

25 & 26
JANUARY, 2019
KARACHI, PAKISTAN

IEEC
2019

4th International Electrical Engineering Conference (IEEC-2019)

**ASPIRING PATHWAYS IN
ELECTRICAL ENGINEERING (ASPIRE-2019)**

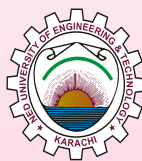


Jointly Organised by



The Institution of Engineers Pakistan

Karachi Centre



NED University of Engineering & Technology

Karachi

in collaboration with



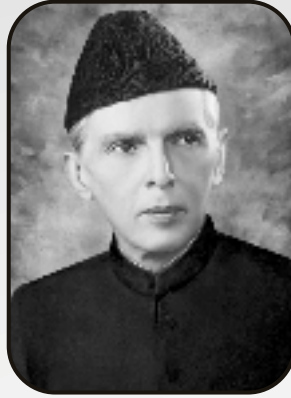
NATIONAL MOTO OF
PAKISTAN

**FAITH
UNITY
DISCIPLINE**

ایمان
اتحاد
تنظیم

UPON THE
INDEPENDENCE OF PAKISTAN,
THE ABOVE NATIONAL MOTO
WAS INTRODUCED AND
ADOPTED BY THE
COUNTRY'S FOUNDER
MUHAMMAD ALI JINNAH

Father of Nation



Muhammad Ali Jinnah

"If Pakistan is to take its proper place among the progressive nations of the world, it will have to take up a good deal of leeway in the realm of scientific and technical education which is so necessary for the proper development of the country and the utilization of its resources. The establishment of institution like the Institute of Engineers will greatly stimulate technical research and help in disseminating available information.

The Institute of Engineers will not only benefit the engineers themselves by improving their technical knowledge but also bring lasting benefits to public services which they are called upon to perform. I wish the Institute every success"

**QUAID-E-AZAM'S message to the
first inaugural meeting of the
Institute of Engineers Pakistan
on 20th June 1948.**

MESSAGE



GOVERNOR SINDH



The Institution of Engineers Pakistan is the premier body of qualified engineers in Pakistan and has made significant contributions to the development of the country. The role played by the Institution in spreading modern skills and technology is highly commendable. Recent advancements in Science and Technology have placed enormous power at the disposal of man which must be harnessed for the welfare of humanity. Pakistan possesses vast natural resources and it is the duty of our scientists and engineers to utilize these resources for the welfare of the society, in eradication of ignorance, poverty, hunger and disease.

I am happy to know that the Institution of Engineers Pakistan and NED University of Engineering & Technology are holding the 4th International Electrical Engineering Conference on 25th & 26th January, 2019 at Karachi. I am sure this Conference which will be attended by engineers from all the provinces of Pakistan and abroad will provide an excellent opportunity to the participants to benefit from the experiences of one another and to find solutions to our current national problems.

I understand that the activities of the Institution particularly its role towards the spread of technical knowledge is commendable, I hope that the Institution will strive hard to further increase the range of its services with national spirit and devotion all over the country.

I wish every success for the Institution of Engineers Pakistan and NED University of Engineering & Technology and the conference.

Imran Ismail
Governor Sindh

MESSAGE



CHIEF MINISTER SINDH

It is a matter of great pleasure to know that The Institution of Engineers Pakistan Karachi Centre and NED University of Engineering & Technology, Karachi are organizing the 4th International Electrical Engineering Conference (IEEC-2019) on 25th & 26th January, 2019 at Karachi, in collaboration with Federation of Engineering Institutions of Islamic Countries, Federation of Engineering Institutions of South & Central Asia and various academic Institutions of Pakistan.

The Conference Theme "Aspiring Pathways in Electrical Engineering (ASPIRE-2019)" provides a unique platform to eminent Engineers, Scientists, Researchers, Academicians, and Entrepreneurs across the globe to participate and share their research advancements and new technologies.

I sincerely hope that the two days of deliberations, discussion, interaction and proactive exchange of ideas will prove to be fruitful and contribute immensely to our mutual growth. I also congratulate the conference organizers for attracting a wide range of papers from experts in their fields.

The technical talks and papers which will be presented by eminent scientists, Researchers, faculty members and industry personnel hopefully will ignite new ideas, inspire young graduates to focus on research and development, it will also pave way to work closely with industries for solutions in the relevant technical areas.

I wish every success for the Institution of Engineers Pakistan, Karachi Centre and NED University of Engineering & Technology and the conference.

Engr. Syed Murad Ali Shah
Chief Minister Sindh

MESSAGE



PRESIDENT

Federation of Engineering Institutions of Islamic Countries (FEIIC)

The Federation of Engineering Institutions of Islamic Countries (FEIIC) is an international non-profit professional organization, established in 1989, with the aim of fostering corporation in engineering education, research and professional practice in the Islamic Countries. It comprises of 22 member countries and a number of corporate and institutional members from amongst academic and research institutions, consultants, contractors and national organizations.

FEIIC, in cooperation with its members, has organized many scientific and research conferences, seminars, and workshops in its member countries on various aspects of engineering and related issues, such as engineering education, accreditation of engineering qualifications, and affordable housing etc. We are committed to share and exchange the experiences and expertise of the member countries with each other in addressing the crucial challenges in engineering and technological fields and in adopting the emerging trends and new concepts in engineering education, research and development and their implementation.

This 4th International Electrical Engineering Conference (IEEC-2019) on **Aspiring Pathways in Electrical Engineering (ASPIRE-2019)** is one of such efforts by the Institution of Engineers Pakistan, an active member of FEIIC, which we hope will bring the researchers and practicing engineers together on a shared platform to share and exchange their expertise and experiences.

Finally, I would like to congratulate and commend the partners and Organizing Committee of the Conference for all their efforts, and wish all the participants a very successful and enriching experience at the Conference.

Dr. Saad Al Shahrani
President, FEIIC

MESSAGE

FEISCA



PRESIDENT

**The Federation of Engineering
Institutions of South & Central Asia
(FEISCA)**

It is with pleasure that I send this message on the occasion of the 4th International Electrical Engineering Conference (IEEC-2019) on **“Aspiring Pathways in Electrical Engineering (ASPIRE-2019)”**

Papers presented being of good level in International authorship and topics range, the Conference will be a forum that will enrich the regions knowledge and expertise potentials and be a platform for sharing innovations and advances in Electrical Engineering and related disciplines among countries in the region.

The Federation of Engineering Institutions of South & Central Asia (FEISCA) as a collaborating partner to the event looks forward to the improved professional collaboration that would result among engineering institutions of the region.

The FEISCA hopes that the confluence of technology and expertise would ultimately flow to the engineering community at large contributing to the sustainable socio-economic development in the region.

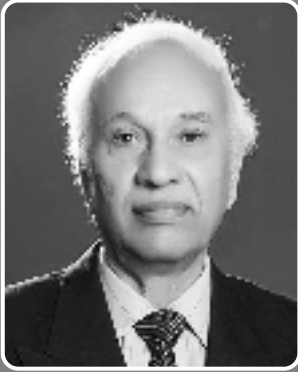
While congratulating the IEP, Karachi Centre and NEDUET, Karachi for successfully organizing the IEEC-2019, I also convey my well wishes to all the fellow collaborating partners of this event.

I wish all the participants a very successful and enriching experience at the Conference.

Eng. Jayavilal Meegoda

President – FEISCA
Immediate Past President - IESL

MESSAGE



PRESIDENT

The Institution of Engineers Pakistan



It is a matter of great pride that The Institution of Engineers Pakistan Karachi Centre (IEP) and NED University of Engineering and Technology Karachi in collaboration with two International Organizations and 17 prestigious academic institutions of Pakistan are holding 4th International Electrical Engineering Conference on **Aspiring Pathways in Electrical Engineering (ASPIRE-2019)** on 25th & 26th January, 2019 at IEP Convention Center, Karachi.

It is also a matter of great satisfaction that renowned experts from within the country and from abroad shall be presenting their valuable papers during the conference. This event will provide the opportunity to young Engineers to benefit from the knowledge of experienced Engineers in their relevant fields.

The Institution of Engineers Pakistan Karachi Centre is working hard for dissemination of knowledge by holding the National & International Engineering Conferences, Technical Seminars, Workshops and lectures for the benefit of Engineering profession and development of the Country.

The Chairman, Vice Chairmen, Secretary and Local Council Members of Karachi Center deserve appreciation for organizing three International Engineering Conferences regularly every year for the benefit of engineering community.

I pray for the success of 4th International Electrical Engineering Conference.

Engr. Dr. Izhar Ul Haq

President

The Institution of Engineers, Pakistan

MESSAGE



CHAIRMAN

The Institution of Engineers Pakistan, Karachi Centre
Members Executive Committee – FEIC, FEISCA & ACECC



The Institution of Engineers Pakistan (IEP) is playing a vital role in the development of Pakistan since its inception within the frame work of its aims & objectives which revolves around the promotion of technology, advancement of the engineering practice, application of principles of science in engineering and dissemination of technical knowledge. Upholding its tradition continuously for the last four years, this year also the 4th International Electrical Engineering Conference is being hosted by the IEP Karachi Center with more zeal and enthusiasm.

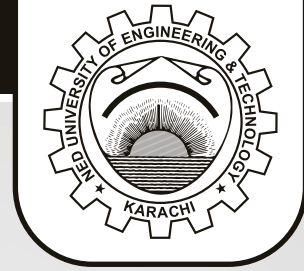
The conference shall dwell on the latest technological development in the field of Electrical Engineering and allied engineering disciplines which would not only broaden the vision of participants but shall led them to the frontiers of the existing knowledge and the way forward. Indeed to hold such International gathering, in the present security scenario was not only a challenge but was also an uphill task for which IEP Karachi Centre, NEDUET and all collaborating Institutions deserves all commendation. The collaborative role of Department of Electrical Engineering NEDUET, BUITEMS, BUET-Khuzdar, Bahria Univesity, DUET, DHA Suffa University, NUCES, Hamdard University, Iqra University, IIEE, PAF-KIET, MAJU, PNEC-NUST, SSUET & UIT deserves special commendation.

On behalf of The Institution of Engineers Pakistan, Karachi Center and the Organizing Committee of IEEC-2019, I would like to express my sincere appreciation for active participation, both from academia and industry. Indeed, all the members of Advisory Board, Management Committee, Coordination Committee and Technical Review Committee worked extremely hard to make this event happen. I have no doubt whatsoever that without their cooperation, support and active participatory role, this event would not have been possible for which I record my appreciation for all of them. Special thanks to the Conference Key Note Speaker of Inaugural session, Prof. Ir. Dr. Hazlie Mokhlis, Deputy Dean, Faculty of Engineering, University of Malaya, Malaysia and Key Note Speaker of closing session, Engr. Dr. Umar Shahbaz Khan, Project Director National Center of Robotics and Automation (NCRA). Thanks to invited speakers from industry, authors and sponsors for strongly supporting the conference. I also take this opportunity to pay my sincere gratitude to the Chief Guest and Guest of Honor of Inaugural & Closing sessions for sparing their valuable time for this event. My sincere gratitude are to Engr. Prof. Dr. Sarosh Hashmat Lodi, Vice Chancellor, NEDUET, Engr. Prof. Dr. S.F.A. Rafeeqi, Immediate Past Chairman, IEP, Karachi Centre and Engr. Ayaz Mirza, Immediate Past Secretary, IEP, Karachi Centre for their guidance & help in organizing IEEC-2019.

Finally, I would like to welcome each one of the participant and hope that they will find IEEC-2019 not only useful in enhancing their technical knowledge but also to be forum to meet many highly respected engineers under one roof for effective interaction in future.

Engr. Sohail Bashir, FIE (Pak)
Chairman IEP, Karachi Centre
& Chief Organizer, 4th IEEC-2019

MESSAGE



VICE-CHANCELLOR **NED University of** **Engineering & Technology**

I am very delighted to see overwhelming response of researchers and other stakeholders from all over the world in this 4th Annual IEEC event. We had started this series of events in 2016, and since then, we are witnessing increasing response of academia and industry in each successive event of this series.

One of the greatest resources for progress of any nation is "knowledge", and it is responsibility of every citizen to be the part of knowledge sharing process. Events like IEEC-2019 are not only opportunities for researchers to present their ideas but also opportunities to brainstorm the solutions to global challenges. Collaboration of IEP and NED University of Engineering & Technology shows the mutual trust and commitment between academia and industry, which is essential for tomorrow's better world.

Clean energy is the need of hour for greener and better future of the world. Integration of renewable energy resources with traditional fossil fuel based plants is one of the major targets of global development. However, this integration is also a great global challenge that requires attention of research community and industry experts. Despite Pakistan's development in energy sector in past few years, we still require addressing our reliance on fossil fuels by embracing more eco-friendly technologies, such as, solar and wind power. This IEEC-2019 is one of the best opportunities for researchers, industry experts, and government regulators to get together and address these important emerging challenges.

To conclude, I would like to congratulate organizing team of the IEEC-2019 for their efforts and making this event possible. I wish them good luck.

Engr. Prof. Dr. Sarosh H. Lodi

Vice Chancellor,
NED University of Engineering and Technology, Karachi

MESSAGE



SECRETARY GENERAL The Institution of Engineers Pakistan



It gives me immense pleasure to share that The Institution of Engineers Pakistan Karachi Centre (IEP) and NED University of Engineering and Technology Karachi are holding 4th International Electrical Engineering Conference on 25th & 26th January, 2019 at IEP Convention Center, Karachi in collaboration with two International organizations and Seventeen prestigious national academic institutions.

The Institution of Engineers Pakistan (IEP) is the premier body of Engineers in Pakistan and has made significant contributions to the development of the country. The role played by the IEP in dissemination of the knowledge is highly commendable. Recent advancements in Science and Technology have placed enormous resources at our disposal which must be harnessed for the welfare of humanity. Pakistan possesses vast natural resources and it is the duty of our scientists and engineers to utilize these resources for the welfare of the society and eradication of disease, ignorance, poverty and hunger.

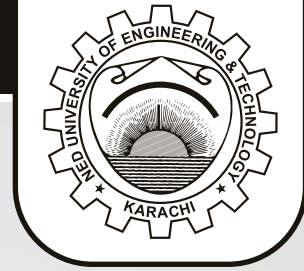
I am sure the 4th International Electrical Engineering Conference on **Aspiring Pathways in Electrical Engineering** being attended by engineers from abroad and all over Pakistan will provide an excellent opportunity to the participants to benefit from the experiences of one another and to find solutions to our current national problems.

I wish the Institution of Engineers Pakistan Karachi Centre and Participants of the Conference all the success.

Engr. Mian Sultan Mahmood

Secretary General
The Institution of Engineers, Pakistan

MESSAGE



DEAN **NED University of** **Engineering & Technology**

It is a pleasure for me welcoming you to IEEC-2019. IEP and NED University of Engineering & Technology deserves appreciation for their efforts in bringing academia and industrial experts together for sharing experience and knowledge. Platforms such as IEEC are crucial in today's world for the key to success in these times is collaboration. The world nowadays is facing global challenges, therefore it is our responsibility to solve these problems together.

At ASPIRE-2019, I hope the participants will be able to identify the challenges and also devise methods to start collaborated approaches for solving technological and policy problems. It is heartening to note the industrial participation in the conference which is a good sign for an otherwise lacking academic-industry linkages.

I wish all the authors, presenters and delegates a successful gathering.

Engr. Prof. Dr. Saad A. Qazi

Dean

Faculty of Electrical & Computer Engineering
NED University of Engineering & Technology
& Convener 4th IEEC-2019



MESSAGE



SECRETARY

**The Institution of Engineers Pakistan
Karachi Centre**



The Institution of Engineers Pakistan is playing a vital role in the Development of the Nation since its inception within the periphery of its approved aims and objectives, mostly revolving around the promotion and advancement of the practice and application of principles of Engineering, through its nine Centers spread across Pakistan and four overseas Centers. Upholding its traditions, the 4th International Electrical Engineering Conference is being hosted by IEP-Karachi Centre this year. The Conference shall explore the latest technological development in the field of Electrical Engineering and would broaden the vision of the participants.

On behalf of the Institution of Engineers Pakistan, Karachi Centre and the Organizing Committee, I would like to express my sincere appreciation for all participants, both from academia and industry, who played their role through contributions to the Conference and through their participation. Infact, all the members of the Technical Program Committee worked extremely hard to make this event happen. I have no doubt whatsoever that without their cooperation and their significant role and support, this event would not have been possible, appreciation for them, therefore, is to be recorded. Special thanks also go to the keynote speakers, invited speakers, and authors, for strongly supporting the Conference, while there are no words to thank the Chief Guest/Guest of Honor who have spared their valuable time for this important event.

Finally, I welcome each participant and hope that they will find the 4th International Electrical Engineering Conference not only useful in many respects but also to be a good opportunity to meet people and connect positively through networking in available time slots.

Once again my thanks to all and I wish the organizers, every success.

Engr. M. Farooq Arbi, FIE(Pak)

Secretary,
The Institution of Engineers Pakistan, Karachi Centre

MESSAGE



CHANCELLOR

Hamdard University

PRESIDENT

Hamdard Foundation Pakistan

It is a matter of great satisfaction that not only is the 4th Electrical Engineering Conference being organized by the Institution of Engineers Pakistan in partnership with the NED University of Engineering and Technology, but that this year the number of collaborating partners has grown even more.

This is a sure sign of success!

The theme once again is 'Aspiring Pathways in Electrical Engineering' and is dubbed 'ASPIRE-2019' And truly it is an attempt to channel the aspirations and talents of both engineers and engineers-in-the making, down the pathways leading from theory to practice. For Engineering is not an abstract study, but one which aims at action- improved action! And action aimed at improvement.

Given the assumption that 'Two heads are better than one' (always also assuming that the heads concerned have something worthwhile in them!), such a conference can only be useful, since it allows for an exchange of ideas and a new learning experience. Such a pooling of knowledge can lead to solutions for heretofore insoluble problems. But- for this result, minds as well as ears need to be open.

I pray that all participants- speakers as well as listeners- approach this exercise with this quality and attitude. Inshallah, the result will be progress.

Sadia Rashid

Chancellor, Hamdard University,
President, Hamdard Foundation Pakistan

MESSAGE



VICE CHANCELLOR

**Balochistan University of IT, Engineering
and Management Sciences (BUITEMS)**



It is a matter of honor for me to be a part of the fourth International Electrical Engineering Conference (IEEC-2019). The conference series has provided an ideal platform for a fruitful exchange of information, fostering key dialogue and research collaborations among stakeholders including academia, industry and the government. This year's conference theme "Aspiring Pathways in Electrical Engineering (ASPIRE-2019)" is highly relevant to modern day technological problems, and advancements within the domains of electrical engineering, promoting inter-disciplinary cross-cutting technological breakthroughs in electrical power systems, renewable energy, bioinformatics, embedded systems, and smart grids. The IEEC-2019 is being organized to share progress and varied futuristic technological advancements in the vital arena of engineering.

I sincerely appreciate the efforts of the entire organizing team in making this conference possible, and acknowledge the efforts of the Federation of Engineering Institutions of Islamic Countries, Federation of Engineering Institutions of South & Central Asia, Balochistan University of Engineering & Technology, Khuzdar, Dawood University of Engineering & Technology, DHA Suffa University, Bahria University, National University of Computer and Emerging Technology, Hamdard University, Iqra University, Institute of Industrial Electronics Engineers, PAF Karachi Institute of Economics & Technology, Muhammad Ali Jinnah University, Pakistan Navy Engineering College, Sir Syed University of Engineering & Technology, Usman Institute of Technology, IEEE Power & Energy Society, Pakistan Chapter, The Institution of Engineering and Technology, Karachi Chapter, and BUITEMS, Quetta in jointly making this conference a success.

On behalf of BUITEMS, I would like to extend my warm wishes to all the delegates and participants.

With best wishes,

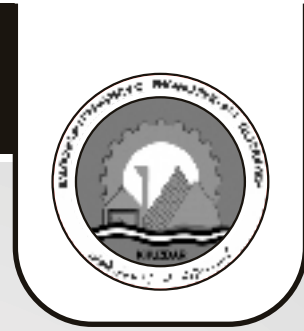
Engr. Ahmed Farooq Bazai (S.I)

Vice Chancellor
Balochistan University of IT, Engineering
and Management Sciences (BUITEMS)

MESSAGE



VICE CHANCELLOR **Balochistan UET Khuzdar**



I am delighted to have the opportunity to share a few thoughts at the time of fourth International Electrical Engineering Conference (IEEC-2019). It is a great initiative taken by Institute of Engineers Pakistan (IEP) and NED University of Engineering and Technology Karachi along with other partners including Balochistan University of Engineering and Technology Khuzdar. In this era of technological advancements, it is necessary that research work carried out is recognized and propagated properly. The fourth edition of the conference itself is an indicator of the quality and credibility of the Conference Internationally. The topics included in the conference are not only most relevant in the field of Electrical Engineering and allied disciplines globally but also relevant in terms of importance of application in Pakistan.

I firmly believe that this conference will open a new era of research not only in established areas of Electrical Engineering but also will serve as a guideline for researchers towards being more innovative.

I warmly congratulate the organizers of the conference for holding such a high quality International Conference and assure them that Balochistan UET Khuzdar will continue to collaborate in such future endeavours as well.

Engr. Prof. Dr. Ehsanullah Khan
Vice Chancellor
Balochistan UET Khuzdar

MESSAGE



VICE CHANCELLOR **DHA Suffa University**



It is indeed heartening to know of the remarkable contributions that the 'Institution of Engineers – Pakistan (IEP)' is making towards the uplift and growth of Pakistan's Engineering sector. In the wake of a rapidly evolving technological landscape, knowledge and infrastructure sharing as well as collaborative and cross-disciplinary research between universities have become vitally important for a free exchange of ideas.

It is imperative for higher education institutions to have a research focus and adopt an outward looking approach, ever willing to contribute their knowledge and expertise to joint projects and conferences involving multiple stakeholders from academia and industry.

I feel assured that the 4th International Electrical Engineering Conference (IEEC-2019), being jointly hosted by IEP and NED University of Engineering and Technology, shall aptly serve this purpose by bringing together the Electrical Engineering fraternity from Pakistan's prominent universities on one platform.

Rear Adm (R)
Engr. Prof. Dr. Sarfraz Hussain TI(M), SI(M)
Vice Chancellor
DHA Suffa University

MESSAGE



VICE CHANCELLOR

**Sir Syed University of
Engineering and Technology**



I am delighted to know that the Institution of Engineers Pakistan (IEP) is organizing the 4th International Electrical Engineering Conference on 25th & 26th January, 2019 at Karachi in collaboration with several other institutions. This year the theme of the Conference is "Aspiring Pathways in Electrical Engineering (ASPIRE-2019)" under which very vital topics will be discussed like: Electricity Power Systems & Policies; Renewable Energy Technologies; Controls, Robotics and Automation; Signal, Image and Speed Processing; IoT, Big Data & Artificial Intelligence; Embedded Systems; Electronics and Applications; Information & Communication Technologies; Computer Systems & Networks.

Experts on the subject will dilate upon various options - power engineering, electronic engineering, telecommunications engineering, computer engineering etc all of which impinge upon our daily lives. The theme of the Conference has special ramifications as far as education of electrical engineering is concerned. Each year IEP comes up with a new theme for discussion which is of great value to the students, researchers and professionals involved with such themes. Therefore, the efforts of IEP must be highly commended for providing such a useful platform.

While on the subject, I would like to reiterate the special significance these days on artificial intelligence, Internet of Things, cloud computing, block-chain, big data & robotics aiming at revolutionizing the education, research and business by adopting the latest cutting edge technologies and at the same time it is good to learn that the Conference will also be focusing on these topics in their deliberations. Therefore, I am sure the experts at the Conference will come up with some doable, pragmatic and cost-effective solutions while addressing these topics.

I wish the conference a tremendous success and extend my felicitations to its organizers and sponsors for their valuable contribution to conduct such useful events every year to address the very vital issues focusing ultimately on national development.

Engr. Prof. Dr. Muhammad Afzal Haque

Vice Chancellor,

Sir Syed University of Engineering and Technology, Karachi

MESSAGE



PRESIDENT PAF - KIET

I congratulate NED University and Institute of Engineers Pakistan (IEP) on jointly organizing the fourth International Electrical Engineering Conference (4rd IEEC-2019) with technical collaboration with all accredited engineering institutes of Karachi including PAF-KIET.

The theme of the conference this year Aspiring Pathways In Electrical Engineering (ASPIRE-2019) is the need of the day to overcome the national challenges faced in the technical sectors due to lack of synergy between the academic, research and industrial circles in the broad field of Electrical Engineering and Information and Communications Technologies (ICT). This conference will allow participants to contribute further in the field of Research and Development.

The 4rd IEEC conference will serve as an ideal nurturing platform for students, academicians, researchers and representatives from industry to mingle with each other in an exceptionally cordial environment for the exchange of information, research ideas and promotion of collaborative Research and Development culture for finding timely solutions to the current problems. The conference featuring technical paper presentations, final year project symposium, panel discussions and keynote speeches by eminent national and international scientists and leading industry personnel would indeed prove to be a very effective forum for progress in a city like Karachi, which is a hub for education and learning in South Asia and Muslim world.

I sincerely hope that IEEC will forge strong ties between academic and industry to not only allow for finding indigenous solutions to our national problems but also help our country reap the benefits of a knowledge based economy.

I appreciate the initiative by NED University and IEB to include all stake holders in academia and industry by taking them on board as technical partners and co-organizers. I wish success to NED, IEP and all technical participating engineering universities of Karachi in their collaborative efforts and that IEEC conference continues to grow in stature and repute with each passing year.

Air Vice Marshal (R) Tubrez Asif HI(M)
President, PAF - KIET

MESSAGE



DIRECTOR GENERAL

**Bahria University, (BUKC)
Karachi Campus**

It is a matter of great pleasure for me to learn that Institute of Engineers Pakistan (IEP), NED University of Engineering and Technology, Bahria University Karachi Campus in collaboration with various reputed institutions and organizations are organizing jointly 4th International Electrical Engineering Conference 2019 (IEEC-2019) on 25th and 26th January 2019.

In my view, the theme of this year's conference i.e. "ASpiring Pathways In ElectRical Engineering (ASPIRE - 2019)" is of paramount importance keeping in view the ongoing technological advancements around the globe. There is no doubt that rapid technological innovations are having a major impact on our professional and personal undertaking.

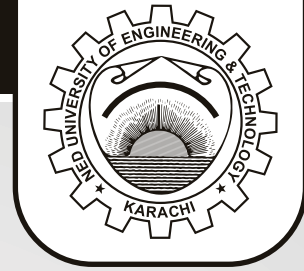
I am certain that this conference will provide an opportunity to all the participating researchers to interact with each other and discuss on their ideas related to electrical engineering. The deliberation during the conference will enable the participants to play an important role in strengthening the future of electrical engineering and its sources to the society. In addition, the participants of the conference will have a chance to hear from renowned experts of the field.

Bahria University on its part is playing a vital role in promoting research and development related activities since its inception. We have been successful in creating remarkable benchmark of excellence in the field of professional and technical education. I sincerely hope that this conference would prove to be outstanding one amongst the many conferences being conducted regularly in this institute. I am sure that this conference would certainly induce innovative ideas among the participants paving way for new avenues of research in multiple disciplines of electrical engineering fields.

I extend my warm greetings and felicitations to the organizers and the participants of the conference. I hope and desire that 4th IEEC 2019 achieves success, meets objectives and enjoyed by all the participants.

Rear Admiral (R) Mukhtar Khan HI (M)
Director General Karachi Campus

MESSAGE



PRO-VICE-CHANCELLOR

**NED University of
Engineering & Technology**

It gives me immense pleasure that IEP and NED University of Engineering & Technology are conducting 4th International Electrical Engineering Conference (IEEC-2019). The IEP and NED University have always promoted these platforms where experts of various domains interact and share their knowledge and experience. Collaboration at various levels the need of hour for solution to current challenges. A single institute can never solve vast variety of challenges faced by the society.

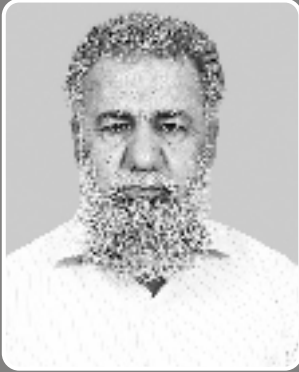
This conference is a great opportunity for engineering professionals to sit together and brainstorm ideas for solving regional and global issues. IEEC 2019 encompass wide spectrum of Electrical Engineering domain, which includes Electrical Power Systems and Policies, Renewable Energy Technology, Controls, Robotics, Automation Signal Processing, IoT, Big Data, Artificial Intelligence, Embedded Systems, Information and Communication Technologies, Computer Systems and Networks, etc. This conference provides a platform for all professionals to learn from each other.

IEP and NED University deserves a great applause for bringing academia, industry experts, and other stakeholders from all over the world to address common challenges. I congratulate all office bearers, and organizers of the conference for organizing such a wonderful event and I wish them great success.

Engr. Prof. Dr. Muhammad Tufail

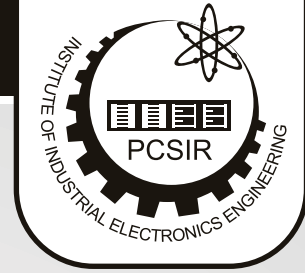
Pro Vice Chancellor and
Dean (Faculty of Mechanical & Manufacturing Engineering)
NED University of Engineering & Technology

MESSAGE



PRINCIPAL

**Institute of Industrial
Electronics Engineering**



It is a matter of great pleasure that Institute of Engineers, Pakistan (IEP) and NED University are organizing **International Electrical Engineering Conferences (IEEC)** with constancy since last three years, with great passion and devotion.

The 4th IEEC, 2019 with the theme “Aspiring Pathways in Electrical Engineering” would open new pathways for the interaction of researchers, engineers, academicians; and scholars across the board.

Institute of Industrial Electronics Engineering (IIEE), PCSIR, is privileged for being a part of IEEC 2019 as technical collaborator. I pledge full participation and corporation of IIEE in promoting research culture among faculty and young professionals for the development of prosperous and sustainable Pakistan.

I convey my sincere wishes to the Organizing, Managing and Technical Committees of the event for all success in their efforts in arranging this series of conferences with excellence.

Engr. Ashab Mirza

Principal

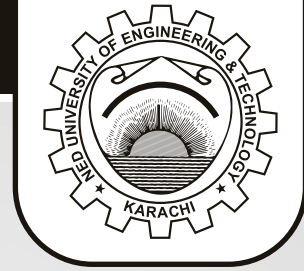
Institute of Industrial Electronics Engineering

MESSAGE



CHAIRMAN

**Department of Electrical Engineering
NEDUET & Co-Convener, 4th IEEC-2019**



Today's world is witnessing amazing technological advancements. Pakistan has initiated various huge projects including CPEC, which will be milestone for entering the world of "Innovation and Knowledge Economy". This conference is an excellent effort for professional networking, knowledge sharing and timely needed technical interactions.

This conference is also providing a platform to undergraduate students for display of Final Year Projects, which will facilitate them to initiate the new start ups and be the "Entrepreneurs". I highly appreciate efforts of IEP officials for their tireless efforts to arrange this conference.

Engr. Prof. Dr. Muhammad Ali Memon

Chairman, Department of Electrical Engineering
NED University of Engineering & Technology, Karachi
& Co-Convener 4th IEEC-2019



MESSAGE



VICE-CHAIRMAN (Electrical) **The Institution of Engineers Pakistan** **Karachi Centre**



The Institution of Engineers Pakistan is playing a vital role in the Development of Engineering Profession since its inception within the parameter of its approved aims and objectives, for the promotion and advancement of the practice and application of principles of Engineering, spread across Pakistan. As per its traditions, IEP, Karachi Centre is organizing the 4th International Electrical Engineering Conference this year in collaboration with NEDUET. The conference shall focus on latest Technological Development in the field of Electrical Engineering not only to disseminate knowledge but will also broaden the vision of the participants, which led them to explore the new frontiers.

As Vice-Chairman (Electrical) of the Institution of Engineers Pakistan, Karachi Centre and the 4th IEEC-2019 Organizing Committee, I would like to express my sincere appreciation for all participants, through contributions to the conference and through their extremely hard work to make this event happen, this event would not have been possible, special thanks also go to the keynote speakers, invited speakers and authors.

I wish the organizers, of this conference every success and hope this will become a regular event in future as well.

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PROGRAMME

4th International Electrical Engineering Conference



The Institution of Engineers Pakistan

Karachi Centre

in collaboration with

NED University of Engineering & Technology



PROGRAMME

Day 1 - Friday 25th January, 2019

INAUGURAL SESSION

03:30 - 04:00 pm	Registration
04:00 pm	Recitation from the Holy Quran
04:05 pm	National Anthem
04:10 - 04:20 pm	Conference briefing by Engr. Prof. Dr. Saad Ahmed Qazi, Dean, Electrical & Computer Engineering, NEDUET and Convener, 4th IEEC-2019
04:20 - 04:30 pm	Welcome Address by Engr. Sohail Bashir, Chairman, IEP, Karachi Centre & Chief Organizer, 4th IEEC-2019
04:30 - 05:15 pm	Key Note Address by Prof. Ir. Dr. Hazlie Mokhlis Deputy Dean (Postgraduate Studies), Faculty of Engineering, University of Malaya, Malaysia
05:15 - 05:30 pm	Break for Asr Prayer
05:30 - 05:35 pm	Address by Engr. Prof. Dr. Sarosh Hashmat Lodi, Vice-Chancellor, NEDUET
05:35 - 05:40 pm	Address by Guest of Honor Engr. Amer Zia, Chief of Distribution, K-Electric Limited
05:40 - 05:45 pm	Address by Chief Guest Engr. Asad S. Jafar, Chairman & CEO, PHILIPS Pakistan Limited
05:45-05:50pm	Presentation of Conference Memento
05:50-05:55 pm	Vote of Thanks by Engr. Prof. Dr. Muhammad Ali Memon Chairman, Department of Electrical Engineering & Co-Convener, 4th IEEC-2019
05:55-06:10 pm	Networking
06:12 - 6:45 pm	Break for Maghrib Prayer
06:45 pm	Conference Dinner

Power System Resilience and Research Opportunities from Distribution Perspective By Prof. Ir. Dr Hazlie Mokhlis

The high number of extreme weather conditions in the recent years had caused significant problems not only to human daily life but also security and economic of a nation. Among important nation's infrastructure affected during extreme weather conditions is electrical power supply. Extreme weathers such as flood, hurricane and earthquake are common disasters that damage power system infrastructures. During this disaster, electrical power cannot be supplied effectively or in a worst scenario causing major power outage. Not only domestic customers will be affected but also other nation's critical infrastructure such health, gas, water supplies, transportation and communication system could be jeopardized. This can lead to a huge problem to the whole nation and human life during disaster events. Therefore, it is necessary to ensure power system is highly resilience so that able to supply electrical power during extreme weather condition. One of the possible approaches is to improve power system resilience at the distribution level. This talk will provide overview on the concept of resilience, its importance and improvement in power system. Research area to improve resilience from the perspective of distribution system will also be presented and discussed. These including microgrid, load shedding and network reconfiguration.

PROGRAMME

4th International Electrical Engineering Conference



The Institution of Engineers Pakistan

Karachi Centre

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PROGRAMME

Day 2 - Saturday 26th January, 2019

TECHNICAL SESSION

09:30 am - 11:10 am	Technical Session -1 (Convention Center)	01:10 pm - 2:00 pm	Break for Zohar Prayer / Lunch
11:10 am - 11:30 am	Tea Break	02:00 pm - 03:40 pm	Technical Session-4 (Convention Center)
11:30 am - 01:10 pm	Technical Session-2 (Convention Center)		Technical Session-5 (Dr.S.A.Hasan Hall)
	Technical Session-3 (Dr.S.A.Hasan Hall)	03:50 pm - 5:30 pm	Closing Ceremony

CLOSING SESSION

Saturday 26th January, 2019

03:40-03:50 pm	Networking
03:50-03:55 pm	Guest to be seated
03:55 pm	Recitation from the Holy Quran
04:00 pm	Conference Highlights by Engr. Mohammad Ali Baig, Programme Secretary, 4th IEEC-2019
04:05 pm	Address by Engr. Sohail Bashir, Chairman, IEP, Karachi Centre & Chief Organizer, 4th IEEC-2019
04:05-04:45 pm	Keynote address by Engr. Dr. Umar Shahbaz Khan, Project Director, National Center of Robotics and Automation (NCRA), Head of Department of Mechatronics Engineering- NUST, College of E&ME-Rawalpindi
04:45 pm	Address by Guest of Honor Engr. Prof. Dr. Ehsanullah Khan, Vice Chancellor, Balochistan UET, Khuzdar
04:50 pm	Address by Chief Guest Rear Admiral (R) Engr. Prof. Dr. Sarfraz Hussain TI(M), SI(M) Vice Chancellor, DHA Suffa University
04:55 pm	Presentation of Chairman Medal for Best Paper
05:00 pm	Concluding Remarks by Engr. Dr. Riazuddin Deputy Chief Organizer, 4th IEEC-2019
05:05 pm	Presentation of Conference Mementos
05:10 pm	Vote of Thanks by Engr. Tafseer Ahmed Khan, Vice-Chairman (Electrical) IEP, Karachi Centre
05:15-05:30 pm	Break for Asr Prayer
05:30 pm	Hi-Tea

The Era of Robotic and Automation in Pakistan The National Center of Robotics and Automation (NCRA) an Overview by Engr. Dr. Umar Shahbaz Khan

The global market for robotics is expected to reach \$66.9 billion by 2025. The world is advancing at a very fast pace within this domain, with USA and Japan being in the lead and having a combined share of more than 50% in the Robot-Stocks-Listed companies. This field is vast ranging from industrial grade automation and robotics systems to micro and nano robotics. Pakistan still has a long way to go in order to get recognized with the giants. In 2018 the Government of Pakistan has taken its first initiative towards this technologically advanced field by establishing the National Center of Robotics and Automation (NCRA). This center is a consortia of 11 labs spread over 13 universities with NUST in the lead role. Through this center Pakistan aims to achieve indigenized solutions, specialized HR and the required skill set to emerge as a developing nation with substantial contribution towards robotics and automation.

PROGRAMME

4th International Electrical Engineering Conference



The Institution of Engineers Pakistan

Karachi Centre

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PROGRAMME

PROGRAM SCHEDULE FOR ORAL SESSIONS ASPIRE-2019 DAY II		
Technical Session-I Signal Processing and Applications		
Convention Center		
Session Chairs: Dr. Ghazanfar Monir (MAJU), Dr. Haroon Rasheed(BUKC), Engr. Gulzar Ahmed Memon, IEP		
Time:	Paper ID:	Title and Presenters
09:30-09:50	Invited Talk	Kashif Iqbal Ghazi
09:55-10:15	IEEC-2019-03	<i>A Chaos Based Non-Blind Digital Image Watermarking in Wavelet Transform Domain</i> Munazah Jamal, Saira Mudassar and Hamza bin Tahir
10:20-10:40	IEEC-2019-10	<i>Vision based multiple Robots Autonomus navigatoin system using local Sensors</i> Sufyan Raza, Arsalan Qaisar, Hunain Nasir, Faizan Ellahi, Asif memon & Agha Shakir
10:40-11:10	IEEC-2019-17	<i>Modeling and simulation of robotic finger using gear train mechanism</i> Nomia Nouman, Saifullah Samo and Tanweer Hussain
11:10-11:15		Certificate Distribution
Technical Session-II Artificial Intelligence		
Convention Center		
Session Chairs: Dr. Muhammad Ibrar UI Haque (SSUET), Dr. Sameer Qazi(PAF-KIET), Obaid ur Rahman Khan Kamal Zai,IEP		
Time:	Paper ID:	Paper Details
11:30-11:50	Invited Talk	Engineering Entrepreneurship Rizwan Ali
11:55-12:15	IEEC-2019-32	<i>Stock market prediction with the integration of daily news sentiments using Long Short Term Memory in Artificial Neural Network with the ensemble approach</i> Zain UI Mustafa, Arish Yaseen, Hassan Naeem, Maria Aftab,
12:20-12:40	IEEC-2019-21	<i>Hand Motion Recognition from EMG using Artificial Neural Network</i> Habiba Aziz, Mohsin Khan, Sajid Hussain and Farah Haroon
12:45-13:05	IEEC-2019-42	<i>Emotion Enabled Cognitive Driver</i> Muhammad Kabeer, Faisal Riaz, Muhammad Atif Butt, Rehana Khatoon, Hajira Saleem, Yasir Mehmood, Kamran Hameed
13:05-13:10		Certificate Distribution
Technical Session-III Electrical Power Systems		
Dr. S. A. Hassan Hall		
Session Chairs: Dr. Muhammad Mohsin Aman (NED), Dr. Talat Altaf (SSUET), Engr. Syed Aner Ali, IEP		
Time:	Paper ID:	Paper Details
11:30-11:50	Invited Talk	<i>Introduction to Hazardous Area & IECEx based upon IEC 60079 Series of International Standards</i> Asif Mirza
11:55-12:15	IEEC-2019-23	<i>Contingency Analysis of K-Electric EHT Network Using ETAP, Loss Calculation, and Improvement Plan</i> Mehak Kanwal, Anqa-Min-Allah Jawed, Umer Khayam, Muhammad Ibrar-ul-Haque, Shakil Ahmed Khan
12:20-12:40	IEEC-2019-16	<i>Net Zero Energy Buildings and Their Designing Characteristics- A Review</i> Malaika Ramzan, Beenish Sultana, Syeda Minhal Bukhari, Urooj Abid
12:45-13:05	IEEC-2019-34	<i>Optimal Placement of DSTATCOM in Radial Distribution System - A Case Study</i> Hafeez-Ur-Rehman, Rizwan Ali, Muhammad Usman, Hafiza Zoha Khan, and Tahir Mahmood
13:05-13:10		Certificate Distribution

PROGRAMME

4th International Electrical Engineering Conference



The Institution of Engineers Pakistan

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PROGRAMME

Technical Session-IV Electrical Power & Power Electronics Systems		
Dr. S. A. Hassan Hall		
Session Chairs: Dr. Faisal Khan (Hamdard), Dr. Kashif Ishaque (MAJU), Engr. Tafseer Ahmed Khan, IEP		
Time:	Paper ID:	Paper Details
14:00-14:30	Invited Talk	Dr. Naila Zareen
14:35-15:05	IEEC-2019-11	<i>Design of High-Power Isolated Boost DC-DC Converter for Renewable Energy Applications</i> M. Talha, B. Shakil and I. A. Makda
15:10-15:40	IEEC-2019-46	<i>Performance Enhancement of an Overloaded Distribution Network with the Penetration of Solar PV Distributed Generation</i> Nouman Ali, M. Hasan, Jadeed Gul, Anis Ur Rehman, Rasheed Khan
15:45-15:50	Certificate Distribution	
Technical Session V (Control Systems and Robotics)		
Convention Center		
Session Chairs: Dr. Hussain Pervez (PAF-KIET), Dr. Farah Haroon (IIEE), Engr. Syed Sarfraz Ali, IEP		
Time:	Paper ID:	Paper Details
14:00-14:30	Invited Talk	Manufacturing of white coal using sugarcane bagasse Dr. Abid Karim
14:35-15:05	IEEC-2019-31	<i>Dynamic Self Stabilizing Mobile Platform</i> Mohammad Mahad Nadeem, Sumair Ullah Khan and Danial Mazhar
15:10-15:40	IEEC-2019-41	<i>Towards Design and Development of Post Elbow Surgery Rehabilitation Evaluator</i> Tayyab Ansari and Tariq Javid
15:45-15:50	Certificate Distribution	

IEEC-2019 - Session No. 1

Session Name **Signal Processing and Applications**

A CHAOS BASED NON-BLIND DIGITAL IMAGE WATER MARKING IN WAVELET TRANSFORM DOMAIN

Munazah Jamal, Saira Mudassar and Hamza bin Tahir,

Department of Computer Sciences, National College of Business Administration and Economics,
Multan, 60700, Pakistan

Digital Image Watermarking is used to protect images from illegitimate access. Two techniques are merged to enhance the imperceptibility of the image i.e. Singular Value Decomposition (SVD) and Redundant Discrete Wavelet Transform (RDWT) and in YCbCr color space by creating different chaos in the watermark image. This technique can help to embed more number of watermark bits in the colored host image to enhance the safety and robustness of the watermarks. The embedding capacity was increased by using the idea of watermark in watermark. Hence, the security was increased by embedding the encrypted watermarks in the host image. This results in an additional level of security for watermarking. For instance, if the attacker hacked the watermarked image, still he will not be able to identify the watermark because it is encrypted using chaotic map and hence the ownership remained secure. The proposed technique was tested in contradiction of multiple geometrical attacks (median filtering, noise addition, cropping etc.) and hence resulted in the better extraction of the watermark. The increase in performance can be evaluated using results of multiple parameters i.e. Mean Square Error (MSE), Peak Signal-to-noise Ratio (PSNR), Normalized Correlation (NC) and Root Mean Square Error (RMSE).

IEEC-2019 - Session No. 1

Session Name **Signal Processing and Applications**

VISION BASED MULTIPLE ROBOTS AUTONOMOUS NAVIGATION SYSTEM USING LOCAL SENSORS

Sufyan Raza, Arsalan Qaisar, Hunain Nasir, Faizan Ellahi, Asif Memon & Agha Shakir,

Institute of Industrial Electronics Engineering (IIEE)

The objective of this research is to develop an overall fast, robust, consummate, & multiple robot autonomous navigation system, that is capable of selecting the nearest robot based on the destination, for it to traverse from its current node to the final, without any human interaction. This paper presents the approach utilizing computer vision method, which includes a top mounted camera capturing the overall environment, that the processor uses for the tag based localization and static mapping, afterwards planning an obstacle free path using adapted A-star algorithm of 4 adjacent nodes expansion, and eventually utilizing encoder motors, gyro sensor, & discrete camera feedback to ensure precise tracking. The obtained results were within minimal errors and could be further processed using either image stitching, for wide industrial area coverage, or it could be exploited by some dynamic robotic application.

IEEC-2019 - Session No. 1

Session Name **Signal Processing and Applications**

MODELING AND SIMULATION OF ROBOTIC FINGER USING GEAR TRAIN MECHANISM

Nomia Nouman, Saifullah Samo and Tanweer Hussain

Department of Mechanical Engineering, Mehran University of
Engineering and Technology, Jamshoro, 76020, Pakistan

In this research paper, a mechanism of an anthropomorphic robotic finger is being developed. The developed finger with proposed mechanism can mimic the motion of human finger as each joint can be controlled individually. The proposed mechanism has 3 degrees of freedom, which is based on gear mechanism. The gears are operated by a single servo motor and joints are controlled by solenoid pins. The presence of motor in the palm helps in reducing the total weight of the finger. The gear mechanism adds up to the dexterity of the finger. The engaging mechanism (linear solenoid) ensures the required movements of the joints of the finger. The locking mechanism holds and keeps the finger intact at a position. The equations were mathematically modelled and the CAD model of the finger is developed. The robotic finger is simulated for various positions using the CAD design in Creo and the simulations are verified by the MATLAB. The robotic finger of the suggested design can conveniently be used at 'pinch points' of an industry to carry out intricate operations while ensuring safety of the workers.

IEEC-2019 - Session No. 2

Session Name **Artificial Intelligence**

STOCK MARKET PREDICTION WITH THE INTEGRATION OF DAILY NEWS SENTIMENTS USING LONG SHORT TERM MEMORY IN ARTIFICIAL NEURAL NETWORK WITH THE ENSEMBLE APPROACH

Zain Ul Mustafa, Arish Yaseen, Hassan Naeem, Maria Aftab,

Department of Electrical Engineering, National University of Sciences and Technology, Karachi,

This paper explains the use of Supervised Artificial Neural Network and proves it to be massively powerful in determining the daily trend in the financial market. Several back-propagation feed-forward neural networks using multiple techniques are mentioned in many studies for prediction over a certain range of time. This study, however, focuses on day to day prediction of stock data using data from the preceding day. As this is a time-series problem, the Recurrent Neural Network with Long Short Term Memory is taken into consideration and sentiment of news is calculated using natural language processing. The results produced using ANN LSTM and ANN LSTM ensemble are also compared. All the results produced in this study are carried out using Python 3 programming language whose code is made open-source.

IEEC-2019 - Session No. 2

Session Name **Artificial Intelligence**

HAND MOTION RECOGNITION FROM EMG USING ARTIFICIAL NEURAL NETWORK

Habiba Aziz, Mohsin Khan, Sajid Hussain and Farah Haroon

Institute of Industrial Electronics Engineering, Karachi

Hand motion recognition has become an active research due to its numerous applications such as its use in human-computer interface. The motivation for this work is to help the disabled people by improving their quality of life. This paper aims to recognize and replicate four hand gestures fist, spread, wave in, and wave out on 3D printed prosthetic hand. Electromyography (EMG) signals are recorded for these gestures using Myo armband consisting of eight electrodes from which five statistical parameters of EMG signals are extracted and employed for classification. These parameters for each electrode accumulate to form feature vector inserted to Artificial Neural Network (ANN) which classifies it into its target classes (gestures). The performance of ANN classifier is assessed over Scaled Conjugate Gradient (SCG) in comparison of different algorithms. Our simulation results are also supported with experimental results run over 3D printed prosthetic hand.

IEEC-2019 - Session No. 2

Session Name **Artificial Intelligence**

EMOTION ENABLED COGNITIVE DRIVER

**Muhammad Kabeer, Faisal Riaz, Muhammad Atif Butt, Rehana Khatoon,
Hajira Saleem, Yasir Mehmood, Kamran Hameed,**

Control Automotive and Robotic Lab, Department of CS & IT, Mirpur
University of Sciences and Technology, Mirpur AJK, Pakistan

A Smart Cognitive Driver has been implemented to overcome the human driving errors and utilizing Global Position System (GPS) for location detection of the vehicle. The proposed system has used cognitive agent for communication with a response time of one second. Additionally, the system shares the longitude and latitude after extracting it from the hardware to calculate the distance, speed and the direction of the vehicle, that are used in Stopping Sight Distance (SSD) formula which enable the system to decide its reaction to the situation. In the attempt to make the cognitive agent emotionally responsive to fear, different checks have been imposed on the system. Fear has been ranked on different levels (low, average and high). The cognitive agent responds immediately by applying brakes upon detecting the high fear condition

IEEC-2019 - Session No. 3

Session Name **Electrical Power Systems**

CONTINGENCY ANALYSIS OF K-ELECTRIC EHT NETWORK USING ETAP, LOSS CALCULATION, AND IMPROVEMENT PLAN

**Mehak Kanwal, Anqa-Min-Allah Jawed, Umer Khayam,
Muhammad Ibrar-ul-Haque, Shakil Ahmed Khan,**
Department of Electrical Engineering, Sir Syed University of
Engineering and Technology, Karachi, 75290, Pakistan

Different power system studies are required for stable and economic operation and future expansion of a power system. In this paper, includes the transmission Line loss reduction plan and Contingency analysis. The system is subjected to loss of electrical energy which leads to high financial losses per annum. Loss calculation serves as a prerequisite for power system planning. Contingency analysis is a technique to predict the effect of outages or failures of equipment and to make actions plans to keep the power system secure and reliable under contingency state. Load flow analysis serves as the basic step for loss calculation and Contingency analysis which can be performed using electrical simulation software, which in our case is ETAP (Electrical Transient Analysis Program) used for the simulation of the Extra high tension (EHT) i.e. 220KV, 132KV, 66KV network of the Power utility company K-Electric. Consequent upon results of studies improvement plan is proposed for reduction of K-Electric transmission losses and evaluating some N-1 (i.e. fault or failure of single equipment) contingency scenario and giving remedial action for selected cases. Strategies used in this paper are applicable for planning and performance improvement of any Power utility company

IEEC-2019 - Session No. 3

Session Name **Electrical Power Systems**

NET ZERO ENERGY BUILDINGS AND THEIR DESIGNING CHARACTERISTICS- A REVIEW

Malaika Ramzan, Beenish Sultana, Syeda Minhal Bukhari, Urooj Abid
Department of Electrical Engineering, NED University of Engineering and Technology,
Karachi, 75290, Pakistan

The paper aims to discuss Net Zero Energy Building (NZEB) as an effective solution to conserve energy and limit carbon emissions which are threat to our environment. It highlights the significance of various designing strategies of NZEB and analyzes the operational feasibility of these systems. Furthermore, numerous factors regarding the general characteristics of a NZEB's is surveyed including the selection of Renewable Energy Sources for on-site electrical generation, the Energy Storage Systems for generated surplus energy, and the building optimization techniques and recommendation of a feasible net zero energy network. Environment and climatic hindrances that may affect the design of a net zero energy building at the time of implementation is also examined. The idea to implement NZEB can provide tremendous opportunity for states to reduce their energy consumption and can simultaneously bring improvements in public health.

IEEC-2019 - Session No. 3

Session Name **Electrical Power Systems**

OPTIMAL PLACEMENT OF DSTATCOM IN RADIAL DISTRIBUTION SYSTEM - A CASE STUDY

Hafeez-Ur-Rehman, Rizwan Ali, Muhammad Usman, Hafiza Zoha Khan, and Tahir Mahmood,
Electrical Engineering Department, University of Engineering and Technology, Taxila, 47050, Pakistan

DSTATCOM is used to supply reactive power demand at the load end while maintaining the voltage level in acceptable range. This paper demonstrates an effective method to identify the suitable bus for DSTATCOM placement. The main objective is to improve voltage profile and minimize power loss in radial distribution network. The DSTATCOM is modelled to determine its rating by assuming voltage magnitude as 1p.u. at weaker bus. Also, this placement of DSTATCOM at optimal location is based on voltage stability index criteria. The effectiveness of this proposed method is tested on university 11kV feeder by performing load flow analysis before and after reactive power compensation using MATLAB. The obtained results are compared without and with DSTATCOM for all the load models. The voltage profile and power loss reduction are observed

IEEC-2019 - Session No. 4

Session Name **Electrical Power & Power Electronics Systems**

DESIGN OF HIGH-POWER ISOLATED BOOST DC-DC CONVERTER FOR RENEWABLE ENERGY APPLICATIONS

M. Talha, B. Shakil and I. A. Makda, Dhanani

School of Science and Engineering, Habib University

Energy efficient DC-DC converters are essential to utilize the maximum power generated from renewable energy sources. High frequency magnetic component, i.e. transformer and inductor contributes heavily to the poor conversion efficiency of any given DC-DC converter. In this paper, a novel design of high frequency magnetic components for isolated boost DC-DC converter is proposed. The core loss effects, copper losses, proximity effects and the leakage inductances of the magnetic components are also analyzed to ensure maximum efficiency. The theoretical analysis of the converter design is also done and a full bridge topology with a voltage doubler circuit is used to acquire maximum voltage gain.

Foil windings are used and an extensive interleaving is done for the primary and secondary winding in order to reduce the core losses and the leakage inductance of the transformer. The turn ratio of 1:4 is set in order to step-up the voltage level at the secondary side of the transformer. For inductor design, the core material, shape and size are finalized for the given converter specifications after thorough analysis and simulation tests. The efficiency of 96.4 percent of the converter is achieved with the chosen design specifications for the transformer and inductor. The high frequency magnetic transformer is implemented physically and it is observed that the measured result resonates with the theoretical results. Also, it has been concluded that the turns-ratio of the converter transformer have no impact on its leakage inductance

IEEC-2019 - Session No. 4

Session Name **Electrical Power & Power Electronics Systems**

PERFORMANCE ENHANCEMENT OF AN OVERLOADED DISTRIBUTION NETWORK WITH THE PENETRATION OF SOLAR PV DISTRIBUTED GENERATION

Nouman Ali, M. Hasan, Jadeed Gul, Anis Ur Rehman, Rasheed Khan

Department of Electrical Engineering,
Balochistan University of Engineering and Technology, Khuzdar, Pakistan

Power losses and voltage drops severely impact the performance of home appliances and distribution transformers. Power loss is minimized to save electricity while the voltage level is maintained in allowable standard limits for the smooth operation of the power system. For this purpose, different techniques are discussed. Instead of utilizing traditional methods power engineers prefer to integrate renewable energy source(s) at optimal sites. In this paper, small scale solar photovoltaic modules are penetrated through the net-metering. The distribution feeder in district Khuzdar of Balochistan is taken as a case study for this research where irrigation loads of some optimal sites are solarized. Due to this integration of solar systems power loss is reduced while the voltage at consumers' ends is improved. This technique not only relieves the grid but also saves a huge amount of revenue. The solar PV systems are installed according to the demand of irrigation load. It is investigated that with the implementation of such small scale and a large number of solar PV units in the distribution scheme has declined the importance of large scale renewable grid integration. Performance analysis of existing and proposed distribution system has been carried out and the results obtained clearly demonstrates the effectiveness of the proposed method. The proposed systems are modelled in MATLAB/SIMULINK tool while the load flow analysis is performed in ETAP

IEEC-2019 - Session No. 5

Session Name **Control System & Robotics**

DYNAMIC SELF STABILIZING MOBILE PLATFORM

Mohammad Mahad Nadeem*, Sumair Ullah Khan and Danial Mazhar

Department of Electrical Engineering, DHA Suffa University, Karachi,

This paper presents the design and implementation of dynamic self-stabilizing mobile platform with 2-degrees of freedom on a mobile platform using low-cost material. The self-stabilizing control system presented in this paper can be used in various medical, military applications and logistic devices and is objectively suitable for working in outdoor where the ground surface is not flat or uneven. The platform can freely rotate due to its mechanical structure within 2-degrees of freedom. The complete control system of stabilizing the platform has been designed on the Arduino UNO microcontroller. Longitudinal and lateral movements are controlled via servomotors for X and Y-axes. The algorithm has been developed to interpret the digital data from the gyroscope to the angular position of the system and applying complementary filter and proportional controller on it subsequently. The magnitude is then compared to a preset function to infer the angle of tilt of the platform. The tilting angle is then converted to rotation angle for the servomotors to act on.

IEEC-2019 - Session No. 5

Session Name **Control System & Robotics**

TOWARDS DESIGN AND DEVELOPMENT OF POST ELBOW SURGERY REHABILITATION EVALUATOR

Tayyab Ansari and Tariq Javid

Hamdard University, Karachi

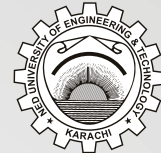
This paper outlines the design and development of a novel elbow surgery evaluator. Overhead athletes are at great risks of elbow injuries or pain. Rehabilitation of the athletes often involves surgical procedures and related trainings. Athletes require fastest possible recovery after the injury then order to return to competition. The proposed solution in this work is to evaluate the elbow surgery and effectiveness of the rehabilitation progress. The system design comprises of design an inertial measurement unit based wearable band. The developed system calculates the elbow rotational movement that includes flexion/extension and supination/pronation. These parameters are primary requirements in the rehabilitation of elbow. The core aim of the study is to evaluate the rehabilitation progress of injured athletes. The implemented system is tested on three healthy subjects successfully with satisfactory result.

POSTERS

4th International Electrical Engineering Conference



The Institution of Engineers Pakistan
Karachi Centre
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PROGRAM SCHEDULE of POSTER SESSION
ASPIRE-2019

Technical Session-VI (Poster Presentations)			
Time:	Location	Paper ID:	Paper Details
11:30-13:10	S e m i n a r R o o m 2	IEEC-2019-04	<i>Smart Energy Meter with Advanced Features and Billing System</i> Mubashar Hasnain Tahir, Saad Muneeb, Muhammad Saeed Jan, Muhammad Hassan
		IEEC-2019-06	<i>PLC Based Automated Object Sorting System</i> Rakhshan Zulfiqar, Bushra Mehdi, Rumaisa Iftikhar, Tahmina Khan, Razia Zia, Najam Saud
		IEEC-2019-08	<i>Design and Implementation of an android app controlled Fire Fighting Robot</i> Usra Sami and Hira Beenish
		IEEC-2019-09	<i>Intelligent Control System to Identify Fault in Distribution Network of Smart Grid through Neural Network</i> Syed Owais Ali Chishti, Syed Atif Naseem, Riaz Uddin, Muhammad Hammad Saleem, Syed Wasif Naseem
		IEEC-2019-12	<i>Electric Vehicle (EV) a sustainable policy recommendation for Zero GHG emission in Pakistan</i> Syed Atif Naseem, Riaz Uddin, Athar Rashid, Syed Owais Ali Chishti, Syed Wasif Naseem
		IEEC-2019-19	<i>Solar Thermal Power Generation Using Seebeck Effect</i> Shagufta Jawaid and M.Ammar Akbar
		IEEC-2019-26	<i>Reactive power management by varying frequency of capacitor in renewable energy systems</i> Hafsa Wahid, Jehanzeb and Junaid Ahmed Qureshi
		IEEC-2019-33	<i>Automation and Control System of EC and pH for Indoor Hydroponics System</i> Aisha Mehboob, Wajid Ali, Tayyeba Razaqat, Arsalan Talib
		IEEC-2019-35	<i>Internet of Nano Things: Next Step for Future of Nanotechnology</i> Hasan Rafae, Syed Waqar Jamil, Muhammad Imran Aslam and Irfan Ahmed
		IEEC-2019-36	<i>Energy Conditions and Renewable Energy Potential in Pakistan: An Overview</i> Muhammad Hamza Latif,, Tallal Ahmed, Waqas Khalid
		IEEC-2019-37	<i>Security, Privacy, and Trust in IoT</i> Faizan Hussain, Syed Daniyal Nadeem, Aqeel-ur-Rehman and Sadiq ur Rehman
		IEEC-2019-40	<i>Efficient traffic control system</i> Syed Umaid Ahmed, Talha Ashraf and Farah Kareem
		IEEC-2019-43	<i>Evaluating the role of neural networks and cyber security for the development of next generation autonomous vehicles: A Survey</i> Haiira Saleem, Rehana Khatoon, Faisal Riaz, Muhammad Atif Butt
		IEEC-2019-48	<i>MagnetoHydroDynamics (MHD): Making a case for Innovative Generation Pakistan Environment</i> H.M.S. Adnan Ali, M.M. Aman, Muhammad Talhi Ali, Abdullah Munir, Shariq Shaikh
15:10-15:30		Certificate Distribution	

IEEC-2019

SMART ENERGY METER WITH ADVANCED FEATURES AND BILLING SYSTEM

Mubashar Hasnain Tahir, Saad Muneeb, Muhammad Saeed Jan , Muhammad Hassan
Electrical Engineering Department, University of Engineering and Technology, Taxila, 47050, Pakistan

The paper presents designing, implementation of the cost effective Energy Meter having demand side load management with flexible tariff plan. Smart Energy Meter with the enabling feature of Automatic Meter Reading (AMR) and storing data in SD card, communication of billing information with the consumer and utility through GSM network, tampering detection and notify both consumer and utility through Short Messaging Service (SMS). Advanced feature of this meter is demand side load management during peak and off-peak hours. Using load management customer can go into daily cost reduction process. In load management, consumer load limit is flexibly reduced during peak hours and by increasing this limit SEM automatically cut off the load. In case of any fault SEM also automatically disconnect the complete load through relay operation.

IEEC-2019

PLC BASED AUTOMATED OBJECT SORTING SYSTEM

Rakhsan Zulfiqar, Bushra Mehdi, Rumaisa Iftikhar, Tahmina Khan, Razia Zia, Najam Saud
Sir Syed University of Engineering & Technology, Karachi, Pakistan

In this advance era, automatic sorting is highly desirable in approximately every industry. Its main objective is to reduce human efforts and time which can ultimately raise its efficiency. However, perfect sorting machine is still in progress which should be flexible and compatible in design. In this work, the proposed sorting machine is able to corporate compatibility by using conveyer belt and proximity sensors to detect type of material i.e. wood, metal or plastic and also identifies size of material in three different ranges and finally sort the material separately in assigned basket by using pneumatic cylinder (controlled by Programmable Logic Controller (PLC)). The proposed multi sorting system is able to sort nine objects of nine different ranges are sorted with 100% accuracy within the time interval of 0.5 seconds. The proposed model could be implemented in any industry whose applications are mechatronics based engineering system. This model can also produce list of sorted objects through enabled sorting program commands.

IEEC-2019

DESIGN AND IMPLEMENTATION OF AN ANDROID APP CONTROLLED FIRE FIGHTING ROBOT

Usra Sami , Department of Computer Engineering, Bahria University Karachi, and Hira Beenish
Department of Computer Engineering, PAF KIET Karachi

This paper presents the development and implementation of a Fire Fighter Robot. The proposed fire extinguishing robot works with an android application. The complete system contains a vehicle carrying a water tank along with a pump which can throw water. The communication between vehicle and android app is facilitated using Bluetooth module and receiver. The hardware of proposed fire extinguishing robot is implemented and tested. Through various commands provided in the app, the user is able to control the whole movement and the pumping action of robot.

IEEC-2019

INTELLIGENT CONTROL SYSTEM TO IDENTIFY FAULT IN DISTRIBUTION NETWORK OF SMART GRID THROUGH NEURAL NETWORK

Syed Owais Ali Chishti,

Department of Computer Science, FAST University Peshawar,

Syed Atif Naseem,

Department of Electrical & Electronics Engineering, Izmir University of Economics

Riaz Uddin, Muhammad Hammad Saleem,

Department of Electrical Engineering, NED University of Engineering & Technology,

Syed Wasif Naseem,

Department of Planning Engineering, Saudi Electricity Company

In distribution network of smart grid there are various type of fault occur in the network, which are challenge for the control system to identify its type of fault, location and restore the network automatically. In this paper we applied neural network to determine type of fault in order to do predictive maintenance and recover the network as early as possible depending on the fault type. The paper also presents the accuracy level of neural network model to determine the type of fault accurately at any mentioned condition and environment.

IEEC-2019

ELECTRIC VEHICLE (EV) A SUSTAINABLE POLICY RECOMMENDATION FOR ZERO GHG EMISSION IN PAKISTAN

Syed Atif Naseem

Department of Electrical & Electronics Engineering, Department of Political Science and International Relations, Izmir University of Economics, Izmir, 35330, Turkey,

Riaz Uddin

Department of Electrical Engineering, NED University of Engineering & Technology, Karachi, 75290, Pakistan,

Athar Rashid

Department of Electrical & Electronics Engineering, Department of Political Science and International Relations, Izmir University of Economics, Izmir, 35330, Turkey.

Syed Owais Ali Chishti

Department of Computer Science, FAST National University, Peshawar, Pakistan,

Syed Wasif Naseem

Department of Planning Engineering, Saudi Electricity Company,

Lithium ion battery electrical vehicle, is an upgrade form of plug in hybrid vehicle which plays an important role during peak load time by supplying the electrical energy to the power grid. It also reduces the greenhouse gas emission. EV is a sustainable solution with its own power station for recharging and supporting the electrical infrastructure when needed.

IEEC-2019

SOLAR THERMAL POWER GENERATION USING SEEBECK EFFECT

Shagufta Jawaid and M.Ammar Akbar

Department of Electrical Engineering, Bahria University

Energy has always been the most essential part of human race. Due to the declination of natural fuels and fossil fuels, the need to bring out system which are reliable and replenish is very important. The renewable energy sources such as sunlight, wind, geothermal heat, tides and biomass are cheap to operate due to their replenish behavior in nature. The testing out new designs with the fusion of solar thermal energy and thermoelectric energy conversion using Seebeck Effect, is one of the remarkable technologies which have great potential to play a significant role in the energy requirements in the near future. This technology directly converts solar energy to electricity using thermo-electric generator modules (TEGs).

In this project the solar parabolic dish concentrator concentrates the solar heat energy to create hot-end whereas cold-end temperature is kept down by means of water flow. A six feet (1.8m diameter) parabolic dish concentrator consist of plane mirrors concentrates solar heat to the aluminum receiver, which has two sides one is hot side and another is cold side. Thermo-electric generator modules (TEGs) consists of bismuth telluride (Bi₂Te₃) semiconductor. The two axis linear solar tracking system is designed to increase the overall efficiency of the system. Solar thermal energy collecting system comprising of parabolic dish concentrator to achieve a temperature gradient of 270 °C between hot and cold side of the receiver which was expected to produce 14.7 W per thermo-electric generator module. Multiple modules can be used to generate power up to 500W and the efficiency can be maintained by keeping the temperature difference. The relationship of solar thermal energy and thermo-electric energy conversion bring out to generate clean energy.

IEEC-2019

REACTIVE POWER MANAGEMENT BY VARYING FREQUENCY OF CAPACITOR IN RENEWABLE ENERGY SYSTEMS

Hafsa Wahid, Jehanzeb and Junaid Ahmed Qureshi
NED University of Engineering and Technology

Stability and active power sharing through Renewable energy Systems (RESs) are major concern; whereas reactive power control of RES is also important to increase the performance capacity of RESs. It is mainly through reactive power compensation in large grid connected renewable energy systems. The amount of the reactive power produced or absorbed by the wind farm and solar plants changes because of the power changes at different wind speed and sunlight. When the desired amount of reactive power needed by the system is not produced, the voltage sags and ultimately can collapse and disable the flow of power. For this reason, reactive power balance has to be carefully maintained to ensure an efficient operation. Various reactive power management sources such as capacitor banks, SVC, STATCOM, FACTS (Flexible AC-Transmission System) based on power electronics are used. In this paper a new concept of varying frequency of capacitor instead of varying value of capacitance is introduced. An automatic reactive power controller is designed for lagging and leading power factor which is very cost effective. Power factor correction techniques discussed in this paper have the capability of using in industries, households and power systems to make them stable and efficient. These techniques also improve voltage regulation of the system and reduce power system losses. Consumers can get rid of low power factor penalty by using these techniques.

IEEC-2019

AUTOMATION AND CONTROL SYSTEM OF EC AND PH FOR INDOOR HYDROPONICS SYSTEM

Aisha Mehboob, Wajid Ali, Tayyeba Rafaqat, Arsalan Talib,
National University of Sciences and Technology (NUST-PNEC), Karachi

Automation and control systems play a vital role in modern lifestyle which aim to provide enhanced performance when applied to a system. This paper presents a locally designed automation and control system for indoor hydroponics system. Hydroponics is soil-less agriculture technique in which crops are grown under controlled environment using nutrient solution as source of nutrition. Electrical Conductivity (EC) and pH of nutrient solution are the major factors in hydroponics system which need to be continuously controlled and monitored. In this proposed control system, the sensing network, data acquisition and the decision making is done by Arduino Mega. EC and pH values of nutrient solution are recorded by using DF-Robot EC and industrial DF-Robot pH probes respectively. Recorded EC and pH values are fed to Arduino Mega which adjusts the values, if required, through actuators. The recorded values are, simultaneously, sent to Raspberry-Pi for data logging using CAN Bus protocol. The proposed system successfully monitors electrical conductivity (EC) and pH and automatically balances these factors. It is applicable in indoor hydroponics systems and maintains reliability and sustainability. CAN Bus protocol makes the system easily scalable and cost effective. This paper focuses on design of automation and control system of electrical conductivity (EC) and pH in hydroponics system, however, the study of nutrients, nutrient solution strength and composition remains out of the scope.

IEEC-2019

INTERNET OF NANO THINGS: NEXT STEP FOR FUTURE OF NANOTECHNOLOGY

Hasan Rafae, Syed Waqar Jamil, Muhammad Imran Aslam and Irfan Ahmed,

Department of Electronic Engineering, NED University of Engineering and Technology, Karachi, 75290, Pakistan

The arrival of the internet of things has transformed the day to day functionality of each life's intensely. Internet of things has provided countless new opportunity to create a powerful industrialized structure and many more. Several IoT applications have been implemented and deployed in the modern years. As the research currently going on in the field of IoT. Nanotechnology has taken essential steps to get linked with Internet of Things that may perhaps take energy efficiency, medications and many various subdivisions to entire new dimension. Nanotechnology offers the latest solutions for not just a particular application, but for numerous applications such as observing of health, smart cities, military, farming, environmental monitoring and other industries. The correlation of nano-scales gadgets and nano sensors with standard network and eventually with the internet terms a new networking model called as Internet of Nano Things which is also known as IoNT. The core point of this paper is to provide a brief knowledge on IoNT and overview of nanotechnology, Applications areas and issues/challenges to create awareness of internet of nano thing among researchers so that existing and upcoming challenges can be resolved and new applications related to IoNT can be found in the near future.

IEEC-2019

ENERGY CONDITIONS AND RENEWABLE ENERGY POTENTIAL IN PAKISTAN: AN OVERVIEW

Muhammad Hamza Latif,, Tallal Ahmed, Waqas Khalid

University of Engineering and Technology Lahore

A constantly increasing demand and supply gap from the past two decades has forced Pakistan to seek short term and expensive energy generation solutions. About one-fifth of Pakistan's import is formed by the crude oil products out of which 42% is utilized in the energy sector. Economic sustainability of a country is deeply linked to the Energy security of the country. The energy policy introduced in the year 2006 presented a clear direction towards the sustainable energy goal in Pakistan. At the present, renewable generation (excluding hydro projects) in less than 5% of the total energy mix now forming about 1000 MW against the planned 10,000 MW in the year 2030. Pakistan holds an energy generation potential of 167.70 GWh by employing renewable energy sources accounting more than the current requirements. This paper presents a brief overview of the current Energy scenario in Pakistan and sheds light on the potential of renewable energy as a possible solution to the energy problem.

IEEC-2019

SECURITY, PRIVACY, AND TRUST IN IOT

Faizan Hussain, Syed Daniyal Nadeem, Aqeel-ur-Rehman

Department of Computing, Hamdard Institute of Engineering and Technology,

Sadiq ur Rehman

Department of Electrical Engg., Hamdard Institute of Engineering and Technology,

Internet of things is reaching new peaks and rapidly gaining momentum and popularity in many domains of our daily lives. These domains include vehicles, industry, education, agriculture, hospitals, environmental monitoring etc. In every aspect, internet of things (IoT) has its marks and milestones which are gradually increasing as the technology is getting advanced and handy to use. Internet of things (IoT) brings the multitude of technologies and techniques together with the vision of creating the organized and interconnected world so the communication between entities can be done in a better, usable and efficient manner. Security, privacy, authentication, and trustworthiness for the end users is considered to be the main feature for any technology. An important and essential role is played by security, trust, and privacy for the satisfaction of end users. Most commonly observed requirements for IoT security are namely authentication, confidentiality and access control. There are several available ways in which security, privacy, and trust of IoT can be managed in which NFC, RFID, and WSN are commonly used

IEEC-2019

EFFICIENT TRAFFIC CONTROL SYSTEM

Syed Umaid Ahmed, Talha Ashraf and Farah Kareem

Department of Electrical Engineering, NED University of Engineering and Technology

This research paper presents an innovative project for the betterment of our existing traffic regulation and surveillance system by the endorsement of an effective law system through a systematic procedure. This project will count the number of vehicles, capture their pictures, calculate their speed along with the time and date when it crosses our system. Thus, the timing of the traffic signals can be controlled so as to facilitate traffic jams. The most alluring aspect of this project is its capability of detecting the movement of wrong-way vehicles and dispatching a notification to the administrator alarming him of the situation. This project aims to replace an obsolete traffic management system with a cost friendly and an efficient system using a Raspberry Pi model 3B as a microcomputer along with the Open CV library used to add webcam to the system. The motion of vehicles will be detected, activating our system, thus, recording the aforementioned specification to create a database. Algorithms were implemented in the microprocessor to carry out the procedures.

IEEC-2019

EVALUATING THE ROLE OF NEURAL NETWORKS AND CYBER SECURITY FOR THE DEVELOPMENT OF NEXT GENERATION AUTONOMOUS VEHICLES: A SURVEY

Hajira Saleem, Rehana Khatoon, Faisal Riaz, Muhammad Atif Butt,

Control Automotive and Robotic Lab, Department of CS & IT, Mirpur University of Sciences and Technology, Mirpur AJK, Pakistan

Human drivers are one of the major reasons behind road accidents. By introduction of autonomous vehicles, many accidents can be avoided. To emulate state-of-the-art human drivers, artificial neural networks are proved to be efficient in the design of next generation autonomous vehicles. However, a latest comprehensive survey has been not performed yet, which elucidate the latest state-of-the-art neural networks based autonomous vehicles design in a single literature. Moreover, a general overview of techniques utilizing neural networks for developing autonomous vehicles are discussed in this study. With the emergence of advanced cyber physical systems like autonomous vehicles, new types of security threats have been emerged, which might be a main hurdle in the practical implementation of autonomous vehicles. This paper also covers these security issues along their solutions. In the last some open problems related to the possible role of neural networks and network security has been presented as well

IEEC-2019

MAGNETO HYDRO DYNAMICS (MHD): MAKING A CASE FOR INNOVATIVE GENERATION PAKISTAN ENVIRONMENT

H.M.S. Adnan Ali, M.M. Aman, Muhammad Talhi Ali, Abdullah Munir, Shariq Shaikh

Department of Electrical Engineering, NED University of Engineering & Technology Karachi

Energy Crisis is one of the major issues of Pakistan. There are many reasons of deficit in demand and supply energy such as fuel cost, inefficient power plants and non-utilization of indigenous resources. Most of the public sector thermal power plants (GENCOs) currently operating in the country are not more than 30% efficient, which reduces the output power drastically and result in high tariff rates. In this scenario, the installation of efficient power plants has a high potential to overcome the energy crisis significantly. Magneto Hydro Dynamic (MHD) has the capability to increase the efficiency of existing power plants and utilization of vast coal reserves with negligible effects of environmental pollution. Generators In this paper the review of MHD generating technology is presented and the current research including a number of innovative MHD cycles are discussed. The prospects of this technology are explored in generation sector of Pakistan as a solution to energy crisis and especially for the utilization of vast coal reserves of Thar. Issues and challenges are considered for implementation of this technology and finally the roadmap for its implementation in our environment is discussed.

FINAL YEAR PROJECTS



The Institution of Engineers Pakistan

Final Year Projects from the following Universities for the 4th International Electrical Engineering Conference on 25th & 26th January, 2019 at IEP Karachi Centre

Name of Student	Topic
PAF - KARACHI INSTITUTE OF ECONOMICS & TECHNOLOGY	
Project Titles	
M. Owais Akram, Muzammil Ali	Smart Convertible Wheelchair
Syed Hassan Ali, M. Hussain Mohsin Ali Shah	Low Noise Readout Interface for cantilever Based Pathogen Detector
Hafiz Wajehul Hasan Imtiaz Hussain	Wireless Power Transfer IC
MUHAMMAD ALI JINNAH UNIVERSITY	
Project Titles	
Shoaib Ahmed Siddiqui	Enhanced Solar PV MPPT for 12v Battery charger
Misbah Ul haq	Matlab based simulator to model, simulate, and analyze photovoltaic system
SIR SYED UNIVERSITY OF ENGINEERING & TECHNOLOGY	
Project Titles	
Hammad Shamim, Hasan Jamil Muhammad Zubair Zaryab Badar	Smart Energy Metering and Controlling with the help of android
Wahaj Ali, Muhammad Hassan Muhammad Maqsood Muhammad Taha Meer	Prototype Hybrd Air Conditioner
Mehak Kanwal, Anqa Jawed Umer Khan, Muhammad Khan	Contingency analysis of KE EHT network using ETAP, loss calculation and Improvement plan
BAHRIA UNIVERSITY	
Project Titles	
Junaid Ahmed, Baghdad Raza Muflih ul Furqan	Security System
Ammar Akbar, Shagufta Jawaid Usra Jafri	Energy harvesting
BALUCHISTAN UNIVERSITY OF ENGINEERING & TECHNOLOGY Khuzdar	
Project Titles	
Naveed Anwar	Arduino Based Robotic Objects Lifter Controlled by Smartphone
Muhammad Mubeen	Automatic Water Level Indicator
Sajjad Ali	Implementation of Automatic Transfer Switch for Hybrid Supplies
HAMDARD UNIVERSITY	
Project Titles	
Syed Sardar Shah, Naveed Manzoor Afridi	PLC Based Automatic Wire Stirrup Bender
Amir Taj Khan, Anus Mujahid Syed Anser Ali	Hand Controlled Robotic Arm

PRESENTATIONS



The Institution of Engineers Pakistan

List of Papers presented in 1st Electrical Engineering Conference
held on 13th & 14th May, 2016 at IEP Karachi Centre

ORAL PRESENTATION

Key Note Presentation on "Recent Research of Power Systems : An Outlook"

- Prof. Ir. Dr. Mohd Wazir Bin Mustafa, Deputy Dean (Academic) from Universiti Teknologi, Malaysia (UTM).

2nd Keynote Lecture on "4.0 Framing Co-Creative Mobile Services in Agriculture"

Dr. Saqib Bukhari, German Research Centre for Artificial Intelligence DFKI

"Feasibility Analysis of Solar Powered Vehicle with Integrated MPPT Based Charging Controller"

- Muhammad Kashan, M. Ihsan Ul Haq and Muhammad Mansoor

Plug-in-Hybrid Electric Vehicles via Distribution Network Reconfiguration with Improved Electric Vehicle Charging Load Model

- Beenish Sultana, M.W. Mustafa, R. M. Larik

Modeling, Simulation and Control of Battery Charging Mechanism of PV Array System

- Saghir Amin and Syeda Nashra Raza

Analysis of Wake Effect in Clustered Wind Farm

- Sara Noor, Maryum Waris and Sajjad Haider Zaidi

Invited on line Talk on "Device-free Passive Localisation: Concepts and Results with Current Setup"

- Dr. Debraj Basu School Of Engineering And Advanced Technology, Massey University, Palmerston North, New Zealand

Evolving Internet Traffic Trend in Pakistan

- Muhammad Haris Rais and Muhammad Asad Arfeen

Comparative Analysis of Different Patch Antennas

- Rana Khan, Tahzeeb Jamal, Muhammad Imran Aslam, and Irfan Ahmed

Impact of Elevation Angle on Rain Attenuation in Satellite Communications

- Syed Nauman Ahmed and Aamir Zeb Shaikh

The Smart Monitoring Unit

- Dr. Rafay Ali, Muhammad Hassan-ul-Haq, Mohammad Ahmed Khan, and Muhammad Hamza Ovais

A novel Topology of Symmetric Multilevel Inverter

- Ashraf Yahya and Syed M. Usman Ali

Design of Advanced Neutral Point Clamped Multilevel Converter for AC Drive Systems

- M. Mansoor Alam, Mumtaz Ahmad, M. Asim Amin, M. Ihsan Ul Haq, and Attiq ur Rehman

A Practical Way to Reduce Technical Losses in Distribution System

- Kashif Iqbal Ghazi and Muniba Mazhar

A Predictive Energy- Bounding Approach for Bilateral Teleoperation: An Overview

- Engr. Riaz Uddin, PhD Scholar, GIST, South Korea

Kinect Based Edutainment System For Autistic Children

- Humaira Rana, Shafaq Zehra, Almas Sahar, Saba Nazir and Hashim Raza Khan

ICA based Blind Source Separation in Voice Applications

- Humera Hameed, Um-e-Rubab, Bilal Shahid and Abbas Abbasi

Electro-Pneumatic Multi-Level Suspension System for All Terrain Vehicles (ATVs)

- S. Raza A. Jafri, M. Fahad Ghouri, Usman Ali Shah, Farrukh Ahmed and Sammam Mughes

Over-the-air Programming for Low Cost, Small Scale WSNs based on ZigBee Protocol

- Muhammad Inshal Uddin and Muhammad Khurram

Meta-heuristic optimization Methods for Under Voltage Load Shedding Scheme

- Raja Masood Larik and Mohd. Wazir Mustafa

Estimation of Depth & Existence of Underground Water Using Ground Penetration Radar

- Abdul Hadi and Muhammad Khuram

A Smart Safety Gadget Design to Avoid Accidents in Warehouse Environment

- Muhammad Yaseen, Engr. Laeeq uz Zaman, Muhammad Khurram and, Rana Noman Mubarak

GSM based an open access E-TICKETING system through mobile devices

- Ali Hussain Sajid and Sahar Arshad

Wireless System Based Smart Wheelchair

- Usama Fareed Ahmad, Muhammad ShahRukh Khan, Muneeb ur Rahman, S.M Daniyal Hasan Shah, Irfan Ahmad, and Muhammad Imran Aslam

Study of Beamforming Methods with Steering Vector Errors

- Muhammad Saleem and Muhammad Zia Ur Rehman

Application of smart solar system for irrigation purposes

- Adnan Tahir, Abdul Basit Amjad and Tahir Khan

Comparative Analysis of Wind-Electric and Solar Based Water Pumping System

- Areez Khalil Memon, Naima Arshad, Abdul Latif Shah, Muhammad Suhail Shaikh

Fast Distributed Parameters Process Control for the Motivation of local flow in industries

- Sahar Arshad, Muhammad Ismail, Shayan Qazi, Waleed Raza, Engr. Abbas Abbasi, Engr. Bilal Shahid

Advanced Metering Infrastructure and Customer Side System

- Syed Sajjad Haider Zaidi, Rao Saim Zafar, Arsalaan Zia Mughal, Anas Masood, Saadan Ahsan

Real Time Dynamic Performance of Multi-Machine System Using Smart Technology

- M. Asim Amin, M. Mansoor Alam, M. Talib Faiz, Akhter Hussain Javed, Attiq Ur Rehman

Acquisition and Processing of EEG Signals for Automation

- Syed Sajjad Haider Zaidi, Syed Saim Asghar, Isra Jamil, Hammad Anis

Design & Development Of A System For Hiding Information Within Images Using Steganography

- Suhail Shaikh, Naima Arshad, Areez Khalil, Ghazala Shafi Sheikh, Ghous Baksh Narejo

Design 1-bit full adder and Comparative Study of Different Type of Adders in terms of Power Consumption, Area and Delay

- Humera Hameed, Sahar Arshad, and Tauseef-ul-Hassan

Control the Temperature of Hot Air Blower Rig using PI (Proportional Integral) and Adaptive PI Controllers

- by Sheikh Muhammad Ameer Ur Rehman, David Baglee, Muhammad Sheikh and Omara Parveen

Intelligent Robotic Waiter with Menu ordering System

- Usman Ali Shah, Engr Faraz Ali, Sana Sohail, Haris Khan

Invited online talk on "Future of cellular technology and foundations for 5G cellular networks"

- Syed Shan-e-Raza Jaffry Massey University, New Zealand

Synthesis of Dye Sensitized Solar Cells Using Natural Resources

- Maheen Mazhar, Hafiza Mazia Ada, Umme Hani, Humair Ahmed Siddiqui, and Sadia Muniza Faraz

Stimulated Raman Scattering in Nonlinear Silicon Nanophotonic Waveguides: Theory and Applications in Photonic Integrated Circuits

- Abdurrahman Javid Shaikh and Othman Sidek

Evaluation of SiTerra's 130nm CMOS Radio Frequency Integrated Circuit (RF IC) Technology for Power Amplifier Design

- Ifrah Jaffri, Usama Ahmed Siddiqui, Faizan Hadi, and Hashim Raza Khan

Invited online Talk on "Dielectric Resonator Antennas: State of the Art and Future trends"

- Engr. Ubaidullah Khan School of Electrical and Electronic Engineering, Universiti Sains Malaysia.

Two-Machine Stability Analysis and Inter-Area Oscillation Detection using Simulink Model of Phasor Measurement Unit

- Khurram Shabbir and Serhat Seker

Smart Home - An Energy Conservation Initiative

- Barkha Parkash and Riaz uddin

Efficacy Measurements of Commercially Available Ceiling Fans

- Farah Jalal, Muhammad Hammad Uddin, Saad Ahmed Qazi, Hira Hassan, Aliya Batool and Yusra Fatima

Hybrid Trust Model for Enhancing Operational Trust in Cloud Computing

- Muhammad Faraz Hyder and Muhammad Ali Ismail

Network Delay Regulator for Sampled Data-like Channels : A Feasibility

- Riaz Uddin, Muhammad Ali Baig and Jeha Ryu

Deterministic Approach Available Transfer Capability (ATC) Calculation Methods

- Azhar B. Khairuddin, Othman O. Khalifa, Abdelwahab I. Alhammi, Raja Masood Larik

Poster Presentation Over-the-air Programming for Low Cost, Small Scale WSNs based on ZigBee Protocol

- Muhammad Inshal Uddin and Muhammad Khurram

Meta-heuristic optimization Methods for Under Voltage Load Shedding Scheme

- Raja Masood Larik and Mohd. Wazir Mustafa

Estimation of Depth & Existence of Underground Water Using Ground Penetration Radar

- Abdul Hadi and Muhammad Khuram

A Smart Safety Gadget Design to Avoid Accidents in Warehouse Environment

- Muhammad Yaseen, Engr. Laeeq uz Zaman, Muhammad Khurram and, Rana Noman Mubarak

GSM based an open access E-TICKETING system through mobile devices

- Ali Hussain Sajid and Sahar Arshad

Wireless System Based Smart Wheelchair

- Usama Fareed Ahmad, Muhammad ShahRukh Khan, Muneeb ur Rahman, S.M Daniyal Hasan Shah, Irfan Ahmad, and Muhammad Imran Aslam

Study of Beamforming Methods with Steering Vector Errors

- Muhammad Saleem and Muhammad Zia Ur Rehman

Application of smart solar system for irrigation purposes

- Adnan Tahir, Abdul Basit Amjad and Tahir Khan

Comparative Analysis of Wind-Electric and Solar Based Water Pumping System

- Areez Khalil Memon, Naima Arshad, Abdul Latif Shah, Muhammad Suhail Shaikh

Fast Distributed Parameters Process Control for the Motivation of local flow in industries

- Sahar Arshad, Muhammad Ismail, Shayan Qazi, Waleed Raza, Engr. Abbas Abbasi, Engr. Bilal Shahid

Advanced Metering Infrastructure and Customer Side System

- Syed Sajjad Haider Zaidi, Rao Saim Zafar, Arsalaan Zia Mughal, Anas Masood, Saadan Ahsan

PRESENTATIONS



The Institution of Engineers Pakistan

List of Papers presented in 2nd Electrical Engineering Conference held on 19th & 20th May, 2017 at IEP Karachi Centre

Key Note Presentation was presented by Prof. Dr. Ted Johansson of Integrated Circuits and System, Department of Electrical Engineering, Linköping University, Sweden, on "The 28 nm CMOS Power Amplifier" which was an online presentation via skype

Keynote speech in Inaugural Session by Engr. Prof. Dr. Uvais Qidwai, Qatar University, Qatar

Keynote Speech in Closing Session Energy Efficiency and Renewable Resources: The Soft Solution of Energy Crisis

-Engr. Mian Sultan Mahmood, Secretary General, The Institution of Engineers Pakistan, during

Cross-sectional Analysis of Brain Magnetic Resonance Images for Abnormal cell growth by using Histogram Equalization

-Mashal Tariq and Shehla Andleeb, Department of Electrical Engineering, Usman Institute of Technology, Karachi, Pakistan

Estimating Reconstruction Error due to Jitter of Gaussian Markov Processes

Mudassir Javed and Dawood Shah, Department of Electrical Engineering College of Electrical and Mechanical Engineering,, National University of Sciences and Technology, Islamabad, Pakistan.

Comparison of Different Economical Dispatch Algorithms for a Hybrid Power System

-Syed Muhammad Faraz Ali, Sheikh Usman Uddin, Umer Hayat, Dr. Sajjad Haider Zaidi Pakistan Navy Engineering College, National University of Sciences and Technology, Karachi, Pakistan

Indigenous Vertical Wind Turbine

-Umer Iqbal, Asif Gulraiz, Hassan Bin Muslim , Taha Khan, Usman Institute of Technology, Karachi, Pakistan , Department of Electrical Engineering , DHA Suffa University, Karachi, Pakistan, Department of Electrical Engineering, Usman Institute of Technology, Karachi, Pakistan

Anthocyanin based Photosensitizer for Natural Dye-Sensitized Solar Cells

-Maheen Mazhar , Muhammad Hassan Sayyad and Sadia Muniza Faraz, Department of Electronic Engineering, NED University of Engineering and Technology, Karachi, Faculty of Engineering Sciences, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, District Swabi, Khyber Pakhtunkhwa

Energy Conservation Through Load Balancing

-Muhammad Osama bin Shakeel, Muhammad Faheem Ali, Syed Ali Jaffar Cdr. Sajjad Haider Zaidi Pakistan Navy Engineering College, National University of Science and Technology Karachi, Pakistan

Realization of Spectrum Sensing in Cognitive Radio

-Yasir Iqbal, Yusra Kaleem , Ayesha Asad and Muhammad Waseem, Department of Telecommunication Engineering,, Sir Syed University of Engineering and Technology, Karachi, 75300, Pakistan, Department of Telecommunication Engineering, Sir Syed University of Engineering and Technology, Karachi

Security in Vehicular Ad hoc Networks

-Yasir Iqbal, Yusra Kaleem, Department of Telecommunication Engineering, Sir Syed University of Engineering and Technology, Karachi

Edutainment System For Autistic Children

-Asma Yousuf, Rida Irfan, Iqra Siddiqui, Syed Saad-ul-Hasan and Hashim Raza Khan Department of Electronics Engineering, NED University of Engineering and Technology, Karachi,

Supply Chain Management System: A Web-Application for Distributors

-Zuhaib Ali , Muhammad Shoaib and Riaz Uddin, Department of Computer Science, Newports Institute of Communication and Economics, Karachi, Department of Electrical Engineering, NED University of Engineering and Technology, Karachi,

Sniffing, Decoding and Decryption of GSM signals using Open Source Software and Low Cost Hardware

-Muhammad Talha Choudary ,Arish Yaseen , Muhammad A Javaid,Abeer R Khan , Bilal A Khawaja , Sajid Saleem , Muhammed Mustaqim, Department of Electronics and Power Engineering, PNEC-NUST, Karachi

Actively Biased Differential Drive Rectifier circuit with Backscattering Communication

-Asma Mahar, Ayesha Hassan, Naveed, Arham Iqbal, Madiha Azhar , Yasir , Arsalan Jawed PAF-KIET (Karachi Institute of Economics and Technology Korangi Creek, Karachi,, Department of Electronic Engineering, NED University of Engineering and Technology, Karachi,

Efficiency Improvement of a Wireless Power Transfer System

-Ayesha Hassan Asma Mahar, Naveed , Sidra Saeed Gillani,Yasir Siddiqui and Arsalan Jawed, AFI-KIET (Karachi Institute of Economics and Technology), Main Campus, Korangi Creek,

Karachi NEDUET (NED University of Engineering and Technology, Main Campus, Karachi

Fault detection and localization of symmetrical fault using PCA and WT

-Shariq Shaikh* , Adnan Ali, Abdullah Munir and Muhammad Ali Memon Department of Electrical Engineering, NED University of Engineering and Technology, Karachi,

Evaluation Of Electromagnetic Environmental Impact Of Different Transmission Line Configurations Used In Pakistan

-Adnan Ali, Shariq shaikh , Abdullah Munir , Shahzaib Naveed , Zoha Furqan , Ramzan Murree Electrical Engineering Department, NED university of Engineering & Technology Karachi, National Electric Power Regulatory Authority, NEPRA.

Comparative analysis of ST1A and ST2A excitation system models for voltage stability of alternator

-Shariq Shaikh , S.Taha Ahmed , Shiraz Khan , M. Maaz Naseer and M.A. Rehman, Department of Electrical Engineering,, NED University of Engineering and Technology, Karachi.

Wireless Building Automation Using ESP8266: An Energy Efficient Approach

-Afrah Ziauddin, Sabah Fatimah, Samra Ashraf, Iqbal Azeem and Riaz Uddin, Department of Electrical Engineering, NED University of Engineering and Technology, Karachi

Power Sharing using Phase Shift Mechanism in Grid Interactive Photo-voltaic Power Systems

-Iqbal Azeem, Abdul Maalik Naeem, Umair Anwar, Shakir Jilani, Hassina Suleman Shah & Shayan Khan Department of Electrical Engineering, NED University of Engineering and Technology, Karachi

Hardware Implementation Of Non Directional Over Current Relay on Arduino®

-Arsalan Zahid, Tahir Nisar Gondal , Naveed Ali , Muhammad Umair , Muhammad Mohsin Aman Department of Electrical Engineering, NED University of Engineering and Technology, Karachi.

Meta- Heuristic based Optimization Algorithms: A Comparative Study of Genetic Algorithm and Particle Swarm Optimization

-Mohammad Affan, Department of Electrical Engineering, NED University of Engineering and Technology, Karachi

POSTER PRESENTATION

Thermal and Electrical failure analysis of lithium-ion battery after crash

-Muhammad Sheikh , Ahmed Elmarakbi and Sheikh Rehman Department of Computing, Engineering and technology, University of Sunderland, Sunderland, UK, Department of Electrical Engineering, Indus University of Engineering and Technology, Karachi

Analysis of The Awareness of Present Day Undergraduate Electrical Engineering Students

About Contemporary Technologies An Educational Survey About FACTS Devices Samiya Zafar, Yusra Rauf, -Fizza, Hira Haider, and Sana Department of Electrical Engineering, NED University of Engineering and Technology, Karachi

Clustering Algorithms of Wireless Sensor Networks: A Survey

-Muhammad Noman Riaz, Department of Avionics Engineering, National University of Sciences & Technology, Islamabad

Internet Traffic Management with Multiprotocol Label Switching (MPLS)

-Muhammad Saleem, Aqeel-ur-Rehman, Muzaffar Rao, Irfan Usmani and Fawadul haq Department of Telecommunication Engineering, Sir Syed University of Engineering and Technology, Karachi, Hamdard University of Engineering & Technology, Karachi

Transformer Health Monitoring

Syed Shahzeb Raza Bilgrami, Muhammad Awais Aitmad, Ameer Hamza Muhammad Farhan Siddiqui Dr. Sajjad Haider Zaidi, Muhammad Salman Khan and Muneeb Islam, Department of Electrical Engineering, National University of Sciences and Technology, Pakistan Navy Engineering College Karachi

Power Line Control and Monitoring using FPGA

-Usama Bin Rehan, Asif Gulraiz, Khyzer Amin, Shayaan Amin, Musa Raza

Home Area Networks: A cost effective desing and its implementation

-Sana Fatima, Iqra Amjad, Maliha Yasin & Dr. Sajjad Amin, Musa Raza

Detection and station of Slip Effect on the Parameters of DC Motor Mounted on

Computer Rail using Kalman Filter: A feasibility

-Shahzor Memon and Raizuddin

PRESENTATIONS



The Institution of Engineers Pakistan

List of papers presented in 3rd International Electrical Engineering Conference
held on 9th & 10th February, 2018

ORAL PRESENTATION

Key Note presentation on “Hybrid Robo-Virtual Avatar Autism Treatment & Evaluation System”

by Dr. Fady Shibata Al Najjar, United Arab Emirates University & Brain Science Institute, Japan

2nd Key Note Presentation on “Wearable Robotic Hand for Home Rehabilitation Operated by the Patient Intention, Therapist Instructions and Mobile Games”

by Dr. Fady Shibata Al Najjar, United Arab Emirates University & Brain Science Institute, Japan.

Need for Arc Flash Analysis for Low Voltage Distribution System

by Dr. Muhammad Mohsin Aman, Associate Professor, Department of Electrical Engineering and Technology, NEDUET, Karachi

Impact of reconfiguration and demand response program considering Electrical vehicles in smart distribution network

by Beenish Sultana and M.W. Mustafa

Low Cost GSM based Smart Energy Meter Design: Capable of Demand Side Management and Data Logging

by Rana Asad Ali, Mudassir Hussain and Tahir Mahmood

Boosting Economy Through R&D in Software Industry: Healthcare Software Systems,

by Dr. Shafaat Ahmed Bazaz, Dean Academia CASE

Energy Saving by Double Electrochromic Glazing- A Case Study for Central Library MUET, Jamshoro, Pakistan

by Oshaque Ali , Pervez H. Shaikh, Mazhar Uddin, and Zeeshan Anjum Memon

Increasing the Efficiency of Transformer for High Efficiency Isolated Boost Converter Design

by Muhammad Sohaib Anwer, Afia Khan, Danish Waheed, Syed Waqas Hussain, Muhammad Bazal Siddiqui, Aminul Haq

What Infrastructure-free 5G will look like?

by Dr. Faraz Hasan, Senior Lecturer Massey University, New Zealand

RADIO RESOURCE MANAGEMENT ISSUES IN 5G NETWORKS – A REVIEW

by Naureen Farhan and Bushra Aijaz

Software Defined Radio Waveforms implementation on GNU Radio

by Atif Javed, Abdul Samad, Faisal Saleem and Wajid Gulistan Rethink Product Development & Owais Zahid, Autodesk, Inc.

Design and Analysis of UWB-MIMO Antenna with Enhanced Isolation

by Muhammad Abid Ur Rehman, Sajid Ali, Amjad Iqbal and Muhammad Hameed Khan

Video Stream Transmission over Network on board UAVs for Surveillance Applications

by Muhammad Naveed and Sameer Qazi

Entrepreneurship in Electrical Engineering

by Mr. Danish Zahoor, BARQTRON

Short Circuit and Overload Current Sensing for Power Converts Using Indirect Current Sensing

by Atif Mehmood, Sajid Hussain, Faizan Ur Rehman

Prospects and Implementation of Solar Energy Potential in Pakistan Based on Hybrid rid Station Employing Incremental Conductance Technique

by Muhammad Hamza latif, Ayesha Aslam and Tahir Mahmood

Implementing Safety in Electrical Utilit

by Mansoor Akram, Head of Department, HSE for Generation & Transmission, K-Electric

Design and Analysis of Anti-Lock Braking System

by Mansaf Ali Abro, Shoaib Shaikh, Ali Asghar, Syed Nadeem Mian

A Validity of Transparency Optimized 4-Channel Architecture in Bilateral Teleoperation

by Muhammad Hammad Saleem and Engr. Dr. Riaz Uddin

Artificial Intelligence and its impact on the craft of Engineering

by Dr. Zeeshan Zia, Senior Scientist, Microsoft Corporation,

An Overview of Lexicon-Based Approach For Sentiment Analysis

by Azeema Sadia, Fariha Khan and Fatima Bashir

Performance analysis of load balancer and Self Organized web servers using HA-Proxy

by Muhammad Shakeeb, Bilal Muhammad Khan

POSTER PRESENTATION

Spent Fuel Calculation With Image Processing In Rod Bundle Nuclear Reactor Core

by Maqsood Jan Mohammad, Tahir Qadri and Shakil Ahmed , Department of Computer Engineering, Sir Syed University of Engineering & Technology, Karachi.

Arc flash mitigation Techniques

by Abeera Khan and Muhammad Mohsin Aman, Department of Electrical Engineering, NED University of Engineering and Technology, Karachi,

Management of Solar Power with Thermal Power Generation Unit Using FPGA Based Algorithm

by Shehryar Ahmed , M. Nouman Hashmi, S. Shahzaib Shah , Ramiz Ahmed, S. Sheraz Ul Hasan Mohani, Faculty of Engineering Sciences and Technology Iqra University, Karachi, S. Safdar Hussain, National University of Sciences and Technology, Islamabad

Future of Renewable Energy Technologies In Pakistan: A Policy Recommendation For Energy Storage Systems

by Syed Atif Naseem , Athar Rashid Department of Electrical & Electronics Engineering, Izmir University of Economics, Izmir, Turkey, Riaz Uddin , Syed Wasif Naseem, NED University of Engineering and Technology

Tri-Stage Cascaded Data Compression Framework for Smart Distribution Systems

by Syed Muhammad Atif and Anees Graduate School of Science and Engineering, PAF Karachi Institute of Economics and Technology

DC Motor Controlling and Modeling Through 3-Phase Thyristor based-Inverter

by Syed Atif Naseem , Athar Rashid, Department of Electrical & Electronics Engineering, Izmir University of Economics, Izmir, Turkey, Riaz Uddin , Syed Wasif Naseem, NED University of Engineering and Technology

GLIMPSES



The Institution of Engineers Pakistan

Glimpses of 3rd International Electrical Engineering Conference
held at IEP Karachi on 9th & 10th February, 2018



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