IMPLEMENTATION OF 'QUANTUM TECHNOLOGY'

1. **Background.** Efforts are being progressed at this Headquarters towards energy efficiency and environment sustainability i.a.w. the Indian Navy's Environment Conservation Roadmap (INECR). One of the primary objectives of the INECR is the implementation of hydrogen as an '*Alternate Fuel*'. Hydrogen due to its clean combustion properties is seen as the fuel for the 21st century and is emerging as a promising energy carrier and a clean alternative for the energy sector challenges related with fossil fuels.

2. **Green Hydrogen.** Depending on the extraction method involved, hydrogen is classified into three distinct categories, namely, Grey, Blue and Green hydrogen. Green hydrogen is obtained through electrolysis of water, powered by electricity derived from renewable energy sources. The net carbon footprint of Green hydrogen is thus contingent upon the carbon neutrality of the electricity source and is marginally lesser than that of the Grey and Blue hydrogen.

3. In furtherance to the efforts, Dr. rer. nat. Somenath Garai of Green Keplerate Laboratory, at Banaras Hindu University has been engaged towards an innovative '*Quantum Technology*' developed at their laboratory. Accordingly, a meeting was held at NHQ/ DME towards exploring the technology developed by Prof. Garai. The presentation made by the professor during the meeting is placed at **Enclosure 1**. Further, the professor was engaged towards formulation of a preliminary proposal towards progression of the technologies. An overview of the technologies is enumerated in the succeeding paragraphs.

4. **Fire Retardant Pipes.** During discussion with Prof. Garai, this Headquarters brought out the problem statement of frequent fires onboard *IN* platforms occurring due to failure of high-pressure fuel pipes and requested if the quantum technology can be utilised to develop a solution. Accordingly, a proposal towards development of a double sheathed pipe with embedded graphene in the system has been proposed (placed at **Enclosure 2**). The solution aims at utilising the exceptional fire-retardant and self-extinguishing properties of cellular graphene.

- (a) Hero Splendour - BS VI -2.0 Engine
- (b) Bajaj Pulsar - 180 cc BS VI Engine
- (c) Maruti Suzuki Zen - BS IV Engine
- (d) Maruti Wagon R - BS VI Engine
- (e) Honda EP2500 CXS Petrol-based Portable Generator - AVR type Engine
- (f) Diesel Generator (7.5 KW) - AVR type Engine
- (g) Petrol Based Boat Engine (Tech demo on 09 -10 Oct 23 in the River Ganges)

10. Post deliberations, a way ahead towards the progression of the R&D of these technologies have been formulated at this Headquarters and approval of the competent authority has been obtained for the same. The broad plan of action is enumerated below: -

(a) **Development of Fire-Retardant Pipeline.** Post development of the pipeline, preliminary trials can be steered by CoE (ME)/ INS Shivaji with assistance from NBCD School and the case can then be forwarded to NHQ/ DNBCD for further action.

(b) **Generation, storage and Utilisation of Green Hydrogen.** The 'Green Hydrogen' development has already reached TRL 6 and at this stage the 52 KW DA at INS Shivaji can be considered for trials. Concurrently, a matching hydrogen production and storage facility can also be considered for setting up at INS Shivaji with joint investment of the firm and R&D fund of INS Shivaji.

11. In view of the foregoing, HQSNC is requested to direct INS Shivaji to undertake the following: -

(a) Progress towards the R&D of the technologies as mentioned at Para 10 above.

(b) A preliminary report along with actionable plan be forwarded to this Headquarters by end May 24. Monthly progress and Action Taken Report be forwarded every month commencing Jul 24.


(विवेक गद्रे/ Vivek Gadre)
कोमोडोर / Commodore
कोमोडोर समुद्री अभियांत्रिकी-II
Commodore (Marine Engineering)-II

Demonstration of Hydrogen powered Air-Mobility: Unmanned Aerial Vehicle Technology

The demonstration of the hydrogen-powered UAV flight conducted by Dr. Garai can be accessed here: <https://youtu.be/SqLCf4n33AM>.

**Encapsulation
Chemistry**



**Advanced Quantum
Energy**



**“Revolutionizing Hydrogen Fueled UAV
Power: A Live Demonstration of Next-Gen
Unmanned Aerial Technology.”**

*A Next-Generation Quantum-Powered Green Energy Fuel
Technology Briefing by*

Dr. rer. nat. Somenath Garai



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Nation's First Ammonia-Fueled IC Engine: Alternative to Hydrogen-Powered Engines

Dr. Garai has trialed ammonia as a fuel with 50% more energy density than liquid hydrogen, offering a practical alternative for transportation and energy storage. Its ease of storage and existing infrastructure make it ideal for powering vehicles and industrial applications. Our NH_3 engine development further showcases ammonia's potential as a sustainable energy solution. The video can be accessed through the link : <https://youtu.be/v60mvZFRfiw>

**Encapsulation
Chemistry**



**Advanced Quantum
Energy**

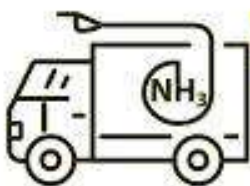


एक कदम स्वच्छता की ओर



**“Revolutionizing the Future of IC-Engines:
Powering the Next-Generation Mobility
with Sustainable Ammonia Fuel.”**

*A Next-Generation Quantum-Powered Green Energy Fuel
Technology Briefing by*



Dr. rer. nat. Somenath Garai

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Approval from DST for Technology Transfer

The DST has approved the technology transfer to a private entity and has committed to issuing analogous certifications to other governmental and non-governmental organizations as necessary.



दूरभाष / Tel. : 26962819, 26567373,
26562134, 26562122 (EPBAX)
फैक्स / Fax : 26569908, 26515637,
26863047, 26862418
वेबसाइट/website : www.dst.gov.in

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
विज्ञान और प्रौद्योगिकी विभाग
टेक्नोलॉजी भवन, नया महरौली मार्ग
नई दिल्ली-110 016

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
TECHNOLOGY BHAVAN, NEW MEHRAULI ROAD
NEW DELHI-110 016

Date:-05.04.2024

TO WHOM IT MAY CONCERN

Under the DST Project vide letter DST/TMD/HFC/2K18/06 Dated 22nd October 2021, Dr. Somenath Garai has developed "Photocatalytic Green Hydrogen Production and Hydrogen-Mobility Technology". Here we authorize the Principal Investigator Dr. Somenath Garai for transferring this technology to the **Aaparth Engineers Pvt. Ltd.** for upscaling this technology to the industrial scale and to perform further R&D to facilitate the same for commercial applications. This issue with the approval of competent authority.

We wish good luck and best wishes for Dr. Garai for his future Endeavors.

Dr. Ranjith Krishna Pai
Scientist 'F'/Senior Director
E-Mail:- ranjith.krishnapai@gov.in



विज्ञान एवं
प्रौद्योगिकी मंत्रालय
MINISTRY OF
SCIENCE AND
TECHNOLOGY



GREEN KEPLERATE LABORATORY

DIRECT SOLAR SUPER GREEN HYDROGEN BULK PRODUCTION



FIRST
GENERATION
PROTOTYPE



SECOND
GENERATION
PROTOTYPE

THIRD
GENERATION
PROTOTYPE



Special Thanks to **DST, New Delhi**
Project No. - DST/TMD/HFC/2K18/06

Snapshots of converted conventional Direct IC-engine based Green H₂ fueled vehicles and generators.



Youtube Links of converted conventional Direct IC-engine based Green H₂ fueled vehicles and generators.

Sl. No.	Particulars	Link
1.	Showcasing the Green H ₂ Fueled WagonR (BS6 engine) in the Campus of B.H.U.	 https://youtu.be/y59XDwvWWZw
2.	Showcasing the Green H ₂ Fueled Boat (BS4 engine) in the Holy River Ganges	 https://youtu.be/-jLBpJ3GOHk

3.	Showcasing of Green H₂ fueled Diesel Generator	 https://youtu.be/s6aamtAgGXg
4.	Test Driving of the Green H₂-Powered Maruti Zen (BS4 engine) car	 https://youtu.be/WQJsCqH-7_4

5.	Driving test of Green H₂ Fueled Bajaj CT100 (BS4 engine)	 https://youtu.be/6sjd101fheE
6.	Showcasing of Green H₂ Fueled Bajaj Pulsar 160cc (BS6 engine)	 https://youtu.be/Hvqr-pcKh48

*Winners for the Next-Generation Ideation Challenge as
Organized by HPCL*



**COMMENDATION
PRIZE**
for open category



**NEW
GENERATION
IDEATION
CONTEST**

IDEA Advanced Industrial-Scale Solar Hydrogen Production Technology: Quantum Encapsulation in Action

INSTITUTE Banaras Hindu University, Varanasi

PRIZE AMOUNT TEN THOUSAND ONLY

₹ **10,000**

FOR NEW GENERATION IDEATION CONTEST 2023

Appendix-B

YouTube Links for the showcasing of the Green H₂ production and H₂-Mobility technologies.

Particulars	Link
Lab-Scale Green H ₂ Production Demonstration	https://youtu.be/uIKdd_5Uzfw
Green H ₂ Fueled WagonR (BS6 engine) in the Campus of B.H.U.	https://youtu.be/y59XDwvWWZw
Green H ₂ Fueled Boat (BS4 engine) in the Holy River Ganges	https://youtu.be/-jLBpJ3GOHk
Green H ₂ fueled Diesel Generator	https://youtu.be/s6aamtAgGXg
Green H ₂ -Powered Maruti Zen (BS4 engine) car	https://youtu.be/WQJsCqH-7_4
Green H ₂ Fueled Bajaj CT100 (BS4 engine)	https://youtu.be/6sjd101fheE
Green H ₂ Fueled Bajaj Pulsar 160cc (BS6 engine)	https://youtu.be/Hvqr-pcKh48
Technology Demonstration & Recognition Snapshots	https://tinyurl.com/ysf95nbj
Some Important Technological Details	https://tinyurl.com/meu2xz3w



Driving the Hydrogen Fuelled Boat in the River Ganges

<https://www.youtube.com/watch?v=-jLBpJ3GOHk>