

**A Five Day
Online
AICTE Training and Learning (ATAL)
Academic FDP Programme**

**On
Fuel Cell Technology
[FCT-2021]**

[21-25 June 2021]

PATRONS

Prof. Animesh Biswas
Director, NIT Rourkela
Prof. Anil D. Sahasrabudhe
Chairman, AICTE

CHAIRMAN

Prof. S. K. Sahoo

COURSE COORDINATOR

Prof. S. Murugan

COURSE CO-COORDINATORS

Dr. B. Kiran Naik
Dr. Kishore Patel



**Department of Mechanical Engineering
National Institute of Technology
Rourkela
Odisha
Pin code: 769008**

**In Collaboration with
AICTE Training and Learning(ATAL)**

NIT ROURKELA

National Institute of Technology, Rourkela (founded as Regional Engineering College, Rourkela) has been presently offering B.Tech, M.Tech, MBA and MCA Courses in various disciplines with an annual intake of about 2000 students. Institute also offers excellent facilities for advanced research in the emerging areas of Science and Technology leading to Ph.D. degree. The institute has well qualified and dedicated faculty along with finest supporting staff, laboratories and other infrastructure. The syllabus and the curricula are constantly being updated to meet the growing demands and need of the country in different areas of technology. The infrastructure is geared to enable the Institute to turn out technical personnel of a high quality.

ABOUT THE DEPARTMENT

Department of Mechanical Engineering is one of the oldest departments of NIT Rourkela The department presently offers four streams of post graduate programs: (i) Machine Design and Analysis (ii) Production Engineering (iii) Thermal Engineering and (iv) Industrial Cryogenics. The department has good number of laboratories with latest facilities. There are various research and development projects in Mechanical Engineering. It also incorporates labs to carry out design, simulation and development on latest computer systems. The department lays strong emphasis on helping students acquire practical knowledge. It has played a key role in motivating and assisting the students to freely explore the departmental resources and carry out academic activities.

ABOUT THE COURSE

Due to growing concerns on the rapid depletion of conventional fossil fuel resources and global environmental pollution, utilization of alternative fuels and clean energy technologies have been paid more attention by the world during the last four decades. Fuel cell technology is recognized as the most promising technology in the context of low pollutant power generation. Fuel cell is an energy conversion device used to convert chemical energy of a fuel into electrical energy, water and heat without fuel combustion. Many types of fuel cells are currently in operation for a wide range of applications, classified primarily by the kind of electrolyte they employ. Fuel cells can be used in portable, backup, transportation, and stationary power applications. The global fuel cell industry, which has been growing at a rapid pace for the past few years, is expected to pose an unprecedented growth in near future. The constant government support, regulations like amendment in emission legislations, and increased funding for research and development of fuel cells are encouraging the industry, which is currently dominated by the US, the UK, and Canada. In future, the momentum is expected to shift to the Asian countries due to their vast market potential and rising spending power. In India, awareness on fuel cell, their applications and recent developments need to be still spread in all platforms to a maximum possible extent for gearing up the use of fuel cell technology to great extent in near future. This short term course is aimed to create awareness among faculty members, research scholars, scientists, engineers and students on fundamentals of fuel cells and their recent developments.

COURSE CONTENTS

The course will mainly cover the following topics;

- Fuel cell-Introduction and types
- Fuel cell chemistry
- Fuel for fuel cells
- Materials for fuel cells
- Energy and exergy analyses
- Gas diffusion layer
- Electro-analytical techniques in fuel cell
- Thermal management
- Cogeneration and polygeneration
- A few expert lectures will be delivered by experts from reputed industries, research organizations and academic institutions.

CONDUCT OF COURSE

- Due to COVID-19 Pandemic outbreak, the course will be conducted online through a web platform. The code for attending the course online will be sent to the registered participants two days before the commencement of the course.

TARGET AUDIENCE

- The faculty members of the AICTE approved institutions, Research scholars, PG Scholars, participants from Government, Industry.

REGISTRATION

- There is no registration fee for faculty members, research scholars and PG students for attending the course. However, as the number of external participants is limited to 150, external participants will be registered based on first cum first serve basis.
- A test will be conducted (online) by the coordinator at the end of the program. The certificates shall be issued to those participants who are registered on ATAL portal www.aicte-india.org/atal and attend the program with minimum 80% attendance and score minimum 60% marks in the test.
- Registration Closes on: 18.06.2021
- Acceptance : 19.06.2021
- It is mandatorily required to send your institute ID Card.
- In case of any query, you may contact the following by email:

Dr. S. Murugan
Coordinator

Email ID: murugans@nitrkl.ac.in

Mobile : 09437140949

Dr. B. Kiran Naik
Co-coordinator

Email : naikkb@nitrkl.ac.in

Dr. Kishore Singh Patel
Co-coordinator

Email ID: patelks@nitrkl.ac.in

Department of Mechanical Engineering
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Pin code: 769008

REGISTRATION FORM

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Name: -----

Designation: -----

Institute/Organization: -----

Mobile: -----

Email: -----

DD No: -----Date: -----

Signature of the Applicant with Date:

Signature of Authorized Signatory with Seal