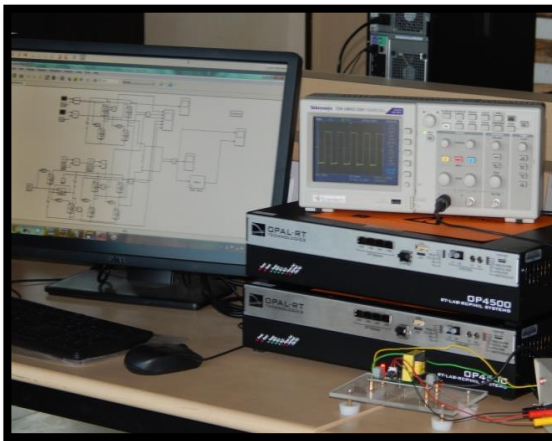


## ABOUT OPAL-RT

OPAL-RT is the world leader in the development of PC/FPGA Based Real-Time Digital Simulators, Hardware-In-the-Loop (HIL) testing equipment and Rapid Control Prototyping (RCP) systems to design, test and optimize control and protection systems used in power grids, power electronics, motor drives, automotive industry, trains, aircrafts and various industries, as well as R&D centers and universities. OPAL-RT's unique technological approach integrates parallel, distributed computing with commercial-off-the-shelf technologies. The company's core software, RT-LAB, enables users to rapidly develop models suitable for Real-Time Simulation, while minimizing initial investment and their cost of ownership. OPAL-RT also develops mathematical solvers and models specialized for accurate simulation of power electronic systems and electrical grids. RT-LAB and OPAL-RT solvers and models are integrated with advanced field programmable gate array (FPGA) I/O and processing boards to form complete solutions for RCP and HIL testing.



**OPAL-RT Real Time Simulator**

## ABOUT NITK

NITK Surathkal is a premier institution engaged in imparting quality technical education and providing support to research and development activities. NITK is recognized as an institute of national importance by an act of parliament. NITK has carved a niche for itself among the best technical institutes in India. NITK offers 9 UG, 26 PG and PhD programs.

## DEPARTMENT OF EEE

The Department of Electrical Engineering was established right from the inception of the institute in 1960. The post-graduate programme in Power and Energy Systems was started in the year 1992. Formal research activities leading to a doctoral degree (PhD) were introduced in the year 2003. The department has always exerted the best of its efforts to meet the objective of achieving technical excellence. The department is actively involved in research, development, testing and consultancy activities. There are several full-time PhD scholars pursuing research in the department, in addition to a large number of part-time registrants. Department has been extending need-based services of testing and consultancy to the industrial sector. Its R & D activities have gained momentum with funding/MoU from governmental agencies/industries.

## COORDINATORS

Dr. H. Nagendrappa, Dr. B. Venkatesa Perumal,  
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## A Self-financed Five Days Short Term Course

on

## REAL TIME SIMULATION OF ELECTRICAL SYSTEMS

From

**14-11-2018 to 18-11-2018**



**Organized by**

**Department of  
Electrical and Electronics Engineering  
National Institute of Technology Karnataka  
Surathkal, Mangalore - 575 025**

**In association with**

**OPAL-RT Technologies India Pvt. Ltd.  
Bangalore**

## ABOUT THE COURSE

The design and performance evaluation of a system requires thorough validation of results through simulations prior to hardware setup. Recent advancements in computing technologies have made real time simulation popular among the industries, academia, and research organizations. Training the manpower to cater this is the need of the day. This course is intended to provide information on real time simulation technology and hands on experience on OPAL-RT Real Time simulator.

## SCOPE OF THE COURSE

The following topics will be covered:

- Basics of Real Time Simulation (RTS)
- RTS Challenges & Solutions
- Hardware in Loop Simulation
- Rapid Control Prototyping
- Getting Started with RT-LAB
- Introduction to OPAL-RT Hardware
- eMEGAsim & Applications
- eFPGAsim & Applications
- MMC solution from OPAL-RT
- Introduction to HYPERMIM
- Protection Relay Testing
- ePHASORsim & Applications

## REGISTRATION FEE

The registration fee for:

Faculty/Industry persons : Rs.3000/-  
Students (UG/PG/PhD) : Rs.1500/-

Registration fee includes registration kit, working lunch and refreshments. Limited accommodation will be provided in the institute guest house/hostels upon request on chargeable basis.

With a view to give individual attention to the participants and to make the program more effective, the number of participants is restricted to about 40.

## ADDRESS FOR COMMUNICATION

Send your completed registration form To:

Dr. H. Nagendrappa,  
Co-ordinator, Five Days STC on Real Time Simulation of  
Electrical Systems, Department of E&E,  
National Institute of Technology Karnataka, Surathkal  
P.O. Srinivasnagar, Mangalore-575025

## IMPORTANT DATES

Completed Registration forms accompanied by registration fee (in the form of DD) should reach the coordinator not later than 9<sup>th</sup> November 2018.  
The selected candidates will be intimated on or before 10<sup>th</sup> November, 2018 through e-mail / phone.

## RESOURCE PERSONS

Technical lectures and hands-on training will be provided by the industrial experts from OPAL-RT Technologies, Bangalore.



Venue:

**Department of Electrical & Electronics Engineering**  
**NITK Surathkal**

## REGISTRATION FORM

**Five Days STC**  
**on**  
**REAL TIME SIMULATION OF ELECTRICAL**  
**SYSTEMS**  
**Organized by the Department of Electrical &**  
**Electronics Engineering, NITK Surathkal**

**14.11.2018 to 18.11.2018**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Official Address: \_\_\_\_\_

Mobile/Telephone: \_\_\_\_\_

e-mail: \_\_\_\_\_

Accommodation Required: \_\_\_\_\_ (Yes / No)

Payment Details:

DD No.: \_\_\_\_\_

Date: \_\_\_\_\_ Rs. : \_\_\_\_\_

(DD should be drawn in favor of "Director NITK"  
payable at SBI, NITK Surathkal)

Date: \_\_\_\_\_

Signature of the Applicant:

\_\_\_\_\_