Activity Report

Name of the Activity: Six days Online AICTE SPONSORED STP on "Vehicle Techniques with OPAL-RT Solutions" from 20th – 25th Dec, 2021.

Name of department/ Section/ cell conducting the activity	Department of Electrical Engineering
In coordination with (if any)	OPAL-RT Solutions
Date of conduct	20th – 25th Dec, 2021
Activity Coordinator	Dr Shakuntla, Mr Nitin Goel Assistant Professor, Department of Electrical Engg. JCBUST, YMCA, Faridabad
Amount Spent	Rs 93, 000/
Funding/ grant from (University/ Industry/ UGC/ AICTE/ DST/ TEQIP/ Outside Society/ agency/others (mention)	Department fund
Target audience:	Undergraduate/Postgraduate students, Research Scholars and Faculty from different Engineering Institutes/Universities, academic institutions, industries
No. of beneficiaries	More than 60
Outside guests/ Details of Experts	Dr. Sreedhar Medichetty, Prof. N.P Padhy, Prof. Hariom Bansal, Dr. Srinivasa Reddy, Mr. Srujan Attaluri, Prof. Sukumar Mishra, Prof. Bhim Singh, Mr. Ravi Teja, Mr. Gagan Puri, Mr. Sai Teja
Brief Description of the event	This STTP covers the entire spectrum of design, technology and analysis involved in the electric vehicle development cycle. It aims to deliver the right tools and skills for EV Systems Modelling and simulation that includes EV technology, operations, battery systems and functions, power train systems and components for better simulation and modelling using OPAL-RT hardware and simulator. The training will be a combination of presentation, demonstration and hands-on sessions under the guidance of resource persons from renowned speakers from IITs, other renowned institutes and industry-expert instructors.

Attach Brochure of the event	

ABOUT THE DEPARTMENT

The Department of Electrical Engineering offers a vibrant environment for undergraduate education, postgraduate education and research in Electrical Engineering. The department has been playing a vital role in producing scientists and technologists of highest caliber ever since it was established in the year 1969. The department of Electrical Engineering at YMCA University of Science & Technology has evolved with time and offers B. Tech, M Tech and PhD. The UG curriculum provides strong base to the students in electrical engineering and provides exposure to the latest technologies. In addition to the strong undergraduate programme, the department has been playing a pioneering role in producing world class postgraduates and research scholars. The infrastructure and lab facilities are upgraded from time to time to make the opportunities available for students and researchers. The department is currently engaged in various areas of electrical engineering including Power Studies, Power Electronics, Electrical Drives, Renewable Energy and Power Quality etc.

ABOUT THE COMPANY

Opal-RT Technologies manufactures Matlab/Simulink based Real Time Simulators / Hardware in Loop (HIL) testing equipment/ Rapid Control Prototyping (RCP) systems & Power Hardware in Loop (PHIL) Systems to design, simulate, test, optimize and validate Controllers & Plants used in power grids, microgrids, power electronics, motor drives, EV, automotive, trains, aircraft, EV Battery and various other industries as well as R&D centres and universities. OPAL-RT has been in business of Real-Time Simulation for the past 20 years. Over the years, OPAL-RT has become a world leader in the development of CPU/FPGA-based real-time simulators & Test Systems for the below mentioned domains.

PATRON

Prof. Raj Nehru
(Vice-Chancellor)
J.C. Bose University of Science and Technology, YMCA, Faridabad

PROGRAMME CHAIR

Prof. (Dr) Poonam Singhal
(Chairperson Electrical)
Department of Electrical Engg.
J.C. Bose University of Science and Technology YMCA, Faridabad.

ADVISORY COMMITTEE

Prof. P.R Sharma
Prof. (EL) JCBUST, YMCA Faridabad
Prof. Rajesh Kumar Ahuja
Prof. (EL) JCBUST, YMCA Faridabad
Prof. Anju Gupta
Prof. (EL) JCBUST, YMCA Faridabad
Prof. Yoginder Arya
Associate Prof. (EL) JCBUST, YMCA Faridabad

COORDINATOR

Dr. Shakuntla (9811384551)
Electrical Engg. Department
J.C. Bose University of Science and Technology YMCA, Faridabad.
Email ID: sttpymca2021@gmail.com

Mr. Nitin Goel (9313241442)
Electrical Engg. Department
J.C. Bose University of Science and Technology YMCA, Faridabad.

ORGANISING COMMITTEE

Dr Sakhi Kalra
Dr Rashmi Agarwal
Mr. Satvinder
Ms. Anubha Gautam
Ms. Shipra Agarwal
Mr. Atma Ram
Ms. Rachna

AICTE Sponsored

Online Short Term Training Programme
on

"ELECTRIC VEHICLE TECHNIQUES WITH OPAL RT SOLUTIONS"
(20.12.2021 – 25.12.2021)

organized by

DEPARTMENT OF ELECTRICAL ENGINEERING

J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY, YMCA, FARIDABAD
NAAC 'A' Grade Accredited State Govt. University
(Established by Haryana State Legislative Act No. 21 of 2009,
Recognized by U.G.C. u/s 2 (f) and 12(B) of U.G.C. Act 1956)
NH- 2, SECTOR-6, MATHURA ROAD, FARIDABAD HARYANA-121006

IN ASSOCIATION WITH

OPAL-RT TECHNOLOGIES

jcboseust.ac.in /JCBoseUST

WORKSHOP OBJECTIVE

This STTP covers the entire spectrum of design, technology and analysis involved in the electric vehicle development cycle. It aims to deliver the right tools and skills for EV Systems Modelling and simulation that includes EV technology, operations, battery systems and functions, power train systems and components for better simulation and modelling using OPAL-RT hardware and simulator.

The training will be a combination of presentation, demonstration and hands-on sessions under the guidance of resource persons from renowned speakers from IITs, other renowned institutes and industry-expert instructors.

The various objectives of the STTP are:

❖ To discuss the Issues in Grid Integrated PV system and application of Power Electronics in EV System
❖ To get Insights details of Battery Management for EV System.
❖ To implement the BMS and charge communication simulation using virtual CAN in python with web interface.
❖ Learn fundamental concepts of hardware description language
❖ To study real-time system fundamentals using OPAL-RT and real time simulation using OPAL-RT Simulator.
❖ To introduce about OPAL-RT hardware.
❖ To discuss OPAL-RT solutions for Rapid Control prototyping applications Motor Control HIL simulation, for Smart Grid Real-time simulation Communication Protocols and for Microgrid Real-time simulation.
❖ To focus on OPAL-RT Grid Simulation solutions & PHIL simulation Grid Simulator DFIG based emulator and solar PV emulator.

WORKSHOP OUTCOME

The participants will get the insight details of various issues related with Grid Integrated PV System, Battery management system and Hybrid energy storage system and energy management strategies to improve fuel economy in Hybrid Electric Vehicles. Opal-RT provides solution that helps in different aspects like reducing battery cost and increasing life, eliminating battery catastrophic failure modes, making the traction motor highly efficient, minimizing reliance on rare earth elements, meeting EMI–EMC regulations, and developing fuel cells.

RESOURCE PERSONS

Prof Bhim Singh, IIT Delhi
Prof. Sukumar Mishra, IIT Delhi
Prof N.P Padhy, IIT Roorkee
Dr. Seedhar Medichetty, Mahindra University, Hyderabad
Dr Srinivasa Reddy Dwarampudi
Prof. Hariom Bansal, BITS Pillani
Mr. Ravi Teja, Application Engineer (Opal RT)
Mr. Satish Meena, Application Engineer, Opal RT

ELIGIBILITY CRITERIA

Faculty members and Research Scholars/PG Scholars from the AICTE/UGC or equivalent Universities/Organisations, Government/Industry Bureaucrates.

All the shortlisted candidates will be informed through mail.

IMPORTANT INFORMATION ABOUT STTP

There will be no registration fee. All registered participants will be eligible to get e-certificate whose attendance is above 80% in all the sessions and who submits feedback form for each session. A Quiz will be conducted on the last day of the STTP. Participants have to secure minimum 60 % in quiz for certificate.

REGISTRATION LINK

Interested Participants can register online by clicking the below link
https://forms.gle/rZzhQ5Z1LnGePSeY7

WHATSAPP GROUP

After registration join the whatsapp group by clicking the below link
https://chat.whatsapp.com/EyoektCt16P9psAJItf8CY

IMPORTANT DATES

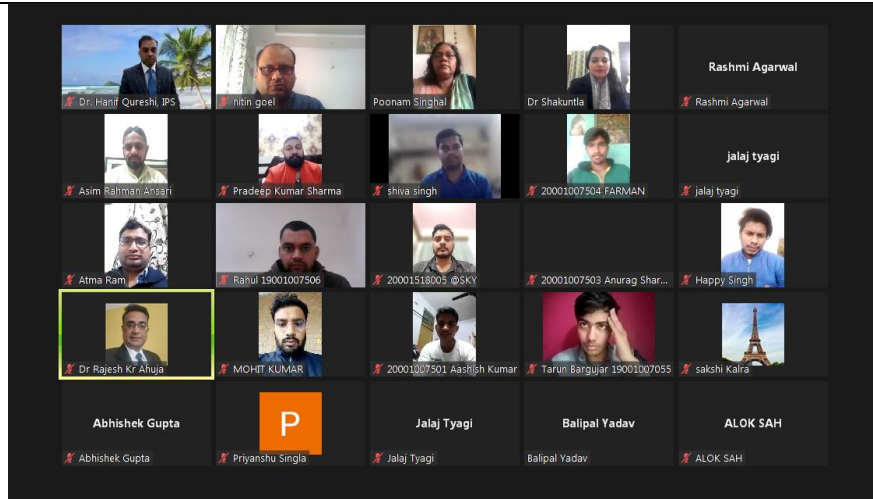Last date for submission of application form :
17th December 2021

ABOUT J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY YMCA, FARIDABAD

J.C. Bose University of Science and Technology YMCA, Faridabad (formerly YMCAUST, Faridabad) has been in existence for the past 48 years and consistently been contributing towards creation of competent engineering professionals and entrepreneurs. An Institution that had a humble beginning as a post diploma institution and famous for generating skilled technical human resource for the industry has been elevated in 2009 as University of Science and Technology to further create competent human resource in diversified areas of Science & Technology. The competence of the University has been recognized at various levels by the agencies like UGC (grant of 12B status), accreditation (NAAC Grade 'A'), NIRF (best ranking amongst State Engineering Universities in Haryana), etc. The University offers B. Tech Degree courses in Electronics and Communication Engg, Instrumentation and Control Engg., Computer Engg, Information technology, Electrical Engg., Mechanical Engg. and Civil Engineering.
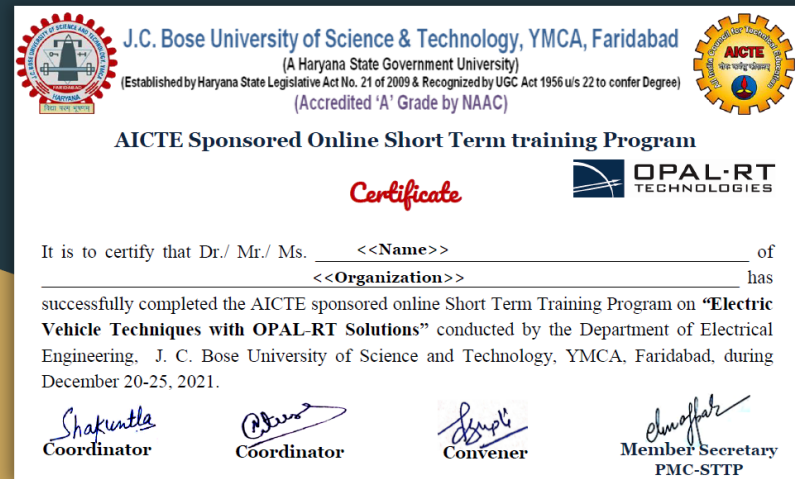
The University has also added new chapters in its glorious history i.e. BBA, MBA, BCA, MCA, M.Tech, B.Sc., M.Sc. (Physics, Maths, Chemistry& Environmental Sciences), M.A. (Mass Communication and Journalism) and Ph.D in various disciplines. Moving ahead on the path of excellence, the University is ready to effectively take up the forthcoming challenges in diversified domains. To accomplish this, new courses are being added and new facilities are being developed on continuous basis. Inculcation of ethical and moral values among youth is one of our prime concerns.

attach two/ three good quality photographs	
Attach certificate of the event	
Any other information	NA