

Department of Electrical Engineering
Jamia Millia Islamia



Electro-Energia

Edition 1 : 2016-17

INSIDE



Optimal and suboptimal
controller design
for wind power system



Indicon 2015



Advance in Nuerotech
for building the brain machine
interface

**Failure is central to engineering.
successful engineering is all about,
understanding how things break or fail!**
-- Henry Petrosky



NEWSLETTER

**DEPARTMENT OF ELECTRICAL
ENGINEERING**
FACULTY OF ENGINEERING AND
TECHNOLOGY, JMI



MESSAGE FROM HEAD OF THE DEPARTMENT

Electrical Sector is changing rapidly in India and there is a high demand for capable electrical engineers in the Government and private sectors, the Department is making best efforts to produce highly trained and capable engineers who can take up the challenges of the real world. The two key objectives of the department are to maintain high academic standards and to give due weightage to practical work. The department has a fine blend of renowned as well as young and dynamic faculty members, who are involved in quality research and imparting education in the best possible way. The faculty strives to foster and encourage a teaching methodology that is both practical and theoretical in approach. This orientation has led to successful projects and training. The lab facilities are being upgraded from time to time and provide adequate opportunities for the students to learn and innovate. Recently a curriculum revision workshop was organized to upgrade the syllabi to meet the academic as well as industry requirements, in which professors from leading institutes, experts from industry, Alumni, parents and students participated. Students of the department are regularly going for industry visits every year, apart from industrial training during long vacations. The Department also organizes interactive lectures by inviting Alumni and Technocrats from industries for the overall development of students.

I am happy to inform that most of the students of final year have been placed in reputed organizations and many have got offers for admission in masters' programme abroad, 40 students have qualified GATE exam in the current year.

The department is actively engaged with latest research as 90 students are doing Ph.D from the department. Research Scholars are publishing their research papers in SCI and SCOPUS indexed journals. Department is DST-SAP and FIST supported department. Departmental society has been established by the students for the extracurricular activities.

This society conducts various technical and cultural events regularly. "Engineers are the creators of the new world", going with these lines the Department has a fully equipped Project lab to encourage the students to show their creativity

I congratulate the TEKKNO CRAZIA team for bringing first issue of the newsletter and wish all electrical engineering students for good luck and successful life.

"I will simply express my strong belief, that that point of self-education which consists in teaching the mind to resist its desires and inclinations, until they are proved to be right, is the most important of all, not only in things of natural philosophy, but in every department of daily life."

1 MICHAEL FARADAY

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**WORKSHOP ON CURRICULUM
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**ALSO, DEPARTMENT
ORGANISED MORE THAN 20
ALUMNI LECTURES DURING
2014-2016**

GIAN COURSE

TAPPING THE TALENT POOL OF SCIENTISTS AND ENTREPRENEURS

CONTROLS AND RENEWABLE ENERGY AND MICROGRID

Course Coordinator Dr. Majid Jamil

Department of Electrical Engineering organized MHRD GIAN course on 'Controls for Renewable Energy and Microgrid' during May 29 – June 3, 2016. Dr. Adel Nasiri, Professor, Department of Electrical and Computer Engineering, University of Wisconsin, Milwaukee, USA was the foreign faculty for this course. Smt. Jyoti Arora, Jt. Secretary, Ministry of Power delivered inaugural address. 75 participants were short listed out of 110 applications.



Inaugural Function of MHRD GIAN course on 'Controls for Renewable Energy and Microgrid' at Department of Electrical Engineering Jamia Millia Islamia on 30th May 2016

ADVANCE IN NEUROTECHNOLOGY FOR BUILDING THE BRAIN MACHINE INTERFACE

Course Coordinator Prof. Munna Khan

Department of Electrical Engineering organised its Third MHRD GIAN course. Inaugural Function of the course was organized during 9:30 am – 11:30 am hours on Saturday, 25th February 2017. Air Marshal Pawan Kapoor VSM & BAR PSH, Director General Medical Services (Air), Indian Air-force was Chief Guest on the occasion and Prof. D. P. Kothari, Ex-Director, IIT Delhi was the Guest of honour for the Course. Prof. Mehtab Alam, Dean, Faculty of Engineering & Technology, Jamia Millia Islamia presided over the function. Dr. Nitesh V. Thakor, Professor of Biomedical Engineering, Johns Hopkins University, USA delivered the Guest Lecture.



ADVANCES IN POWER ELECTRONICS & RENEWABLE ENERGY SOURCES

Course Coordinator Dr. Ahteshamul Haque

Feb 06 – 10, 2017 ,Venue : Department of Electrical Engineering In this course, the spectrum of new energy sources, requirements of power electronics, working of microgrids, grid interfacing of converters, power management for automation, Electric vehicles,performance evaluation, use in smart cities and challenges are discussed.Professor Akhtar Kalam ,Victoria University, Melbourne(Distinguished Professorship position at the University of New South Wales, Sydney,Australia and 5 Malaysian universities) delivered the guest lecture.



Dr. Ahteshamul Haque

SMART SENSORS AND INTERNET OF THINGS

Course Coordinator Prof. Tarikul Islam

March 21 – 31, 2016 Venue Department of Electrical Engineering. In this course, the important sensors, associated interface electronics, signal conditioning, technology of smart sensor and IOT for the measurement and monitoring of vital environmental parameters were discussed.Dr. Subhas Chandra Mukhopadhyay has received PhD (Eng.) degree from Jadavpur University, India and Doctor of Engineering degree from Kanazawa University, Japan had delivered the guest lecture.



GOD'S PLAN FOR OUR FUTURE TECHNOLOGY

BY BHAVANA VASHIST

B.TECH. 1ST YEAR (ECE)

According to Science, complex Homo sapiens evolved from single-celled simply-structured bacteria. Unlike our ancestor, we discovered unimaginably incredible mysteries and machines in a much shorter span of time. Our technology today is crawling on red planet, Mars as the Curiosity rover. We can now learn about internal constitution, atmosphere, diameter of a star or nebula, when it was born, when it will die and how that will happen just by sitting comfortably on a chair on our blue planet. All this can be told without touching or going near those stars. Now, we can create machines which are more advanced, faster and intelligent than us. We are like God for the robots and computers. We are able to develop artificial heart, limbs, ears and it seems that humans will be able to create humans from scratch in the coming future. We can revive a nearly dead person using advanced medication and biotechnologies. Such is the mind!!

In the near future, we hope to make our 4G to 7G, make most advanced sort of robot. There will be a time when people will go to college in flying cars, never touching the roads again, our life expectancy will reach 200 years, we will talk more to artificial human looking bots than to real human, most people will do least work and leave everything on AI, people will be born on Mars and consider it their mother planet. Taxis, planes, ships drivers will be replaced by robots and your online order will be delivered by drones to your home. We will be able to dig more of the Earth and reach the corners of the solar system.

Now, imagine we make a time machine that can make us meet already dead Sir Newton or Sir Einstein, our future President or next generation of our children. This will violate laws and environment of both past and future, affecting the present. Using time machine we will be able to see what was there before Big Bang and what will happen to Earth in coming billions of years. God surely does not want that to happen, our imagination and intelligence is limited because God does not want us to know everything and go so far, this is for our benefit. As this will heavily disturb the equilibrium of

cycles of life, time machine will only feature good in Science fiction and not reality! If we become too advanced for us to be, if we cross the permitted or possible level of intelligence, God will have to take serious steps. Remember that our planet will remain as it is for some billions years because after that either aging Sun will eat it up or Andromeda galaxy will merge into our Milky Way galaxy, destroying every single living being inside them, but till then we have a lot of time to find another place to live. For the sake of balance in God's universe, we won't reach the edge of the universe or move with speed of light. We won't be able to make exactly same copy of ourselves or make a new planet on our own with suitable environment for survival, as there will always remain an infinitely large gap between the intelligence of God and His creations. It will remain a secret, how our creator looks and works, the exact point to point details of what happens after we die, how we reach heaven? Even our most advanced technology won't let us to do so. Our advancements and innovations can't create souls for a body or extract soul from within our body. Because this is God's plan for our technological advancements that can't be changed.

God has made this syllabus, for our own good but do not worry, we can still be so much advanced to live comfortably with our latest smartphones and lappies! We can still enjoy the present moment without the need of changing our past or future. We can't see how God looks with our technology but surely we can feel his blessings around us in the green nature, blue sky, colourless fresh air. Keep innovating and believing that ultra-advancements and major developments of humans are a part of syllabus in God's plan for our future technology!

INDICON-2015



Vice Chancellor Prof. Talat Ahmad addressing at the Inaugural Function of International Conference 12th NDICON-2015 at M.A.Ansari Auditorium on 18th December 2015.



Organising chair and head, Department of Electrical Engineering Prof. Majid Jamil delivering welcome address at the inaugural function of International Conference at M.A. Ansari Auditorium

An IEEE international conference INDICON-2015 was hosted by the Department of Electrical Engineering in December 2015. The four day conference was attended by several foreign delegates, IEEE members from all over the country and various students from different colleges. The sessions are chaired by John D McDonald, Director, GE Digital Energy, Atlanta. He will talk about Distribution Automation.

Other plenary speakers include:- Roger Fujii, IEEE CS President 2016 (IT for Smart grid Applications) Roberto De Marca, IEEE President (Communications for smart environments). Saifur Rahman, IEEE PES President Elect 2016, Director, ARI, Virginia Tech (Role of the smart grid in Renewable Integration) Mohd Shahidehpour, IIT Chicago, Founder Editor, IEEE Transactions on Smart grid (Microgrids- A new hub in smart energy infrastructure) The conference witnessed eight tutorials the previous day on various subjects spoken by the eminent delegates who were invited to the conference from far and wide. INDICON 2015 featured a whopping 90 oral paper presentation sessions and 13 poster presentation sessions for three days. More than 700 research papers were presented and published in the conference.

Emerging Trends in Electrical and Electronics Engineering

National Conference



Vice Chancellor Prof. Talat Ahmad released the conference proceeding of ETEE organized by the Department during 7-8 Feb 2015

Optimal and suboptimal controller design for wind power system

Reshma Ehtesham, Shahida Khatoon and Ibraheem Naseeruddin

Wind power is a cost-effective renewable source and can be smoothly integrated into power grid by incorporating adequate control strategies. The wind turbine prime mover, wind, is uncontrollable which makes it different from conventional generation. Therefore, it becomes very important to carry out investigations on the dynamic behavior of wind power-generating systems. In this paper, the state space model of the system is developed, optimal controllers using full-state feedback control strategy and suboptimal controllers using strip eigenvalue assignment method are designed to study the dynamic behavior of the system. Also, the optimal controllers are designed for various operating conditions using pole placement technique. Following the controller designs, the closed-loop system eigenvalues and dynamic response plots are obtained for various system states considering various operating conditions. The investigations of these reveal that the implementation of optimal controllers offers not only good dynamic performance, but also ensures system dynamic stability.

ACCOMPLISHMENT

2016-2017



सत्यमेव जयते

Government of India

Ministry of Human Resource
Development

VISVAESVARAYA FELLOWSHIP

* 12 Ph.D. students of the Department received Visvaesvaraya fellowship from Ministry of Communications and Information Technology, Government of India during 2015-16



SPECIALIZED RESEARCH LABS

- Sensor and Instrumentation
- SCADA & Substation Automation
- Biomedical Engineering Research
- Solar Energy
- Power Electronics research
- Electrical Machines and Drives
- Power System and Switchgear
- * Control and Instrumentation



HIGHER EDUCATION

- 90 Ph.D. students are doing Ph.D. from the Department
- 25 Students are getting fellowship during Ph.D. programme.
- 35 Ph.Ds are awarded from the Department during 2014-16
- Faculty members and students of the Department published more than 250 papers in refereed International/nations Journals and conferences during 2014-16.
- 8 lectures during 2014-16.

MINI SHAJI THOMAS APPOINTED DIRECTOR NIT TRICHY

Dr. Mini Shaji Thomas , Professor in the Department of Electrical Engineering, appointed as a director of NIT Trichy. She has 29 years of teaching and research experience in the field of Power systems. Also she was the first Director of the Centre for Innovation and Entrepreneurship at JMI . She was the Head of the Department of Electrical Engineering from 2005-2008.





A workshop on curriculum revision was organized in the Department of Electrical Engineering during 6-7 March 2017.

- The Department of Electrical Engineering is rewarded by AICTE with Quality Improvement Programme (QIP) in 2017.
- The Department received Grant of Rs. 2.03 Crores from DST, Govt. of India as FIST project on “Real-time Digital Simulation Test bed for studying communication requirements for smart micro-grid for the Period of 2015-2020.

Four specialized research areas in the department

- * Power systems and Energy
- * Instrumentation and Control
- * Electronics, Communication and Computer
- * Machines, Power Electronics and Drives.



TEKKNOCRAZIA

DEPARTMENT OF ELECTRICAL ENGINEERING SOCIETY

BEST ACTIVITIES

1. H. S ANAND (DIRECTOR ROLLING STOCK, DMRC) DELIVERED KU AHMED MEMORIAL LECTURE

2. CROMA AND APTRON WORKSHOP
COORDINATED BY ZIBRAN AKHTAR

3. ABB INDUSTRIAL VISIT
FACULTY CO. RAJVEER SINGH
STUDENT CO. ZIBRAN AKHTAR

4. TEACHER'S DAY CELEBRATION AND FRESHER'S PARTY

ABOUT

FOUNDED BY AWANISH SHUKLA

CO-FOUNDED BY ZIBRAN AKHTAR

Tekknocrazia is the Association of students activities of all the undergraduating engineering Department students .

It focus on bringing required resources and organise variety of events such as workshops,debates,conferences, and also provide networking opportunities from other colleges and professionals.

More than 150 students are the members of it.



PLACEMENT

THIS YEAR

Till January More than 35 students have been placed in different companies and the no. still counting

40 students have qualified GATE examinations .

MD. SHOAB secured 34 rank.

3 students have secured admission in foreign university

COMPANIES SO FAR VISITED CAMPUS

The placement scenario at Jamia Millia Islamia for the year 2016-17 has so far been extremely good. Many companies registered with placement cell for electrical engineering field and recruited many students of EE branch. Prominent recruiting companies that visited our campus were:- L&T Hydrocarbon Engg. Ltd, Siemens Limited, TCS, SuperGas, Noida Power Company Ltd, L&T construction.

Editorial Team

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The more you suffer during the journey ,
the more you are going to enjoy the destination.

-Zibran Ansari



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