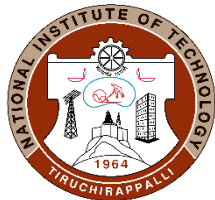




शिक्षा मंत्रालय
MINISTRY OF
EDUCATION

GIAN Course on **Green Ammonia: A Key Player in the Carbon-Free Energy Revolution**

November 18th to 29th, 2024



Organized by
Department of Mechanical Engineering,
National Institute of Technology, Tiruchirappalli - 620015, Tamil Nadu, India

Overview

Green ammonia is emerging as a promising fuel for the future due to its potential to address some of the key challenges associated with transitioning to a sustainable energy landscape. Green ammonia is produced using renewable energy sources, such as wind, solar, or hydropower, which makes its production carbon-free. This starkly contrasts conventional ammonia production methods, which typically rely on fossil fuels and release significant carbon dioxide emissions. Ammonia is an excellent energy carrier because it has a high energy density by weight and can be stored and transported relatively easily. It can serve as a valuable alternative to traditional fossil fuels in various applications. It will include examples of recent state-of-the-art experimental research carried out all over the world. Course participants will learn these topics through lectures and tutorial sessions that reinforce their understanding, while also getting exposure to the avenues for further research.

Objectives

The primary objectives of the course are as follows:

- i) To educate participants about the concept of green ammonia, its production methods, and its significance in addressing global challenges related to carbon emissions and sustainable energy.
- ii) To promote a deep understanding of the principles, technologies, and processes involved in green ammonia synthesis and utilization, including cold plasma-water interface technology.
- iii) To emphasize the environmental benefits of green ammonia, including its role in reducing greenhouse gas emissions, supporting clean energy systems, and sustainable agriculture.
- iv) To encourage the participants to engage in research, innovation, and creating a platform for participants to connect with experts, peers, and professionals
- v) Providing exposure on international and national policies and regulations related to green ammonia production and utilization.

Dates for the course	November 18th to 29th 2024												
Course Content	<ul style="list-style-type: none"> • Introduction to Green Ammonia Production Technologies • Global Green Energy Initiatives and Green Ammonia Projects • Renewable Energy Integration with Green Ammonia • Microwave Catalysis for Ammonia Production • Challenges in Traditional Haber-Bosch Process • Cold Plasma Technology for Ammonia Synthesis • Environmental Benefits of Green Ammonia in Transportation • Integration of Ammonia with Renewable Energy Sources • Post-Plasma Catalysis for Ammonia Production • Ammonia Fuel Cells - Principles and Applications • Technological Advances in Plasma-Based Ammonia Synthesis 												
You Should Attend if...	<ul style="list-style-type: none"> • Students at all levels (B.Tech /MS / M.Tech / PhD) or Faculty from reputed academic institutions and technical institutions. • Faculty from reputed academic institutions and technical institutions working in the area of Alternative fuels <p style="text-align: center;">Number of participants for the course will be limited to fifty.</p>												
Course Fee	<p>The participation fee for taking the course is as follows:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: right;">Course Fee (including GST 18%)</th> </tr> </thead> <tbody> <tr> <td>Scientist and Industrial Participants from Abroad</td> <td style="text-align: right;">US \$ 400 /-</td> </tr> <tr> <td>Faculty from Abroad</td> <td style="text-align: right;">US \$ 300 /-</td> </tr> <tr> <td>Students from Abroad</td> <td style="text-align: right;">US \$ 200 /-</td> </tr> <tr> <td>Scientist and Industrial Participants Faculty</td> <td style="text-align: right;">Rs. 5000 /- Rs. 3000 /-</td> </tr> <tr> <td>Students / Research Scholars</td> <td style="text-align: right;">Rs. 2000 /-</td> </tr> </tbody> </table> <p>The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges and working lunch and refreshments. It will be very helpful if you can bring your laptop for the course.</p> <p>** The participants may be provided hostel accommodation, depending on the availability, on additional payment basis. Request for hostel accommodation may be submitted to: lakshmanankrct@gmail.com</p>		Course Fee (including GST 18%)	Scientist and Industrial Participants from Abroad	US \$ 400 /-	Faculty from Abroad	US \$ 300 /-	Students from Abroad	US \$ 200 /-	Scientist and Industrial Participants Faculty	Rs. 5000 /- Rs. 3000 /-	Students / Research Scholars	Rs. 2000 /-
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Students from Abroad	US \$ 200 /-												
Scientist and Industrial Participants Faculty	Rs. 5000 /- Rs. 3000 /-												
Students / Research Scholars	Rs. 2000 /-												
Payment Procedure	<p>Indian participants: Go to State Bank Collect (onlinesbi.sbi) → Accept the terms and conditions → Select category: Educational Institutions → Select State: Tamil Nadu → Select Name of the Educational Institution: Conference and Workshop NIT Trichy → select payment Category: GIAN GA CFER 2024 and provide details of payment and submit.</p> <p>International Participants: Required to make the course fee payment via SWIFT transfer. <i>Account Details for SWIFT Transfer:</i> Account Number: 38322028974; Account Name: Director, NIT-Tiruchirappalli, SWIFT Code: SBININBB190; Bank Name: State Bank of India.</p>												

How to Register

Stage 1: Course Registration:

Initially fill all the details and register for the course using the following Google form and confirm your registration.

<https://forms.gle/DADj2wmUSiYNNbKm8>

Last date for Course Registration: 25th October 2024

Stage 2: Course Fee Payment and Complete Registration (Only selected candidates):

Only Selected Candidates will be intimated through E-mail by the Course Coordinator.

Fill the google form using the link given below.

<https://forms.gle/wCEPCQ11Mb2aM5HEA>

Last date for Fee Payment and Complete Registration: 17th November 2024

**** Accommodation** will be provided on request (Charges per day per person)

Hostel: ₹115 + 18% GST

Guest House (Single Occupancy): ₹1200 + 18% GST

Guest House (Double Occupancy): ₹2000 + 18% GST

Course Coordinator

Dr. R. Anand

Professor

Department of Mechanical Engineering

National Institute of Technology

Tiruchirappalli – 620 015,

TamilNadu, India

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Phone No.: +91 431 2503423

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For any queries, you may contact (Research Scholars):

1. Mr. P. Lakshmanan

Mobile: +91 9585733389

Email: lakshmanankrct@gmail.com

2. Mr. K. Saravanan

Mobile: +91 9791454803

Email: sarakarthik03@gmail.com

The Faculty



Prof. Jianli (John) Hu Professor of West Virginia University, Morgantown, WV, USA. Lead the creation of the interdisciplinary research center related to natural gas utilization. Direct microwave catalysis and plasma catalysis for natural gas conversion, ammonia synthesis, and clean hydrogen production.

Lead decarbonization program to convert CO₂, plastics, and biomass to value-added chemicals. In 2016, he led the initiative to create a WVU shale gas center consisting of 10 faculty from across different colleges at WVU. Serve at AIChE RAPID Institute advisory board and several other technological councils. Developed two courses (oil & gas Refining Chemistry and Process, Unconventional Catalysis). In 8 years at WVU, he secured 16 federal and state-funded grants as PI/Co-PI with a total funding amount of \$27 million. Some of these projects are in collaboration with industrial companies (Shell, Dow, SoCalGas), National Laboratories (PNNL, NETL, LLNL), and universities (Clemson University, NCSU, USC, etc).



Dr. R. Anand is a Professor in the Department of Mechanical Engineering at the National Institute of Technology, Tiruchirappalli. He is a recipient of the Australian Endeavour Fellow. His area of specialization is internal combustion engines, and it expands to the field of alternative fuels, waste-to-energy conversion, emission control, and fuel cells.

His research-oriented scholarship has facilitated him to publish 69 Science Citation (SCI)/Scopus Indexed research journals and presented papers at several international conferences. He has been granted 14 Indian patents and published 2 patents in the area of biocatalyst, biofuel, and manufacturing. He has contributed 4 books and 11 book chapters in renowned publications (Elsevier, Springer & CRC Press). He has completed 8 projects and 3 ongoing sponsored projects from DST-BRICS, MoE-SPARC, GTRE-DRDO, DST-UKERI, DST-SERB, DST-YSS, MoE, and IEI-India.

Course Coordinator

Dr. R. Anand

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For any Queries

Contact:

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Mr. K. Saravanan (9791454803)

or mailto: anandachu@nitt.edu