ONE WEEK MHRD GIAN
course on
Advanced Adjustable Speed AC Motor Drive Systems :
Application Problems & Solutions
(ASMDSS-2K17)
15-19 May, 2017 @ NIT GOA

Registration

Application in the prescribed format duly sponsored by the Head of the
institute along with the registration fee in the form of a Demand Draft
payable “Demand to NIT GOA” payable at Corporation Bank, Panaji,
Ponda. Gaua should reach the same on or before 12th April, 2017.
The participation fee for taking the course area as follows:

Participants from abroad: US $200
Participants from Industry: Rs.5000/-
Participants from Academic/Research Organizations:
Rs. 4000/-
Students and full-time research scholars: Rs.2000/- (For SC/ST students:
Rs. 1000/-)

The above fee includes all instructional materials, computer use for tutorials.

Last date for receiving applications: 12th April 2017
Intimation to participants: 15th April 2017
Course Dates: 15-19 May 2017

Important Dates

Registration Links
http://www.gian.iitkgp.ac.in/GREGN
http://www.nitgoa.ac.in/gian

How to Reach Us

NIT Goa is located in Farmagudi, which is about 4 kms from Ponda
city. Mangao Railway Station is 26 kms south of Farmagudi while
Kormali Railway Station is 16 km north of Farmagudi. Goa’s Dabolim
International Airport is 36 kms west from Farmagudi. There are
public and private bus services between Ponda and the major cities of
Goa like Panaji, Mangao, Vasco and Mapusa. For local transport,
rickshaws and auto-rickshaws are also available.

Boarding & Lodging

Accommodation for the outstation participants may be arranged in
the institute hostels on request, subject to availability.

For more details please contact

Co-ordinators - GIAN course ASMDSS 2K17
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Prof. Prasad Enjeti is a member of Texas A&M University faculty since 1988 and is widely acknowledged to be a distinguished teacher, scholar and researcher. He received his B.E. degree from Osmania University, Hyderabad, India, in 1980, the M.Tech degree from Indian Institute of Technology, Kanpur, in 1982, and Ph.D. degree from Concordia University, Montreal, Canada, in 1986, all in Electrical Engineering. His research emphasis on industry-based issues, solved within an academic context, has attracted significant external funding. Up to now, he has graduated 29 PhD students and 11 of them hold academic positions in leading Universities in the world. He along with his students have received numerous best paper awards from the IEEE Industry Applications and Power Electronics Society. His primary research interests are: Advanced converters for power supplies, motor drives; power quality issues, active power filter development; utility interface issues, advanced switching power supply design and solutions to improve power management issues; power conditioning systems for fuel cells, wind and solar energy systems; design of high temperature power conversion systems with wide-band-gap semiconductor devices. He holds four U.S. patents and has licensed two new technologies to the industry so far. He was the recipient of eight best papers awards in IEEE Conference and Transaction publications. In year 2000, he was elected to Fellow grade by the IEEE Fellow Committee for “Contributions to solutions of utility interface problems in power electronic systems and harmonic mitigation”. He is the lead developer of the Power Electronics / Power Quality Lab Cell Power Conditioning Laboratories at Texas A&M University and is actively involved in many projects with industries while engaged in teaching, research and consulting in the area of power electronics, motor drives, power quality and clean power utility interface issues.

Overview of the Course
Adjustable speed AC drives have become the preferred choice in many industrial applications where controlled speed is required. At the same time, the maturing of the technology and the availability of fast and efficient solid state power semiconductor switches (IGBTs) has resulted in voltage source PWM controlled inverters becoming a standard configuration in the power range to 500KW. While the high frequency PWM control represents the most advanced drive concept, when improperly applied, it also generates side effects, some of which have been recognized only recently. This course has been designed to cover application issues of PWM inverter controlled ac motor drives which include: damage to motor insulation due to reflected voltages caused by long motor leads, the mechanism of motor bearing failures due to excessive common mode dv/dt and leakage currents to ground.

Following a description of the problems, several practical solutions are also presented and analysed. Finally, line harmonic problems caused by the input diode rectifier are also described and several low cost solutions selected to meet IEEE 519-1992 are presented. PWM Inverter/motor manufacturers, system designers as well as adjustable speed drive application engineers and users will find this course informative and beneficial.

Course Objectives
The primary objectives of the course are as follows:

- Exposing participants to various Power electronic converters and drives and power quality issues in inverter fed drives.
- Importance of training in students and practicing engineers.
- Building confidence in the participants in the applications of PWM inverter fed drives.
- Highlighting various key issues in the area of electric drives.
- Providing exposure to practical problems and their solutions, through case studies and live projects in electric drives.
- This course will be taught in 5 days, with computer-based exercises and simulations.

Course Outline
- Power Quality Compliance of ASD Equipment: IEEE 519 Standard; Performance of an ASD during supply voltage unbalance; Methods for reducing harmonic distortion. Low cost clean power utility interface systems for ASDs: Xeasurement of ASD systems caused by voltage sags; utility capacitor switching transients and some solutions: ASD ride-through issues: Summary and Discussion.

Expected Outcome
- To know the importance of ASD and its applications.
- To know about the problems in implementing ASD and solution techniques for the same.
- To acquire knowledge on effect of ASD equipment on power quality and ASD ride-through issues.

Who Can Attend?
- You are an engineer and researcher from manufacturing, service and government organizations including R&D laboratories interested in designing converters for alternate energy sources.
- You are a student or faculty/staff member from an academic institution interested in learning how to research on Advanced Electric Drives.

About the Institute
The National Institute of Technology Goa (NIT Goa) is a premier technical institute of the region. NIT Goa was established in the year 2010 by an act of parliament (NIT Act 2007) and it is declared as “Institute of National Importance”. The Institute offers undergraduate and postgraduate courses in Computer Science and Engineering, Electronics and Communication Engineering and Electrical and Electronics Engineering. The Institute also offers Ph.D. in all the three above mentioned engineering disciplines. Along with that the Institute offers Ph.D. in Mechanical Engineering, Physics, Chemistry, Mathematics, Economics and English. The Institute is sincerely attempting to deliver quality education and to achieve excellence in teaching, learning and research with high professional ethics.

About the Department of EEE
The Department of EEE has been actively engaged in teaching and research in diverse fields of Electrical Engineering with well qualified, and experienced faculty. The department offers a UG (B.Tech) Program in Electrical & Electronics Engineering, one PG (M.Tech) Program in the specializations of Power Electronics & Power Systems. The Department also offers Ph.D Programs in all areas of Electrical Engineering. Along the department has been at the modernization of the curriculum for both UG and PG courses.

Co-ordinators - GIAN course ASMD 2K17
Dr. Suresh Mikkili
Dr. Suresh Mikkili (Dean Students' Welfare) is working as an Assistant Professor in the Dept. of Electrical and Electronics Engineering, National Institute of Technology, Goa. He received his Ph.D. (2010-2013) and Masters (M.Tech) (2006-2008) in Electrical Engineering from National Institute of Technology, Rourkela, India. His main area of research includes Power quality improvement issues, Active filters, Power Quality Assessment, Power System and Application of Soft Computing Techniques. He has published several talks in his research area. He has published more than 40 research papers in reputed International Journals and conferences. He has authored a book entitled “Power Quality Issues: Current Harmonics” published in CRC Press, Taylor & Francis Group.

Dr. Barry Venugopala Reddy
Dr. Barry Venugopala Reddy is working as an Assistant Professor in the Department of Electrical and Electronics Engineering, National Institute of Technology Goa, India. He has received Ph.D. and M.Tech in Electrical Engineering from National Institute of Technology Warangal. His research interests are Multi-level inverters, Multi-level PWM Switching Strategies, Multi-level inverters for High Power Industrial and Transportation motor drives, Renewable energy systems. He has published more than 15 research papers in reputed International Journals and conferences.