Participants

A maximum of thirty participants from NITs and Engineering Institutions will be selected on first come first serve basis. The completed registration form; routed through proper channel and duly signed by the participants should reach the coordinators on or before November 1st, 2016. The registration fee of ₹ 5000/- should be paid through bank draft drawn in favor of "**Director VNIT, Nagpur**" payable at SBI VRCE Branch, Nagpur. The participants will have to bear the travel and lodging expenses. The institute can provide paid accommodation on request.

Important Dates

Last date for Registration: ***1st Nov 2016***
STTP Dates: ***15th to 19th Nov 2016***

Patron

Dr. Narendra S.Chaudhari
Director, VNIT Nagpur

Coordinators

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Course Details

Academicians and professionals from IIT, NIT, and BARC shall be delivering lectures related to following topics:

- Introduction to Fractional Calculus
- Simulation of different approximation methods to implement fractional operators [*Simulation of Charef and Oustaloup Approximation method, Introduction to FOMCON toolbox*]
- Analog implementation of fractional operators [*Implementation using RC network*]
- Implementation of Analog fractional order PID (FO-PID) controller and performance check with DC motor emulator [*Complete hardware details and performance check*]
- Digital implementation of fractional operators [*Digitization of analog methods as well as direct digitization techniques*]
- Hardware in loop (HIL) implementation of FO-PID controller on Magnetic levitation and Inverted Pendulum system [*Matlab based design of FO-PID controller added with real time system in HIL mode*]
- Real time implementation of digital FO-PID controller [*Implementation using DSP controller*]
- Worksheet and demonstrative experimentation based learning

Registration Form

Short Term Training Program on

"Fractional Calculus Engineering Laboratory"

November 15-19, 2016

Name:_____
Sex:_____Date of Birth:_____
Designation:_____
Organization:_____
Corresponding Address:
_____
_____
City:_____ State:_____
Mobile No: _____
Email ID: _____

Payment Details:
Draft No:_____
Issuing Bank: _____
Amount:_____
Drawn on:_____
Date:_____

Signature of Participant

Correspondence Address:

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Mobile: +91-8888805700
Mail id: bhooshanar@eee.vnit.ac.in
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Short Term Training Program

On

"Fractional Calculus Engineering Laboratory"

15th -- 19th November 2016

Organized by

Department of Electrical Engineering,
Visvesvaraya National Institute of Technology,
Nagpur, 440010
Maharashtra

About VNIT Nagpur

Visvesvaraya National Institute of Technology, Nagpur is one of the thirty one National Institutes of Technology in the country. The Government of India by Act of Parliament (National Institutes of Technology Act, 2007 (29 of 2007)) declared VNIT Nagpur as an Institute of National Importance along with other NITs. The Institute was established in the year 1960 as Regional College of Engineering. In 1962, the Governing Board of the College resolved to name it after the eminent engineer, planner, and statesman of the country Sir Mokshagundam Visvesvaraya. The Institute offers eight B. Tech., one B. Arch., sixteen M.Tech., three M.Sc., and Ph. D. programs in various disciplines of Engineering, Architecture, Science, Humanities and Social Science.

Introduction

Fractional calculus is about differentiation and integration of non-integer orders. Integer-order models and controllers for complex, natural or man-made systems is oversimplification of the models. Using integer order traditional tools for modeling and control of dynamic systems may result in suboptimum performance, and that of using fractional order calculus tools, it could be "more optimal".

The Department of Electrical Engineering, Visvesvaraya National Institute of Technology, Nagpur invites you to join a short term training program on "Fractional Calculus Engineering Laboratory", during November 15th (Tuesday) to 19th (Saturday), 2016. Introduction to the fractional calculus followed by the various applications of FO-PID in real time systems by experienced academicians and industry people from IITs, NITs, and BARC will be expounded. Importance of Fractional order systems in engineering, designing, development, and its implementation on real time systems is the general scope. Hands on training is the main focus of the workshop.

Objectives of STTP

The short term training program will provide a valued platform for the industry specialists and academicians from institutes to exchange and explore the latest views on technological developments in the field of fractional order systems. The complete course is focused on practical lessons. Hands on experience on the controllers and its demonstration on lab setups like **Maglev system, Inverted Pendulum, and DC motor drive** are the main attractions of the training program.