Sri Venkateswara College of Engineering

Autonomous Institution, Affiliated to Anna University, Chennai
Approved by the AICTE, Accredited by NAAC

Department of Mechanical Engineering

AICTE ATAL SPONSORED ADVANCED FDP ON

"SUSTAINABILITY THROUGH GREEN MOBILITY- HYDROGEN FROM RENEWABLES AS A VIABLE SOURCE OF ENERGY"

09th – 23rd September, 2024

REPORT

Prepared by

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The Department of Mechanical Engineering, SVCE is grateful to AICTE, Government of India to receive sponsorship of Rs. 6 Lakhs for conducting an advanced FDP on "SUSTAINABILITY THROUGH GREEN MOBILITY- HYDROGEN FROM RENEWABLES AS A VIABLE SOURCE OF ENERGY" from 09th – 23rd September, 2024. 52 participants from around 18 different Institutions from all over India have applied for FDP and 51 participants are approved. Among the approved participants, 44 participants turned out attending the sessions from the beginning day of the FDP.

Day 1 - (09.09.2024) Inauguration

Inaugural function of the FDP was held on September 09, 2024 at the Seminar hall of Dr.A.C.Muthiah Central library of Sri Venkateswara college of Engineering. M**r. N. Mahadevan, Chief-TAFE Advanced Technical Centre** inaugurated the FDP and delivered inaugural address. **Dr. M. Sivanandham, Secretary, SVCE** has delivered the presidential address. **Dr.S.Ganesh Vaidyanathan, Principal, SVCE** presided over the function. **Dr. S.Saravanan, Coordinator of the FDP** has delivered the welcome address. **Dr.S. Ramesh Babu, Professoer and Head of Mechanical Engineering** has delivered an introductory note about the FDP

TECHNICAL SESSIONS

Day 1 (09.09.2024)- Technical Session 1

Sustainability through Green fuels - The Role of Hydrogen Energy (H_2) in Driving Sustainable Solutions

In the technical session on "Sustainability through Green Fuels - The Role of Hydrogen Energy (H_2) in Driving Sustainable Solutions," **Mr. N. Mahadevan, Chief- TAFE Advanced Technical Centre** explored the pivotal role of renewable energy sources in achieving environmental goals. He emphasized that green fuels, such as biofuels, hydrogen, and synthetic fuels, offer significant advantages in reducing greenhouse gas emissions and enhancing energy security. Mr. N. Mahadevan discussed the technological advancements in production processes, including the use of waste materials and sustainable feedstock's. He also addressed the challenges of scalability, infrastructure, market acceptance and sustainable energy future powered by green fuels.

Day 1 (09.09.2024)- Technical Session 2

Combustion Characteristics of Hydrogen

In the technical session on "Combustion Characteristics of Hydrogen," by **Dr. C. Prathap, Professor/Aerospace Engineering, IIST – Trivandrum** delivered the unique properties of hydrogen as a fuel source. He explained the hydrogen combustion, performance and emission characteristics. High efficiency and low emissions make it a potential source for power generation in transportation sector. Dr. C. Prathap discussed the safety and adaptability of hydrogen storage tanks. He also addressed challenges such as flame stability.

Day 2 (10.09.2024)- Technical Session 3

Potential of Hydrogen Production from Biowastes – Sustainable Mobility and its Environmental benefits

In the technical session on "Potential of Hydrogen Production from Bio wastes – Sustainable Mobility and its Environmental benefits," **Dr. S. V. Srinivasan, Sr. Principal Scientist, CSIR-CLRI, Chennai** presented the innovative approaches to sustainable transportation. He emphasized the critical role of electric and hydrogen-powered vehicles in reducing greenhouse gas emissions and improving urban air quality. Dr. S. V. Srinivasan highlighted the integration of renewable energy sources, such as solar and wind, to power these vehicles, thereby minimizing the carbon footprint. He also discussed the potential of smart mobility solutions, including public transit and car-sharing, to decrease congestion and promote efficient energy use. Overall, Dr. S. V. Srinivasan underscored the need for collaborative efforts between governments, industries, and communities to achieve a greener future.

Day 2 (10.09.2024)- Technical Session 4

Fuel cell Electric Vehicle - Technology & Challenges

In the technical session on "Fuel cell Electric Vehicle - Technology & Challenges", **Dr. G. Nagarajan, Professor Emeritus, CEG, Anna University**, explored the application of Fuel Cell Electric Vehicle and solar energy for hydrogen production. A crucial step in achieving sustainable energy solutions plays a vital role in future transportation. Fuel cells operated by solar power seams efficient method. Solar photovoltaic systems can power electrolysis, splitting water into hydrogen and oxygen without greenhouse gas emissions. Additionally, photo electrochemical water splitting directly harnesses sunlight to drive this process, potentially increasing efficiency. Concentrated solar power can also be used in thermochemical cycles to generate hydrogen through high-temperature reactions. By integrating these technologies, we can develop a decentralized energy infrastructure, enabling hydrogen to serve various applications, from fuel cells to energy storage, thereby advancing our transition to a low-carbon future.

Day 3 (11.09.2024)- Technical Session 5

On-board Hydrogen Production and Characteristics of a Passenger Car Fuelled with Blends of H_2 and CNG

In the technical session on "On-board Hydrogen Production and Characteristics of a Passenger Car Fuelled with Blends of H_2 and CNG," delivered by **Dr. S. Saravanan, Professor, Sri Venkateswara College of Engineering**, discussed about the innovative approaches to generating hydrogen directly within vehicles. He explained both the advantages and disadvantages of on-board production, such as eliminating the need for extensive refuelling infrastructure and enhancing vehicle range and efficiency. Dr. S. Saravanan highlighted various methods, including reforming hydrocarbons and water electrolysis, emphasizing their feasibility and challenges.

Day 3 (11.09.2024)-Technical Session 6

Combustion aspects of Hydrogen for stationary applications

In the technical session on "Combustion Aspects of Hydrogen for Stationary Applications," by **Mr. I. Meenakshi Sundaram, CTO, M/s Amalgamation's Components Division** delivered the unique properties of hydrogen as a fuel source. He explained how hydrogen's high combustion efficiency and low emissions make it an attractive option for power generation. Mr. I. Meenakshi Sundaram discussed various combustion technologies, including burners and turbines, highlighting their adaptability to hydrogen use. He also addressed challenges such as flame stability and NOx emissions, proposing strategies for effective management.

Day 4 (12.09.2024)-Technical Session 7

NVH challenges in Automotive Vehicles

In the technical session on "NVH Challenges in Automotive Vehicles," **Mr. B. Prakash, Principal Member (R&D), NVH, TAFE Ltd.**, addressed the critical issues of Noise, Vibration, and Harshness (NVH) that impact vehicle performance and passenger comfort. He outlined the various sources of NVH, including engine operation, road conditions, and structural design. Mr. B. Prakash emphasized the importance of advanced materials and engineering techniques to mitigate these challenges, such as sound insulation and vibration-damping components. He also discussed the role of simulation tools in predicting NVH behaviour during the design phase.

Day 4 (12.09.2024)-Technical Session 8

Hydrogen Production Using Biogas

In the technical session on " Hydrogen Production Using Biogas" delivered by D**r. C. Ramesh Kumar, Professor/MEC, VIT Vellore** examined the various methods for generating hydrogen, including steam methane reforming, electrolysis, and biomass gasification. He highlighted that while steam methane reforming is currently the most prevalent method, it relies on fossil fuels and contributes to greenhouse gas emissions. Dr. C. Ramesh Kumar emphasized the promise of electrolysis, especially when powered by renewable energy, but noted its high costs and energy requirements as significant barriers. Additionally, he discussed the challenges of scaling up biomass gasification and the need for technological advancements and policy support to facilitate a sustainable hydrogen economy.

Day 5 (13.09.2024)-Technical Session 9

Hydrogen Vehicles Opportunities and Challenges

Dr. R. Senthil Kumar, Dy. Director, NPTI, Bengaluru addressed the opportunities, challenges, safety concerns and on-board hydrogen production as a transformative solution for sustainable transportation. Range Extension Using Hydrogen has the potential of hydrogen fuel cells to enhance the driving range of electric vehicles. He explained that hydrogen fuel cells generate electricity through a chemical reaction, allowing for faster refuelling and longer distances compared to traditional battery systems. Dr. R. Senthil Kumar highlighted successful case studies of hydrogen-powered vehicles achieving ranges exceeding 300 miles on a single tank. He also addressed the importance of developing a robust hydrogen infrastructure, including refuelling stations, to support this technology.

Day 5 (13.09.2024)-Technical Session 10

Hydrogen Powertrain Advancing Sustainable Mobility

In the technical session on “Hydrogen Powertrain Advancing Sustainable Mobility”, **Mr. Somashekar Nayak GM, Reliance Industries Ltd.**, explored the Hydrogen Powertrain Advancing Sustainable Mobility.

Hydrogen, is a clean alternative to fossil fuels. Its capacity for energy storage allows for the integration of renewable sources like solar and wind, balancing supply and demand. Additionally, hydrogen can support grid stability and provide backup power during outages. As we continue to invest in infrastructure and technology, hydrogen stands to play a critical role in achieving a sustainable and resilient energy future. There are various techniques for storing hydrogen, including compressed gas, liquid hydrogen, and solid-state storage. Each method has its advantages and significant challenges. Compressed gas storage requires high-pressure tanks that can be costly and pose safety risks, while liquid hydrogen storage demands extreme temperatures and complex insulation.

Day 5 (13.09.2024)-Technical Session 11

Fuel cell Electric Vehicle

In the technical session on "Fuel cell Electric Vehicle", **Mr. Somashekar Nayak GM, Reliance Industries Ltd**., explored the application of Fuel Cell Electric Vehicle and solar energy for hydrogen production. A crucial step in achieving sustainable energy solutions plays a vital role in future transportation. Fuel cells operated by solar power seams efficient method. Solar photovoltaic systems can power electrolysis, splitting water into hydrogen and oxygen without greenhouse gas emissions. Additionally, photo electrochemical water splitting directly harnesses sunlight to drive this process, potentially increasing efficiency. Concentrated solar power can also be used in thermochemical cycles to generate hydrogen through high-temperature reactions. By integrating these technologies, we can develop a decentralized energy infrastructure, enabling hydrogen to serve various applications, from fuel cells to energy storage, thereby advancing our transition to a low-carbon future.

Day 6 (14.09.2024)-Technical Session 12

Technology Options for Cleaner and Sustainable Energy

In the technical session on "Technology Options for Cleaner and Sustainable Energy " delivered by

Dr.Raja Munusamy.Sr. Vice President. Reliance Industries Limited, Bengaluru gives the insight to participants about the existing tehnologiese for achieving clean and sustainable energy. He mentioned about challenges in Hydrogen generation, storage and transportation. He explained about EU regulatory approval process. His lecture aslo compared FCEV with EV.he elaborated about various sources of hydrogen.

Day 6 (14.09.2024)-Technical Session 13

Hydrogen Based Mobility-Advancement and Strategies

In the technical session on "Hydrogen Based Mobility-Advancement and Strategies" delivered by

Mr. S. Subramanian, CO - Founder, H2 Next Ltd., gives the insight to participants about the Hydrogen Based Mobility. The lecture highlighted the growing significance of hydrogen as a sustainable energy source for the transportation sector. It focused on recent advancements in hydrogen fuel cell technology, emphasizing its potential to reduce carbon emissions in heavy-duty vehicles, shipping, and aviation. Key

strategies discussed included the need for robust infrastructure development, scaling up green hydrogen production, and government policies to support industry growth. The lecture also addressed challenges such as high costs and storage issues, proposing collaborative efforts between public and private sectors to overcome these obstacles and achieve widespread hydrogen mobility adoption.

Day 7 (16.09.2024)-Technical Session 14

Hydrogen Energy – Thermal Polygeneration

In the technical session on "Hydrogen Energy – Thermal Polygeneration", **Dr. Srinivas Tangellapalli, Professor and Head/Mech, NIT, Jalandhar** reveals the integration of hydrogen energy in thermal polygeneration systems, which simultaneously produce multiple energy outputs like electricity, heat, and chemicals. The focus was on utilizing hydrogen as a clean fuel to enhance efficiency and reduce emissions in these systems. The lecture highlighted advanced technologies such as hydrogen combustion and fuel cells, discussing their applications in industrial processes and district heating. Key challenges, including hydrogen production, storage, and cost, were addressed.

Day 7 (16.09.2024)-Technical Session 15

Hydrogen Vehicle Development for Achieving net zero CO_2 emissions

In the technical session on "Opportunities and Challenges for Hydrogen Vehicles Development for Achieving net zero CO_2 emissions", **Mr. G. Senthil Kumar, DGM –Engine Development, Ashok Leyland - Technical Centre** reveals the dual aspects shaping the future of hydrogen-powered transportation. He highlighted the environmental benefits, including zero emissions and reduced reliance on fossil fuels, presenting hydrogen vehicles as a key solution for sustainable mobility. However, Mr. G. Senthil Kumar also addressed significant challenges of Hydrogen Vehicle Development in R&D's, in such as the high costs of hydrogen production, safety, limited infrastructure, and public perception issues. He emphasized the need for investment in technology and infrastructure development, as well as supportive policies, to unlock the full potential of hydrogen vehicles and facilitate their adoption in the automotive market.

Day 7 (16.09.2024)-Technical Session 16

Hydrogen as a Fuel for Transportation Sector

In the technical session on "Hydrogen-Powered Vehicles for a Sustainable Environment - fuel for Transportation Sector," **Dr. Dipankar Kakati, Technical Leader, PWT-2, Global Automotive Research Centre (GARC)** explored the vital role of hydrogen fuel cell technology in achieving eco-friendly transportation. He detailed how these vehicles produce zero emissions, with water vapor as the only by-product, significantly reducing urban air pollution. Dr. Dipankar Kakati highlighted advancements in hydrogen production methods, such as electrolysis using renewable energy, which enhance sustainability. He

also discussed the importance of developing infrastructure, including refuelling stations, to support widespread adoption.

Day 8 (18.09.2024)-Industry Based Problem Solving 1

Industrial Visit to Global Automotive Research Centre (GARC)

The participants team along with coordinator and coordinator visited the **Global Automotive Research Centre (GARC)** in Oragadam, Tamil Nadu, provided an in-depth knowledge in the automotive research and development. The facility in the GARC showcased advanced testing laboratories dedicated to brake testing track, acceleration testing track, NVH test track, powertrain laboratory, vehicle dynamics laboratory, safety assessments, combustion and emissions analysis laboratory. GARC was engaged with knowledgeable staff who shared insights into ongoing projects, particularly in IC engines and sustainable materials. The visit emphasized GARC's pivotal role in supporting both local and international automotive manufacturers, fostering innovation and compliance with global standards. Overall, the visit reinforced the importance of GARC in driving advancements in the Indian automotive industry and promoting sustainable mobility solutions.

Day 9 (19.09.2024)-Industry Based Problem Solving 2

Industrial Visit to Forge powered SIPCOT Industrial Innovation Centre's

The visit to the Forge-powered SIPCOT Industrial Innovation Centre, explored a dynamic hub for fostering entrepreneurship and technological advancement. The center is designed to support start-ups and established businesses by providing access to available facilities, mentorship, and resources explained by Mr. Ganesh, Forge Powered SIPCOT Industrial Innovation Centres. We toured three labs dedicated to product development, prototyping, and research, witnessing innovative projects being undertaken. Engaging with entrepreneurs and experts, we learned about the collaborative initiatives aimed at enhancing manufacturing capabilities and promoting sustainable practices. Overall, the visit highlighted the centre's vital role in driving industrial innovation and economic growth in the region for future advancements.

Day 10 (20.09.2024)-Industry Based Problem Solving 3

Industrial Visit to Ashok Leyland Technical Centre, Chennai

The visit to the Ashok Leyland Technical Centre in Chennai, gained valuable insights into the company's commitment to innovation in the vehicle sector. The facility features advanced research and development

labs focused on vehicle design, testing, and validation. We had the opportunity to interact with engineers Mr. Prakash who shared their experiences on projects related to hydrogen vehicles and hydrogen fuel cells. The tour highlighted Ashok Leyland's efforts in enhancing hydrogen fuel efficiency, safety precautions and reducing emissions. Overall, our visit underscored the importance of continuous innovation in IC engines maintaining competitiveness and supporting the future of transportation in India.

Day 11 (21.09.2024)-Industry Based Problem Solving 4

Industrial Visit to CSIR - Central Leather Research Institute, Adayar

The visit to the CSIR - Central Leather Research Institute (CLRI), the team explored the forefront of leather research and technology in India. The institute showcased its advanced facilities dedicated to leather processing, sustainable practices, and innovative product development. We engaged with researchers who detailed ongoing projects focused on eco-friendly tanning methods, waste management strategies and biogas plant. The tour also highlighted CLRI's contributions to improving the quality and competitiveness of Indian leather in the global market. Overall, our visit emphasized the institute's pivotal role in promoting sustainable practices within the leather industry and its commitment to advancing research for a more environmentally responsible future.

Day 12 - (23.09.2024) Valedictory

The FDP program was concluded through a Valedictory function. The chief guest **Dr. S. Ganesh Vaidyanathan, Principal, SVCE** delivered the valedictory address and Dr.K.R.Santha Vice-Principal presided over the function in presence of Dr, S. Ramesh Babu, HOD/MEC. The program was concluded after receiving the feedback from the participants by the Principal, SVCE. **Dr. S.Saravanan, Coordinator of the FDP** has delivered the Vote of thanks.

Major Learnings

1. Understanding Green Mobility:
   Insights into the concept of green mobility, its importance in sustainable development, and the role of clean transportation technologies.
2. Hydrogen Production Techniques:
   Detailed exploration of renewable hydrogen production methods, including electrolysis and steam methane reforming, emphasizing their environmental impacts.
3. Hydrogen as an Energy Carrier:
   Analyzing hydrogen's potential as a clean energy carrier, its storage, transport, and conversion to electricity in fuel cells.
4. Technological Innovations:
   Latest advancements in hydrogen technologies, including fuel cell development, hydrogen infrastructure, and innovations in storage solutions.
5. Case Studies and Applications:
   Examination of successful case studies where hydrogen has been integrated into transportation systems, showcasing practical applications and lessons learned.
6. Environmental Impact Assessments:
   Discussion on lifecycle assessments of hydrogen production and use, evaluating the ecological footprint compared to fossil fuels.
7. Future Trends and Challenges:
   Identifying potential challenges in adopting hydrogen as a mainstream energy source, including technological, economic, and societal barriers.

These learnings will equip participants with the knowledge and skills to contribute to sustainable energy solutions in their professional fields.

Key points from the Reflection Journal

I. Hydrogen Production

1. **Methods of Production**:
   - Overview of renewable hydrogen production
   - Importance of utilizing renewable energy sources like solar and hydroelectric power for electrolysis.
2. **Efficiency and Scalability**:
   - Discussion of the efficiency rates of different production methods.
   - Challenges and potential solutions for scaling up production to meet future energy demands.
3. **Environmental Impact**:
   - Analysis of the lifecycle emissions associated with renewable hydrogen production.
   - Comparison with traditional hydrogen production methods (e.g., steam methane reforming) in terms of carbon footprint.
4. **Economic Viability**:
   - Examination of the cost trends for renewable hydrogen production.
   - Impact of government policies and subsidies on the economic feasibility of renewable hydrogen technologies.

II. Hydrogen Combustion Characteristics

1. **Combustion Properties**:
   - Key characteristics of hydrogen combustion, including flame temperature, speed, and energy output.
   - Differences in combustion behaviour compared to conventional fuels (e.g., lower emissions and higher efficiency).
2. **Safety Considerations**:
   - Addressing the safety aspects of hydrogen combustion, including flammability, explosiveness, and leak detection.
   - Importance of proper storage and handling protocols to mitigate risks.
3. **Future Research Directions**:
   - Identification of gaps in current research regarding hydrogen combustion and potential areas for further exploration.
   - Need for continued innovation in combustion technologies to enhance performance and efficiency.

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LIST OF PARTICIPANTS SUCCESSFULLY COMPLETED THE AFDP

Sl. No.	Participant Name	Mobile number	Institute Name	Designation	District
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2.	Dr. Balaji G	9443784657	Rajalakshmi Institute of Technology	Associate Professor	Kancheepuram
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4.	Dr. Boopathi D	9715621261	SRM Institute of Science & Technology	Assistant Professor	Chengalpattu
5.	Dr. Chandrasekaran P	9840397959	SRM Institute of Science & Technology	Professor	Chengalpattu
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8.	Dr. Ilaiyavel S	9042905117	Sri Venkateswara College of Engineering	Associate Professor	Kancheepuram
9.	Dr. Kumar K M	8667269544	St. Joseph's College of Engineering	Associate Professor	Chengalpattu
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12.	Dr. Nachiappan Nachiappan	9994840298	Sri Venkateswara College of Engineering	Associate Professor	Kancheepuram
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20.	Dr. Vandaarkuzhali	9894723369	Mailam Engineering College	Professor	Villupuram
21.	Mr. Abdul Razik	9043844737	H2 Next Pvt Ltd	Industry Bureaucrats	Karaikudi
22.	Mr. Artralarasan E	9025295607	Sri Ramanujar Engg College	Assistant Professor	Chengalpattu
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MEDIA CONTENT

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ஸ்ரீவெங்கடேஸ்வரா பொறியியல் கல்லூரியில் பேராசிரியர்களுக்கான 12 நாள் பயிலரங்கம் தொடக்கம

ஸ்ரீபெரும்புதூர்,செப்.13– காஞ்சிபுரம் மாவட்டம், ஸ்ரீபெரும்புதூர் அடுத்த பென்னலூர் பகுதியில் ஸ்ரீவெங்கடேஸ்வரா பொறியியல் கல்லூரி இயங்கி வருகிறது. இக்கல்லூரியில் இயந்திரவியல் துறை சார்பாக இந்திய தொழில்நுட்பக் கழகத்தின் பயிற்சி மற்றும் கற்றல் கல்விக்கூடத்தின் நிதியுதவியுடன் பசுமை இயக்கத்தின் மூலம் நிலைத்தன்மை மற்றும் புதுப்பிக்க சாத்தியம் கொண்ட ஆற்றலில் இருந்து ஹைட்ரஜன் என்ற தலைப்பில் பேராசிரியர்களுக்கான 12 நாள் மேம்பாட்டு பயிலரங்கம் கல்லூரி வளாகத்தில் உள்ள கூட்டரங்கில் திங்கள்கிழமை தொடங்கியது. வெங்கடேஸ்வரா பொறியியல் கல்லூரியின் செயலாளர் முனைவர் சிவானந்தம் தலைமையில் நடைபெற்ற பயிலரங்கத்திற்கு கல்லூரி முதல்வர் முனைவர் கணேஷ் வைத்தியநாதன் முன்னிலை வகித்தார். இயந்திரவியல் துறை தலைவர் ரமேஷ்பாபு விளக்க உரையாற்றினார். இதில் டபே தொழில்நுட்ப மையத்தின் தலைவர் மகாதேவன் சிறப்பு அழைப்பாளராக பங்கேற்று பயிலரங்கத்தை தொடங்கி வைத்து பேசுகையில், இன்றைய சுற்றுசூழல் நிலைத்தன்மை அற்றதாக உள்ளது. ஹைட்ரஜன் ஆராய்ச்சி நீண்ட நாட்களாக நடைபெற்று வருகிறது. தற்போது ஹைட்ரஜன் ஆராய்ச்சிக்காக நிறைய முதலீடுகள் செய்யப்பட்டு வருகிறது. ஹைட்ரஜன் பயன்பாட்டை அனைவரும் ஆவலோடு எதிர்நோக்கியுள்ளனர். ஹைட்ரஜன் உபயோகத்தின் போது பல்வேறு பாதுகாப்பு ஏற்பாடுகளை பின்பற்ற வேண்டியுள்ளது என்றார். இந்த பயிலரங்கத்தில் தேசிய பயிற்சி நிறுவனத்தின் உதவி இயக்குனர் செந்தில்குமார், இந்திய விண்வெளி அறிவியல் மற்றும் ஆராய்ச்சி நிறுவனத்தின் பேராசிரியர் பிரதாப், மத்திய தோல் ஆராய்ச்சி நிறுவனத்தின் முதன்மை விஞ்ஞானி சீனிவாசன், ரிலையன்ஸ் நிறுவனத்தின் ராஜாமுனுசாமி, அசோக் லேலண்ட் நிறுவனத்தின் துணைப் பொது மேலாளர் செந்தில்குமார், பஞ்சாப் தேசிய தொழில்நுட்பக் கழக பேராசிரியர் சீனிவாஸ், அண்ணா பல்கலைக்கழக பேராசிரியர் நாகராஜன் உள்ளிட்ட பல்வேறு ஆராய்ச்சி நிறுவனங்களின் வல்லுநர் குழு மூலம் தொழில்நுட்ப அமர்வுகள் பேராசிரியர்களுக்கு நடத்தப்பட உள்ளது. இதில் பயிலரங்கஒருங்கிணைப்பாளர் முனைவர் சரவணன் உள்ளிட்ட நாட்டின் பல்வேறு பகுதிகளை சேர்ந்த பேராசிரியர்கள், தொழில்நுட்ப வல்லுநர்கள் மற்றும் ஆராய்ச்சிமாணவர்கள் சுமார் 50க்கும் மேற்பட்டோர் கலந்துகொ...

நிறைந்தது மனம்" நிகழ்ச்சியின் வாயிலாக
துகாப்புத் திட்டத்தின்கீழ் வைப்பு பத்திரம் பெற்று ப...

பேராசிரியர்களுக்கான பயிலரங்கம் தொடக்கம்

பயிலரங்க தொடக்க விழாவில் பங்கேற்றோர்.

ஸ்ரீபெரும்புதூர், செப். 9: பென்னலூர் ஸ்ரீவெங்கடேஸ்வரா பொறியியல் கல்லூரியில் பசுமை இயக்கத்தின் மூலம் நிலைத்தன்மை மற்றும் புதுப்பிக்க சாத்தியம் கொண்ட ஆற்றலில் இருந்து ஹைட்ரஜன் என்ற தலைப்பில் பேராசிரியர்களுக்கான 12 நாள் மேம்பாட்டு பயிலரங்கம் தொடங்கியது.

கல்லூரி இயந்திரவியல் துறை சார்பாக இந்திய தொழில்நுட்பக் கழகத்தின் பயிற்சி மற்றும் கற்றல் கல்விக்கூடத்தின் நிதியுதவியுடன் பசுமை இயக்கத்தின் மூலம் நிலைத்தன்மை மற்றும் புதுப்பிக்க சாத்தியம் கொண்ட ஆற்றலில் இருந்து ஹைட்ரஜன் என்ற தலைப்பில் பேராசிரியர்களுக்கான 12 நாள் மேம்பாட்டு பயிலரங்கம் தொடங்கியது.

வெங்கடேஸ்வரா பொறியியல் கல்லூரியின் செயலாளர் சிவானந்தம் தலைமையில் நடைபெற்ற பயிலரங்கத்திற்கு முதல்வர் கணேஷ் வைத்தியநாதன் முன்னிலை வகித்தார். இயந்திரவியல் துறை தலைவர் ரமேஷ் பாபு விளக்க உரையாற்றினார். இதில் டபே தொழில்நுட்ப மையத்தின் தலைவர் மகாதேவன் சிறப்பு அழைப்பாளராக பங்கேற்று பயிலரங்கத்தை தொடங்கி வைத்தார்.

பயிலரங்கத்தில் தேசிய பயிற்சி நிறுவனத்தின் உதவி இயக்குனர் செந்தில் குமார், இந்திய விண்வெளி அறிவியல் மற்றும் ஆராய்ச்சி நிறுவனத்தின் பேராசிரியர் பிரதாப், மத்திய தோல் ஆராய்ச்சி நிறுவனத்தின் முதன்மைவிஞ்ஞானி சீனிவாசன், ரிலையன்ஸ் நிறுவனத்தின் ராஜாமுனுசாமி, அசோக் லேலண்ட் நிறுவனத்தின் துணைப் பொது மேலாளர் செந்தில் குமார், பஞ்சாப் தேசிய தொழில்நுட்பக் கழக பேராசிரியர் சீனிவாஸ், அண்ணா பல்கலைக்கழக பேராசிரியர் நாகராஜன் உள்ளிட்ட பல்வேறு ஆராய்ச்சி நிறுவனங்களின் வல்லுநர் குழு மூலம் தொழில்நுட்ப அமர்வுகள் பேராசிரியர்களுக்கு நடத்தப்பட உள்ளது.

இதில்பயிலரங்கஒருங்கிணைப்பாளர் முனைவர் சரவணன் உள்ளிட்ட நாட்டின் பல்வேறு பகுதிகளை சேர்ந்த பேராசிரியர்கள், தொழில்நுட்ப வல்லுநர்கள் மற்றும் ஆராய்ச்சி மாணவர்கள் 50-க்கும் மேற்பட்டோர் கலந்துகொண்டனர்.

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