A FIVE-DAY ONLINE SHORT TERM COURSE

On

Fuel Cells - Basics and Progress [FCBP-2020]

[23-27 December 2020]

PATRON
Prof. Animesh Biswas
Director, NIT Rourkela

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

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 post 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 needs 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 short term course will cover the following topics;

- Fuel cell-Introduction and types
- Fuel cell chemistry
- Fuels for fuel cell
- Materials for fuel cells
- Energy and exergy analyses
- Flow field designs
- Fundamentals of 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 one week before the commencement of the course.

TARGET AUDIENCE

- Faculty members, research scholars and students from engineering institutions and professionals from Industry & R&D units can attend the course.
- A maximum of 60 external registered participants will be allowed to attend the course. Participation Certificate will be given only to the attendee who meets 75% and above attendance. Participation certificate will be sent to the registered attendees of the course by India Post.

REGISTRATION AND FEES

- For faculty members, research scholars, students and staff from industry are given below.

Industry & R&D Units	: Rs. 2000
Faculty members	: Rs. 1000
Professionals from Research Scholars and Students	: Rs. 500

MODE OF PAYMENT

- The demand draft can also be made in favour of "**Continuing Education, NIT Rourkela**" payable at Rourkela. The complete registration form accompanied by Demand Draft of the requisite amount may be mailed well in advance as attachment.

Last date for submission of registration form and the demand draft : 16-12-2020

- The Registration form in Brochure can also be downloaded from the Institute Website which is given below;
  https://www.nitrkl.ac.in/Home/Events
- Please send the filled-in and duly signed Registration form with the Demand Draft to the address given below;

Dr. S. Murugan
Professor
Department of Mechanical Engineering
NIT Rourkela, Odisha State, Pin code: 769008
Email ID: murugans@nitrkl.ac.in
Mobile : 09437140949

REGISTRATION FORM

A Five-Day Online Short Term Course
On
Fuel Cells
-
Basics and Progress
[FCBP-2020]

23-27 December 2020
NIT Rourkela
Pin code: 769008

Name: ----------

Designation: ----------

Institute/Organization: ----------

Mobile: ----------

Email: ----------

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

Signature of the Applicant with Date:

Signature of Authorized Signatory with Seal