

DELHI TECHNOLOGICAL UNIVERSITY

formerly Delhi College of Engineering

(under Delhi Act 6 of 2009, Govt. of NCT of Delhi)

Accredited with 'A' Grade (CGPA 3.22 out of 4.0) by NAAC (1st Cycle)

ISO 9001:2015 Certified



भारत की
आज़ादी का
अमृत महोत्सव

One Week (Online) Faculty Development Programme (FDP)

On

Clean Energy Manufacturing : Transformation for Sustainable Development

(04th- 08th Oct, 2021)

Under the aegis of

AICTE Training and Learning (ATAL) Academy



Sponsored by

AICTE, New Delhi



Organized by

Department of Mechanical, Production & Industrial and Automobile Engineering

Delhi Technological University

(Erstwhile Delhi College of Engineering)

Shahbad Daulatpur, Main Bawana Road, Delhi - 110042

Website: www.dtu.ac.in

ABOUT DELHI TECHNOLOGICAL UNIVERSITY

Delhi Technological University, also referred to as *DelTech* / *DTU*, was established in 1941 as Delhi Polytechnic. Later called Delhi College of Engineering, the college was under the government of the National Capital Territory of Delhi since 1963 and affiliated to the University of Delhi since 1952.

In July 2009 DCE was upgraded to a state university and renamed Delhi Technological University. Presently Delhi Technological University operates from Two different Campuses in Delhi, namely, DTU Main Campus and DTU East Campus

DTU offers technical courses towards B. Tech, M. Tech, MBA, and Ph.D. and contains 14 academic departments with a strong emphasis on scientific and technological education and research.

The essence has always been the same - to quench the thirst of knowledge and work towards the better future of the country. The whole and sole motive of DTU has been to leave no stone unturned to spread knowledge far and wide and to provide skill-based engineers with outstanding aptitude.

ABOUT THE ORGANIZING DEPARTMENT

The Department of Mechanical, Production & Industrial and Automobile Engineering has seen Considerable Growth Since its inception in 1941 The department offers both Under Graduate as well as Post Graduate courses along with PhD Programs in all major fields of Mechanical Engineering.

The department of mechanical engineering is the biggest department of the University. It offers three degrees and four PG program and more than 100 research scholars have been registered in Ph.D. program. All the laboratories of the department are equipped with latest state of art equipment's like, Precision Manufacturing Lab, Clean Energy Centre, Bio Diesel Research Lab, Design Centre etc.

ORGANIZING COMMITTEE

Chief Patron



Prof. Yogesh Singh
Hon'ble Vice-Chancellor, DTU

Patron

Prof. S.K. Garg
Head of the Department

Program Coordinator (ATAL)

Dr. Pushendra Singh

Program Co-coordinator

Dr. Qasim Murtaza

Organizing Team Members

Dr. Ravi Butola
Ms. Yamika Patel
Mr. Phool Singh
Mr. Gaurav Kumar
Ms. Kiran Chholak

Mr. Deepak Kumar
Mr. Neeraj Kant
Mr. Abdul Khaliq Ansari
Mr. Sudeep Jain
Ms. Manzeet Rani



THE GENESIS OF THIS FDP

Six priority areas have been identified, that requires action from both policy makers and industrial stake holders for successful transformation of manufacturing sector towards sustainable development goals and also to effectively realise the ambitious Indian dream of *Atma Nirbhar Bharat Abhiyan*. These thrust areas are:

Energy intensive manufacturing sectors: With almost 70% of the total industrial energy demand and long lifetimes for these types of plants, the energy-intensive sectors need to consider renewable energy options not only as an integral part of their new build capacity, but also as part of their existing capacity. **Small and medium-sized enterprises (SMEs):** Accounting for more than 85% of all manufacturing businesses, SMEs play a crucial role in increasing the deployment rate of renewable energy technologies, providing local manufacturing opportunities and stimulating cost reductions through learning by doing.

Biomass: Among the renewable technology options, biomass has the largest substitution potential in the manufacturing industry, but immediate and internationally coordinated action is required to alleviate the serious supply constraint of sustainable sourced and low-cost biomass resources, and to deploy the most resource efficient biomass use applications. **Solar thermal systems:** Solar thermal heat systems have a large technical and economically viable potential in small scale plants and less energy intensive industries like the textile and food sectors, but the vicious circle of high initial capital costs and low deployment rates needs to be broken.

Large structural and regional changes in production activity could increase the potential of clean energy even further. Energy pricing and climate policies can ensure a level playing field and biomass resource constraints may be elevated by trade, but equally important will be specific policies to support the different industries in deploying renewable energy.

Finally, a **new Motive force** has come to the fore wherein, Customers are now a days demanding *products that are produced & even Sourced in a clean and sustainable way,*

and renewable energy technologies like, waste heat recovery systems and distributed energy generation, could actually provide the sustainable solution and act as a *new driver for the entire manufacturing sector in India and the World.*

CHALLENGES & OPPORTUNITIES AHEAD

Manufacturing affects the way contemporary products are designed, fabricated, used, and disposed; hence, ***manufacturing technologies have energy impacts extending beyond the industrial sector.***

Transformative manufacturing processes, materials, and technologies can provide advantages over the practices widely in use, and in many cases enable the fabrication of innovative new clean energy products. Life-cycle analysis is essential to assess the total energy impact of a manufactured product. State-of-the-art technologies available today could provide energy savings, but many have not yet penetrated the market due to barriers such as high capital intensity and lack of knowledge. ***Opportunities exist to overcome these barriers and increase technology uptake.***

Industrial-scale energy systems integration technologies, such as waste heat recovery and distributed energy generation, can reduce the manufacturing sector's reliance on the conventional electric grid and increase industrial efficiency while promoting clean energy applications.

BROAD AREAS OF DISCUSSION FOR THIS FDP:

Major Theme : Green Technology & Sustainability Engineering

Concept of Sustainable Development.	Hybrid Technologies
Precision Manufacturing	Green Manufacturing
Digital Revolution in manufacturing	AI Manufacturing & Automatization
Intensive Energy Integrated platforms	Circular Economy
Exergy of Manufacturing	Nano Technology
Smart & Sustainable Materials Processing	Life-cycle analysis
Approaches of Additive Manufacturing	Zero Carbon Manufacturing

TARGET PARTICIPANTS FOR THIS FDP:

This Five-day online faculty development programme is exclusively designed for young faculty or budding research scholars who wish to pursue research in the innovative field of *Clean Energy Manufacturing : Transformation for Sustainable Development*. The participants will be able to understand the challenges posed by the conventional manufacturing processes & technologies to the environment and to the human being. The course will provide an overall understanding about Transformative Manufacturing for sustainable development and will cater the ignited minds of our academicians, Industry Professionals, Corporates Research Labs and other Research Scholars.

REGISTRATION DETAILS

The course will be conducted online, as per the ATAL FDP Guidelines, and there is NO REGISTRATION FEE required for participation. Number of Participant registrations is limited to maximum of 200. Confirmation of participation will be strictly on the FIRST COME FIRST SERVE BASIS.

To ensure participation the online Registration should be made in advance on the ATAL Academy website:

<https://atalacademy.aicte-india.org/login>

DETAILS FOR CORRESPONDENCE

Dr. Pushpendra Singh Coordinator pushpendra@dtu.ac.in 9958956906	Dr. Qasim Murtaza Co-Coordinator qasimmurtaza@dce.ac.in 9654364948
Email: dtuatalfdp@gmail.com	

Contact for Technical Assistance:
(During FDP hours 9:00 AM till 05:00 PM)
9045953585



ONE WEEK (ONLINE) FDP from 04 - 08 oct 2021, on *CLEAN ENERGY MANUFACTURING: TRANSFORMATION FOR SUSTAINABLE DEVELOPMENT*

ORGANISED BY:

DEPARTMENT OF MECHANICAL ENGINEERING, DELHI TECHNOLOGICAL UNIVERSITY, DELHI



Prof. Yogesh Singh,
Hon'ble Vice Chancellor, DTU
Chief Patron



Prof. S. K. Garg., Head of the Department,
Department of Mechanical Engineering, DTU
Patron



Dr. Pushpendra Singh, Coordinator,
Department of Mechanical Engineering,
DTU



Dr. Qasim Murtaza, Co-Coordinator,
Department of Mechanical Engineering,
DTU

INVITED SPEAKERS



Dr. M. V. Reddy
Institute of Research
Hydro-Quebec, Canada



Prof. H. P. Garg
IIT Delhi (Retd.)



Prof. Pradeep Kumar
IIT Roorkee



Prof. Apurbba Kumar
IIT Roorkee



Prof. Sameer Sapra
IIT Delhi



Prof. Ashok K Ganguly
IIT Delhi



Prof. Vikas Rastogi
DTU



Prof. Faisal Hasan
AMU



Prof. R. S. Walia
PEC



Prof. Abid Ali Khan
AMU



Dr. Saurabh Agrawal
DTU



Dr. Anil Kumar
DTU



Dr. Mohit Tyagi
NIT Jalandhar

Program Registration Link
<https://atalacademy.aicte-india.org/login>

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