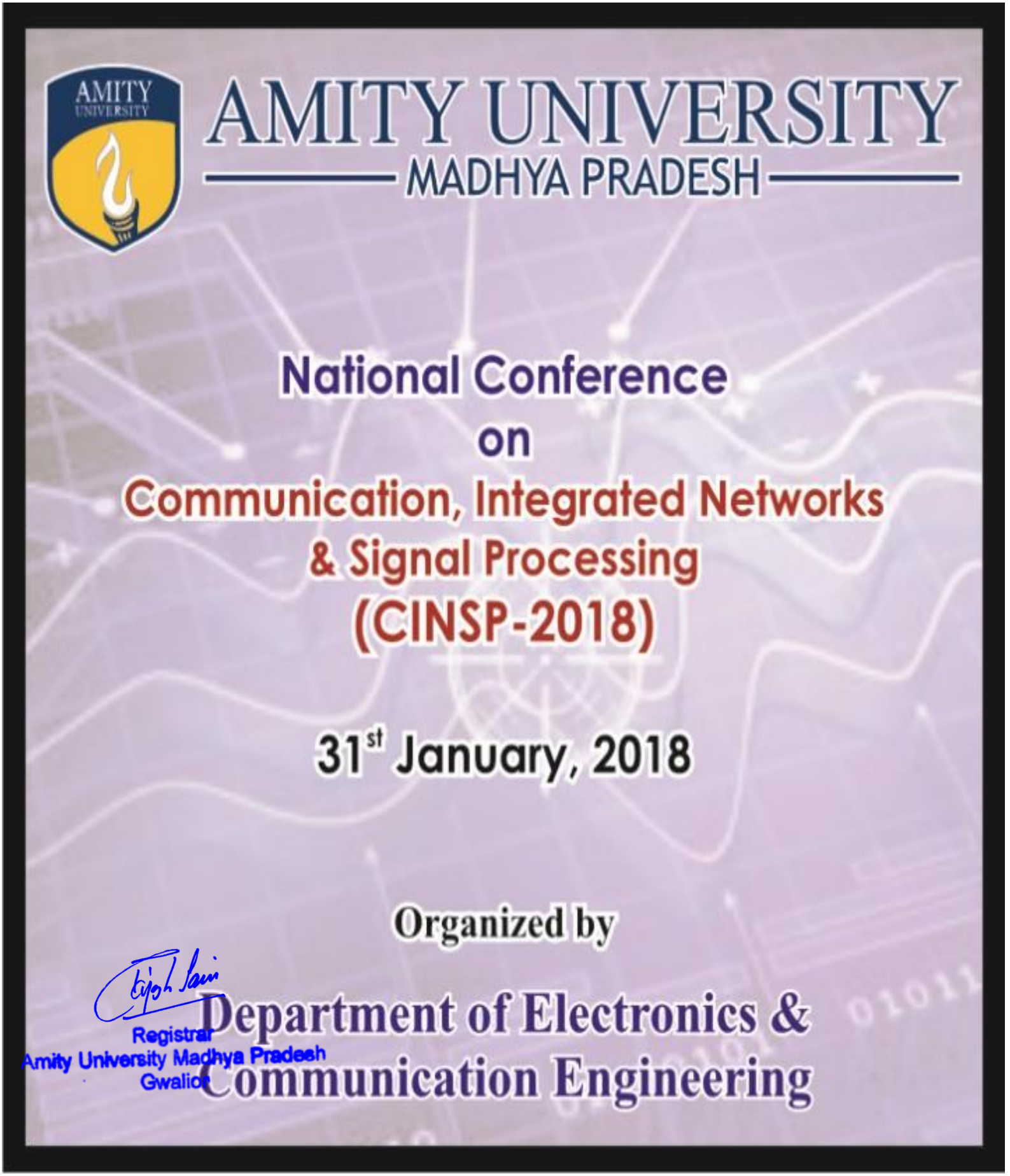

AMITY UNIVERSITY
MADHYA PRADESH
National Conference
on
Communication, Integrated Networks
& Signal Processing
(CINSP-2018)
31st January, 2018
Organized by
Department of Electronics &
Communication Engineering
Registrar
Amity University Madhya Pradesh
Gwalior

National Conference

On

Communication, Integrated Networks

&

Signal Processing

31 January, 2018

SOUVENIR

SPONSORED BY

MADHYA PRADESH COUNCIL OF SCIENCE AND TECHNOLOGY

Organized by

Amity School of Engineering and Technology
AMITY UNIVERSITY MADHYA PRADESH
GWALIOR

ABOUT MPCST BHOPAL

M.P. Council of Science & Technology was established under MP Society Registration Act, 1973 in October, 1981. Apex body of the Council is General Body and Chief Minister is the President of General Body. There are 61 members consisting of ministers and secretaries if different state department and head of the departments of Water resources, PHE, PWD, Forest, Agriculture, Industry and Technical education. In addition, 4 vice-chancellors from universities, eminent Scientist in science, Sociology and Medical sciences are nominated as member by the president. Representatives from national level research organization are also nominated. The second important body is Executive Committee and Chairman is Minister of Science & Technology Department. The Committee consists of 13 members, comprising of MLA, educationist, scientist and principal secretaries etc.

The main objective of the Council is :-

(1) To identify area in which Science and Technology can be utilized for achieving the socio-economic objectives of the State and in particular the objectives of tackling the problems of backwardness, unemployment and poverty in the rural areas and among the under-privileged sections of society such as Scheduled Castes, Scheduled Tribes, Landless Labour, Artisans, Small and Marginal Farmers and Women.

(2) To advice Government on policies and measures necessary to promote utilization of Science and Technology for achievement of the said Socio-economic objectives.

(3) To initiate, support, promote and co-ordinate such research and development projects to the achievement of specific objectives and problems and assist in the fruitful exploitation of the natural resources of the state through various institutions and organizations in the state.
.

(4) To promote the popularization of science spread, scientific temper and attitude among the people of the state and disseminate scientific knowledge by means of pamphlets, brochures, journals, books, films activity kits etc. and to organize seminar, symposium and conferences to promote science and technology. .

Besides these objectives/activities Council also advice government on policies and measures necessary to promote S&T for the achievement of socio-economic objectives of the state and supplement the activities of State Government in the field of S&T. The Council has different divisions and sections viz. Research and Development, Biotechnology Applications Centre, Remote sensing Applications Centre, Patent and Technology Management Centre, Quality Assurance Laboratory etc.

The Council is an apex autonomous body under Science & Technology Deptt., Govt. of MP. The headquarter is located at Vigyan Bhawan, Nehru Nagar, Bhopal. The Executive Head of the Council is Director General, who is also ex-officio Scientific Advisor to Govt. of MP.

ISSN: 2350-0530

FOUNDER PRESIDENT'S MESSAGE

It is widely known that in the current global economic scenario, a robust computer and communication networks infrastructure is not only key for social connectivity, but also for sustainable development and inclusive growth of the society as a whole. As we transition to and embrace new paradigms such as Internet of things, Smart Cities, Make in India etc. it is inevitable that communication technologies and signal processing will play a pivotal role in providing scalability of these new paradigms, as also in transforming India into a knowledge-led economy and society. Consequently, the potential of these technologies in Digital empowerment of citizens and job creation is, of course, immense.

It's a matter of great pride that Amity School of Engineering & Technology (ASET), Amity University Madhya Pradesh, Gwalior, is organizing One-Day **National Conference on "Communication, Integrated Networks and Signal Processing (CINSP-2018)"** on Wednesday, the 31st January, 2018.

The presence of a large number of distinguished guests from different walks of life only underlines the importance and significance of the subject to be deliberated during the Conference. I am confident the deliberations of the Conference will go a long way in dealing with many important aspects of such technologies which will also help in bringing more and more efficiency for the society benefits and also for faster development of the country. I am sure, the Conference will also provide a unique platform to all the worthy participants for sharing of their rich experiences and deep knowledge for mutual benefits and will also help in chalking out a road-map to work together in this vital area.

I extend a very warm welcome to all visionary speakers and all worthy participants and wish them fruitful deliberations and pleasant stay. I am sure that the Conference will help in chalking out a road-map and will also bring in sustainable results.

I appreciate Dr. Raghavendra Sharma, Professor & Head, Amity School of Engineering & Technology (ASET), who together with his dedicated faculty members, brilliant students and staff and under the most able guidance of Lt. Gen. V.K. Sharma, Vice Chancellor, Amity University Madhya Pradesh, having the visionary leadership of Dr. Aseem Chauhan, Chairman, Amity University Madhya Pradesh & Addl. President, Ritnand Balved Education Foundation (RBEF), made all efforts to ensure great success of this Seminar.

I wish the Conference to be greatly outcome-based, result-oriented and highly successful.

Ashok K. Chauhan

(Dr. Ashok K. Chauhan)
Founder President, Ritnand Balved Education Foundation (RBEF)
(The Foundation of Amity Institutions and the Sponsoring Body of Amity Universities)

Dr. Aseem Chauhan

Chancellor
Amity University Rajasthan
Amity University Haryana

President
Amity University Mumbai

Chairman
Amity University Madhya Pradesh
Amity University, Lucknow Campus

MESSAGE

It gives me immense pleasure and a sense of great pride that Amity School of Engineering and Technology, Amity University Madhya Pradesh, is organizing a One-day National Conference on "Communication, Integrated Networks and Signal Processing (CINSP-2018)".

Over the years significant developments have been taken place in the field of Communication Technology, Integrated Networks and Signal Processing. The ever increasing market penetration of smart-phones, and notebooks, along with the global presence of wireless networks are deeply influencing the way people live, work, interact, and socialize. It is necessary that as a nation, we keep innovating new communication systems and technologies to have a global competitive advantage. For the exponential growth of these technologies, India has embarked on a new journey towards innovations through DIGITAL INDIA and MAKE IN INDIA initiatives.

I earnestly hope that this Conference will be an excellent learning opportunity for Communication Technologies & Signal Processing researchers', industrialists and students. It will be a good platform of knowledge sharing for latest developments, mitigations and advances in Communication network security.

I wish all the success to the organizers of the conference and hope that every professional and academician participating in it will reap the benefit.

Dr. Aseem Chauhan

Prof. (Dr.) Sunil Saran

Chancellor
Amity University Madhya Pradesh

MESSAGE

I am glad to learn that Amity School of Engineering and Technology, Amity University Madhya Pradesh, Gwalior is organizing a one day National Conference on "Communication, Integrated Networks and Signal Processing" on January, 31, 2018.

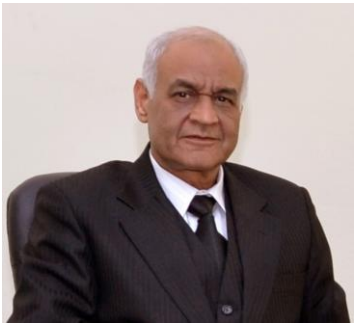
Research and development in Communication Technology, Integrated Networks and Signal Processing are significantly facilitating global information sharing leading to a tremendous growth in different sectors of industry and social networking. The Conference will provide a multidisciplinary platform for researchers and experts to address various issues related to communication and integrated networks research technology. This will also positively impact the growth of industries dealing with communication technologies and network security. I am confident that the scientific deliberations and interactions in the national conference would contribute to the aim of spreading awareness on contemporary issues, practices and future developments in Communication Technologies and Signal Processing.

I congratulate the members of the Organizing Committee for their efforts in organizing this national level conference of immense contemporary importance.

I appreciate the initiative taken by Department of Electronics & Communication Engineering for providing this type of forum for their students. I would like to express my sincere appreciation to the organizing committee for their dedicated efforts to materialize the conference. I hope that all participants will have a fruitful and beneficial conference

I wish the conference all the success.

Prof. (Dr.) Sunil Saran



Lt. Gen. V. K. Sharma, AVSM (Retd.)
Hon'ble Vice Chancellor, AUMP

MESSAGE

It is a matter of great pleasure that Amity School of Engineering and Technology, Amity University Madhya Pradesh, Gwalior is organizing a National Conference on "Communication, Integrated Networks and Signal Processing", on January 31, 2018.

The rapid proliferation of mobile phones has bridged the communication divide across geographical locations. It has empowered people and opened new opportunities, access, and possibilities few could have imagined just a decade ago. Many conventional services like banking, education, marketing, television and routine transaction payments have now converged onto a mobile screen. Startups and developers across the emerging markets are already building Mobile services and bringing the applications to the palm of users. However, the security of networks remains a challenge particularly when we take a holistic look to include the security of not only networks, but softwares, applications and most importantly, the data.

I am sure that the invited talks and technical papers presented at the conference will encompass the latest Research and Developments in the field of Communication, Integrated Networks and Signal processing. I am confident that the scientific deliberations and interactions in the National Conference would contribute to the aim of spreading awareness on contemporary issues, practices and future developments in Information and Communication Technologies.

I strongly believe that the outcomes as a result of deliberations made during the Conference by learned scientists and academia would be productive and valuable to one and all.

Lt. Gen. V. K. Sharma, AVSM (Retd.)

Prof. (Dr.) M.P. Kaushik
Hon'ble Pro-Vice Chancellor, AUMP

MESSAGE

It gives me immense pleasure and a sense of great pride that Amity School of Engineering and Technology, Amity University, Gwalior is organizing National Conference on "Communication, Integrated Networks and Signal Processing", on January 31, 2018.

In the present global economic scenario, advances in Computer and Electronics communication are contributing significantly to global economic revival and its sustainability. An awareness of current practices and learning about future trends in the industry from the perspective of latest applications and secure technologies is critical for the growth of Indian industries. It is necessary that as a nation we keep innovating new communication systems and technology to have a competitive advantage at a world stage. I am sure that the deliberations in the National Conference will meet the objective of creating awareness in the context of new Technologies in Communication, Networking and Signal Processing in the industry and also ignite a flame of curiosity in the young minds so that they step forward for development of these technologies.

I sincerely believe that the outcome of this conference will strengthen culture of innovation and will facilitate meaningful interactions among all stakeholders in Engineering Technology.

I congratulate the organizing committee for taking this initiative and extend my sincere wishes for the success of National Conference.

Prof. (Dr.) M. P. Kaushik

Maj Gen (Dr) SC Jain VSM[**] (Retd)
Director
Amity School of Engineering and Technology
Amity University Madhya
Pradesh

MESSAGE

The convention of National Conference on "Communication, Integrated Networks and Signal Processing", on 31 January 2018 aims to provide a unique opportunity to the students, academicians and industry personnel to showcase their talents in the realm of current practices in Communication, Integrated Networks, and Signal Processing and its security issues to buttress their knowledge and finesse their skills.

The participation of Experts from across the spectrum ranging from industry to academia will serve to enrich the content sand discourses in the conference leading to symbiotic Industry- Institute relationship to foster innovations.

I wish the conference a great success and hope that it will prove to be a milestone in splendor and perfection.

Maj Gen (Dr) SC Jain VSM[**] (Retd)

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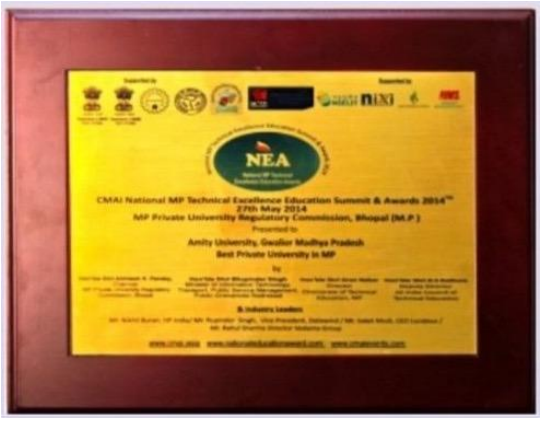
AMITY UNIVERSITY MADHYA PRUDISH



Amity University Madhya Pradesh was established by Ritnand Balved Education Foundation (RBEF) vide Madhya Pradesh Government Legislature Act of 2010 with the view to promote professional, industry-oriented education in the state of Madhya Pradesh. Amity University Madhya Pradesh, Gwalior located on a sprawling campus of 102 acres of land opposite Gwalior Airport, imparts modern, practical and research-oriented courses which will lead to the development of professionals who are employable and industry ready. This in turn will drive the socio-economic up liftment of the region.

Amity imparts education in almost all areas including management, engineering, architecture, biotechnology, law, communication, behavioral science, fine arts, fashion etc.

Amity University Madhya Pradesh was adjudged the “Best Private University of Madhya Pradesh” by CMAI Association of India and has been accredited as “Premier University” by Accreditation Service for International Colleges (ASIC).

AMITY SCHOOL OF ENGINEERING & TECHNOLOGY

Amity School of Engineering and Technology (ASET) is actively pursuing its core purpose of teaching, research and extension education in multiple and interdisciplinary areas of applied science, engineering and technology. We aspire to make our institute a global platform for engineering education to develop competent and compassionate professionals. The institute has diversified its academic initiatives on the campus while focusing on the goals of excellence and inclusiveness. We are committed to a unique synthesis of value education with academic excellence.

ASET aims at excellence in setting global benchmarks in research, teaching and training by leveraging high technology to go wider and deeper with high touch of a humane engineering school. We are in the midst of a scintillating growth story, with an objective of developing various centers of excellence in science, engineering and technology within a few years to attain academic leadership. We aspire to be a unique academic space of global reckoning by creating innovative, futuristic, socially responsible and environmentally sensitive engineering practitioners, technology leaders and educators. We are putting in place various doctoral research centers to create a pool of talent to address acute faculty shortage in engineering and technology. We are committed to become the knowledge and innovation driven university in the field of engineering and technology education.

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Additional President, RBEF (An umbrella foundation of all Amity Institutes) & Chancellor, Amity University Rajasthan, Jaipur

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Pro Vice Chancellor
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TECHNICAL PROGRAMME

National Conference
On
Communication, Integrated Networks
&
Signal Processing
Dates: 31 January, 2018
Minute - to - Minute Program

January 31, 2017
INAUGURAL SESSION: AUDITORIUM - BLOCK - B

1030-1100 hrs. : Registration

1100-1105 hrs. : Lighting of Lamp and Saraswati Vandana

1105-1110 hrs. : Welcome of Guests

1110-1125 hrs. : Opening Remarks by Lt. Gen. V. K. Sharma, AVSM (Retd.), Hon'ble Vice Chancellor, Amity University Madhya Pradesh, Gwalior

1125-1205 hrs. : Address by Chief Guest, Dr. Gulshan Rai, National Cyber Security Coordinator, Delhi

1205-1245 hrs. : Keynote Address by Dr. K K Pattanaik, IIITM, Gwalior

1245-1250 hrs. : Release of E-Souvenir

1250-1300 hrs. : Memento Presentation

1300-1400 hrs. : **Lunch Break**

GUEST SPEAKERS & PAPER PRESENTATION: BLOCK – A

1400-1440 hrs. : Keynote Address by Dr. A.T Nimal, Scientists-F, SSPL, Delhi

1400-1440 hrs. : Paper/Poster Presentation (Parallel Session)

VALEDICTORY SESSION: SEMINAR HALL - BLOCK – A

1500-1505 hrs. : Felicitation of Guests

1505-1540 hrs. : Valedictory Address by Dr. Kamalijit Rangra, Chief Scientist and Head Transducers and Actuators, CEERI-Pilani

1540-1555 hrs.	: Concluding Remarks by Prof. (Dr.) M P Kaushik, Hon'ble Pro-Vice Chancellor, Amity University Madhya Pradesh, Gwalior
1555-1610 hrs.	: Distribution of Prizes for Best Paper/Poster & Group Photo
1610-1620 hrs.	: Memento Presentation
1620-1630 hrs.	: Vote of Thanks by Prof. (Dr.) Raghvendra Sharma, HOD-ECE (Secretary-CINSP-2018)
1630-1700 hrs.	: Tea

CHIEF GUEST

Dr. Gulshan Rai

Dr. Gulshan Rai holds an M.Tech and Doctoral degree and has over 30 years of experience in different areas of Information Technology which include different aspects of e-Governance, cyber security, cyber laws and several related fields. At present, he is National Cyber Security Coordinator, Government of India in the Office of Prime Minister. Prior to that he was in the Ministry of Electronics & Information Technology. He held the prestigious post of Director General, CERT-In (Indian Computer Emergency Response Team) and headed E-Security & Cyber Law Division, STQC and other Divisions. He has led the team to put in 2nd Technological Legislation the Information Technology Act, 2000. Such a legislation feed to other legislations.

He is a member of Data Protection Committee. He has also led the team to set up National Watch and Alert System in the country as part of cyber security initiative and Computer Emergency Team. Several international cooperation agreements have been entered under his leadership.

He led a team from time to time to draft and bring out National Policies in the area of cyber security and cyber laws. He was Executive Director, ERNET India for over 7 years and was instrumental in setting up of the first large scale education and research network in close collaboration with the leading educational and research institutions in the country. During his tenure, the project of National Knowledge Network was evolved and designed. He has been leading team, designing and implementing IT solutions in the areas of Finance, Taxes and Law & Order.

CHIEF GUEST

Dr. K J Rangra

Dr. K J Rangra is head transducers and actuators group, CSIR central electronics research institute, Pilani. He is chief scientist and professor at academy of Scientific and Innovative Research CSIR, New Delhi. He has done MSc (Phy.), ME (BITS Pilani), PhD (University of Trento, Italy). He is the fellow member of various professional societies; (i) IETE (The Institute of Electronics and Telecommunication Engineers) (ii) IE (The institute of Engineers) (iii) MSI (Metrology Society of India) (iv) Secretory: SSI (Semiconductor Society of India) and IPA (Indian Physics Association).

His current research projects has been sponsored by: CNR Italy and CSIR India, DRDO, ISRO and DST.

He also folds various prestigious positions such as 1. Honorary Professor (Indian Institute of engineering Science and Technology, Shibpur, West Bengal) 2. Chairman (Electrical and Civil Engineering Group, CEERI) 3. Nodal Officer and Project Leader (Supra Institutional Project) 4. Member (Board of UG Studies in Electronic Science, KU, Kurukshetra.

He has visited many institution across the world as a researcher which includes: (i) Herriot Watt University, Edinburgh, UK (ii) University of Bologna, Italy (iii) Bremen University, Germany.

He was a Consultant at Italian Institute for research in Science and Technology (BKF-IRST), Bruno Kessler Foundation, Italy.

His research interests includes: Designing, Modelling and Fabrication of high frequency MEMS devices and systems, Vacuum Microelectronics, MEMS packaging technology, Digital micro-mirror devices for imaging, IR-MEMS detectors, RF and optical MEMS, Analytical Techniques for devices and materials and MEMS process-design.

He has to his credit 126 publication in various national and international journals. At present he is guiding PhD Scholars and M.Tech Students.

KEYNOTE SPEAKER-1

Dr. Theodore Nimal

Dr. A. Theodore Nimal received his BSc (1991) and MSc (1993) in Physics from Government Arts College, Bharathiar University, Coimbatore and PhD (2004) in Physics from National Physical Laboratory, Delhi, and University of Delhi, Delhi. He is working as a scientist at Solid State Physics Laboratory, Defence Research and Development Organization (DRDO), Delhi since 1997 in the field of Surface Acoustic Wave (SAW) Devices, Sensors and e-Noses. He is presently leading a group of scientists involved in the development of SAW Electronic Nose chemical sensors for the detection of hazardous gases known as Chemical Warfare agents.

His present research interests are in SAW sensor systems, electronic noses and SAW wireless passive physical sensors, which include development of SAW device design, electronics, Gas Chromatography subsystem and sensor characterization. He was also involved in the development of SAW pulse compression radar subsystem and SAW biosensors for e-coli contamination of water. He has also worked in the field of high TC superconducting thin films and transition edge bolometer IR sensors during his PhD at NPL.

He was involved and completed four DRDO projects including the recently completed Mission Mode project. He is a recipient of various DRDO awards such as Technology Group Award, Technology Day Award, Young Scientist Award and Merit Award. He has guided four students for PhD and presently guiding two students for the same. He has about 40 national and international publications and 4 patents in the field of SAW.

KEYNOTE SPEAKER-2

Dr. K.K. Pattanaik

Dr. K K Pattanaik received Diploma in Electronics and Telecommunications from State Council of Technical Education (Orissa) in 1992, Bachelor of Engineering in Electrical & Electronics Engineering from Kuvempu University, Shimoga, in 1997, Master of Technology in Computer Science & Engineering from Motilal Nehru National Institute of Technology Allahabad (formal MNREC) and subsequently, PhD in Engineering with Computer Science as major form Birla Institute of Technology-Mesra, Ranchi in the year 2010. Currently, a full time faculty at ABV-Indian Institute of Information Technology & Management Gwalior, MP, India. His main research interests are Distributed Systems, Grid Computing and Mobile Computing. He has been associated with reputed academic setups since 2004 and contributed in various dimensions to the academic and research sphere. He enjoys in pursuing cross-disciplinary research focusing on application of computing sciences and communication. He has been associated with several national and international government funded projects and contributed a decent number of scientific articles in very reputed journals. Besides his scholarly world he enjoys cycling, driving, cooking.

.

ABSTRACTS OF PAPERS

KS-OP-1

SAW Signal Processing Devices, Sensors and e-Nose

Dr. Theodore Nimal
Scientist, Solid State Physics Laboratory
DRDO
nimal@sspl.drdo.in

ABSTRACT

Surface Acoustic Wave (SAW) devices are signal processing devices. Using the principles of digital signal processing various types of devices such as delay lines, tapped delay lines, filters, resonators, dispersive delay lines, RFID etc can be realized. By suitable modifications these devices can be used as variety of sensors for physical, chemical and biological sensing owing to its extreme sensitivity to mass loading, temperature, stress and strain. SAW devices can be used as chemical vapour/gas sensors as they are extremely sensitive, rugged and easily integrated with electronics. In real world situation due to the presence of multiple vapours, in order to detect the target analyte of interest, an improvised class of sensors called electronic Noses (e-Nose) are required. SSPL, DRDO has developed SAW e-Nose for Chemical Warfare Agents at present. This talk would cover principles, design and fabrication of SAW devices, SAW sensors, SAW e-Noses and developments at SSPL.

KS-OP-2

Quality of Service Centric Future Internet: What it means and what not!

Dr. K.K Pattanaik
Associate Professor
ABV-IIITM, Gwalior
kiran_patnaik12@rediffmail.com

ABSTRACT

The Internet probably is one the few revolutions that technology has been able to penetrate and influence almost every sphere of human life. The major stake holders are its end users that use it as a service and the other is the application service providers who try to maximize their return on investment. The unprecedented growth of both these stake holders have put enormous challenges in providing the best of quality associated to the delivery of their respective services. Quality with respect to the service over Internet has different contexts of the type of service being provided. Application of computing and communication technology has brought together several disciplines of human mankind to explore and venture into each other's sphere and find the innovative ways to deal with various cross-domain opportunities.

In this context the future Internet infrastructure will host more network traffic generated not by humans, but by the embedded devices and intelligent software agents. The huge amount of information appearing in the network and their processing added to the nomadic nature of the end users will bring in enormous opportunities to think about the issues and challenges in providing better QoS centric Internet.

CINSP-01

Energy Efficient Routing Protocol for Increasing Lifetime of Wireless Sensor Network

Tanya Pathak[1], Vinay Kumar Singh[2], Anurag Sharma[3]
1, 3: Department of Computer Science & Engineering, Agra College, Agra (U.P)
2: Department of Computer Science & Engineering, AEC, Agra (U.P)
anurag121097@rediffmail.com, tanya.pathak06@gmail.com, vinay.singh@sgei.org

ABSTRACT: In the recent years, an efficient design of a Wireless Sensor Network has become important in the area of research. The major challenges in the design of Wireless Sensor Network is to improve the network lifetime. The main difficulty for sensor node is to survive in that monitoring area for the longer time that means there is a need to increase the lifetime of the sensor nodes by optimizing the energy and distance.
There are various existing routing protocols in which optimal routing can be achieved like Data-Centric, Hierarchical and Location-based routing protocols. In this paper, new power efficient routing protocol is being proposed that not only select the shortest path between the source node and sink node for data transmission but also maximizes the lifetime of the participating nodes by selecting the best path for sending the data packet across the network. The main objective of this research is to develop a faster algorithm to find the energy efficient route for Wireless Sensor Network. Simulation results shows that this strategy achieves long network lifetime when compared to the other standard protocols.

Keywords: Wireless sensor network, Energy Efficient Routing Protocols, Energy Consumption.

CINSP-02

A Toolbox Design for Laboratory Application of Electronic Nose Using Virtual Instrumentation

Mohammad Ayub Khan[1], Prakash Chandras[2], Pratibha Mishra[3], Rajansh Sinha[4]
1, 4: Department of Electronics and Communication Engineering, AEC, Agra (U.P)
2: Department of Electronics and Communication Engineering, SIET, Greater Noida (India)
3: Department of Electronics and Communication, RKGEC, Ghaziabad (India)
ayubkhan48@gmail.com, prakash4779@gmail.com, pratibha.mishra0000@gmail.com

ABSTRACT: The tool consists of several virtual instrumentation allowing the implantation of the different measurement technique that are commonly used in this research field. what follows describes an integrated system that automatically controls the composition of the mixture under analysis, provides set up for both the virtual instrumentation and customs electronics, and perform the selected class algorithms for features extraction, data dimensionality reduction and classification. Assisting perspective task to virtual instrumentation controlling the entire system gives us the possibility to avoid the presence of error due to human control. Such systems, and in particular those designed for research application, utilize a large number of sub system for chemical sampling control, for signal generation and acquisition, and for data manipulation. This paper describes a tool box of virtual instrumentation developed for research purposes and based on a laboratory electronics nose.

Keywords: Electronic noise, SnO2 sensor, Virtual instrumentation.

CINSP-03

Moisture and pH Detection using Sensors and Automatic Irrigation System using Raspberry Pi based Image Processing

Shetty Sagar, Bardhan Debjeet, Lokhande Advait, Nitish Mishra
Department of Electronics Engineering
Datta Meghe College of Engineering, Airoli, Navi Mumbai, Maharashtra, India
shettysagar35@gmail.com

ABSTRACT: India's population rate is increasing day by day. In near future, we could face serious problem of food and other daily necessities, hence the development of agriculture is necessary. Today, the farmers are suffering due to inconsistent rains and scarcity of water. The main objective of this paper is to provide an automatic irrigation system, thereby saving their time, money & power of the farmer. The traditional farm-land irrigation techniques require manual intervention. With the automated technology of irrigation, the human intervention can be minimized. There will be moisture sensors installed on the field. Whenever there is a change in water content of soil these sensors sense the change gives an interrupt signal to the micro-controller. As soil is recognized as one of the most valuable natural resource whose pH property used to describe the degree of acidity or basicity which affect nutrient availability and ultimately plant growth. For capturing the images, a camera is used and after processing the captured image the pH value of the soil is determined and accordingly crops or plants are suggested that can be grown in that field. Due to detection of soil pH value, we can reduce the chances of crops being destructed.

Keywords: Runoff, SDK, Solenoid.

CINSP-04

Parameter Determination of Hydraulic Dynamometer

Mohammad Ayub Khan, Suraj Singh, Avanish Yadav, Gunjan Gupta
Department of Electronics and Communication Engineering
Anand Engineering College, Agra (U.P)
ayubkhan48@gmail.com, ss1516199@gmail.com, avanish0196yadav@gmail.com

ABSTRACT: This project basically deals with the parameter determination of Hydraulic Dynamometer using LabVIEW. LabVIEW is the programming tool that is mainly used for automation purposes. Herein, the manual setup of Hydraulic Dynamometer will be made digital and we will judge the parameters like Load cell, various temperatures etc by interfacing the digital set-up with our manual set-up. The Load Cell that will be used is mainly S-shaped Load cell and the various temperature sensors are also used to determine the various temperatures like water inlet temperature, water outlet temperature, air temperature etc. After measuring these parameters separately in their respective devices, we will be interfacing these devices with the manual dynamometer system. After interfacing, there will be separate meters installed wherein we will view the parameters measured by the system.

Keywords: Hydraulic Dynamometer, SnO2 sensor, Load Cell.

CINSP-05

Design and Analysis of an Intelligent Fire Detection System for Aircraft

Amit Yadav, Manik Chandra, Abhijeet Agarwal, Pramod kumar, Tejesawi Sachwani
DEI Dayalbagh, Agra (U.P)
amitphd2@gmail.com, agarwal.abhijeet7@gmail.com, pra14327@gmail.com

ABSTRACT: Fire detection system and fire warning are design features of an aircraft. Fire detection system protects the aircraft and passengers both in case of actual fire during flight. But spurious fire warning during flight creates a panic situation in flight crews and passengers. The conventional fire alarm system of an aircraft is triggered by false signal. ANN based fire detection system provides real observation of deployed zones. An intelligent fire detection system is developed based on artificial neural network using three detection information such as heat (temperature), smoke, density and CO gas. This information helps in native. Fire condition which is Fire, smoke and no fire. The simulated MATLAB results Show that the errors in identification are very less. The neural network based fire detection system integrates different types of sensor data and improves the ability of system to correct prediction of fires. It gives early alarm when any kind of fire broke out and helps to decrease in spurious warning.

Keywords: fire detection, artificial neural network, simulation, Back propagation, intelligent fire alarm.

CINSP-06

Power Saver Street Lighting Using Microcontroller Atmega16

Nancy Gupta, Karan Sharma, Kunal Mandil
Department of Electronics and Communication Engineering
Medicaps Institute of Technology and Management, Indore
1209nancy@gmail.com, karan.sharma3196@gmail.com, kunalmandil47@gmail.com

ABSTRACT: Street lights remain illuminated for whole nights and most of them used for lighting-up of highways are high energy consumption lamps. Preservation and sustainable use of energy and resources is an important factor of planning and development these days as Natural resources are depleting day by day, which pose a risk of scarcity and non-availability of the same for our presenting generations. There is an acute need for devising a well thought out plan to prevent wastage of electricity (produced by using natural resources). Perhaps, the government should think of implementing automatic street light control systems using LDR (light dependent resistor), which automatically switches off lights when sunlight falls on them. This review paper illustrates the street light illumination system automated by the movement (frequency) and density of vehicles on that particular street. The crux of this paper is to emancipate the necessity and usage of street light control systems which combines various technologies viz Timers, Photodiodes, Light Emitting Diodes (LED), and IR Sensors. The most viable and interesting feature of this peculiar system lies in its power regulation system as the intensity of street lights can also be controlled in accordance to requirement using the same system with a few adaptation and modifications quite easily. This project will be implemented with the help of microcontroller ATMEGA16.

***Keywords*:** LDR, LED, Photodiodes, Microcontroller.

CINSP-07

E Shape Micro-strip Patch Antenna with Rectangular and Circular Slot

Priyanka Jain[1], Raghavendra sharma[2], Vandana Vikas Thakre[3]
1, 2: Department of Electronics and Communication Engineering, AUMP, Gwalior
3: Department of ECE, Madhav Institute of Technology and Science, Gwalior
prija.jain@gmail.com, rsharma3@gwa.amity.edu, vandanavt_19@rediffmail.com

ABSTRACT: In this proposed design a Rectangular E shaped micro-strip patch antenna is present with rectangular and circular slot within the Rectangular patch which operate at frequency 2.4 GHz. By proposed antenna design and coaxial feeding at suitable place the resultant return loss, VSWR and bandwidth will be find out. For the propose microstrip antenna we have use FR-4 substrate which contain permittivity of 4.4 and thickness 1.5, loss tangent is 0.02. HFSS simulation software is used for designing and analysis.

Keywords: Micro-strip patch antenna, L-shape, Multi-band, bandwidth, HFSS.

CINSP-08

Big Data Analysis in Health Care Domain: A Systematic Review

Abhishek Bajpai, Sanjiv Sharma
Department of Computer Science & Engineering, MITS, Gwalior (M.P)
abhishekbjp222@gmail.com, er.sanjiv@gmail.com

ABSTRACT: As the Volume of the data generating is increasing day by day in our society, the exploration of big data in healthcare is increasing at an unprecedented rate. In this paper an effort is made to demonstrate that even the healthcare industries are stepping into big data pool to take all benefits from its various advanced tool and technologies. This paper present the review of various research efforts made in health care domain using big data concept and methodologies. Its methodologies can be used for the healthcare data analytics which help in better decision making to increase the business value and customer interest and to provide E-Health services among various health are stack holders by using Digital imaging and communication in Medicine (DICOM).Data Techniques can be applied to develop system for early diagnosis of disease , understanding connection between HATS (HIV / AIDS Tuberculosis and silicosis).Further the paper includes the various Big data tools , challenges and opportunities followed by the concluding the remarks.

***Keywords*:** Big data analysis, data mining, machine learning, Map Reduce.

CINSP-09

An Approach to Crime Data Analysis: A Systematic Review

Deepika Tyagi, Sanjiv Sharma
Department of Computer Science & Engineering, MITS, Gwalior (M.P)
tyagideepika39@gmail.com, er.sanjiv@gmail.com

ABSTRACT: In the current era, number of crimes occur in the society and this criminal rate increase day by day. There is tremendous growth of criminal data. Crime has negatively influenced the societies. Crime control is essential for the welfare, stability and development of society. Law enforcement agencies are seeking for the system to target crime structure efficiently. The intelligent crime data analysis provides the best understanding of the dynamics of unlawful activities, discovering patterns of criminal behavior that will be useful to understand where, when and why crimes can occur. There is a need for the advancements in the data storage collection, analysis and algorithm that can handle data and yield high accuracy. This paper demonstrates the data mining technologies which are used in criminal investigation. The contribution of this paper is to highlight the methodology used in crime data analytics. This paper summarizes the challenges arising during the analysis process, which should be removed to get the desired result.

Keywords: Crime data analysis, data mining, machine learning, big data.

CINSP-10

Data mining Techniques for Educational Data: A Review

Pragati Sharma, Sanjiv Sharma
Department of Computer Science & Engineering, MITS, Gwalior (M.P)
pragatisharmacool@gmail.com

ABSTRACT: Recently, data mining is gaining more popularity among researcher. Data mining provide various techniques and method for analyzing data produced by various applications of different domain. Similarly, Educational mining is providing a way for analyzing educational data set. Educational mining concerns with developing methods for discovering knowledge from data that come from educational field and it helps to extract the hidden patterns and to discover new knowledge from large educational databases with the use of data mining techniques and tools. Extracted knowledge from educational mining can be used for decision making in higher educational institutions. This paper is based on literature review of different data mining techniques along with certain algorithms like classification, clustering etc. This paper represents the effectiveness of mining techniques with educational data set for higher education institutions.

Keywords: Data mining, Educational Mining, Classification, Clustering

CINSP-11

Review of Energy Minimization Techniques in Wireless Sensors Network

Basantilal Mubel, Sachin Goyal, Ratish Agrawal
SOIT RGPV, Bhopal
basantmuwel@gmail.com, Sachin.goyalrgpv@gmail.com, ratishagrawal@rgtu.net

ABSTRACT: The current decade of technology trends adopted the utilization of wireless sensors network. The wireless sensors network integrates with cloud based services and facilitate in every field of social engineering. The success story of sensors based network is utilization of energy. The sensor devices occupied tiny battery for energy. If the energy utilization is not maintained the life of network is expire. In this paper present the review of energy based protocol used in wireless sensor network. The maximum utilization of energy during the sensing of data of sensors node. Some authors used dual duty cycle for the sensing of sensor data and transmit data to sink node.

Keywords: WSN, Energy, Duty cycle, MAC, clustering.

CINSP-12

Compressive Sensing

Abhilasha Sharma
Department of Electronics Engineering
Madhav Institute of Technology and Science, Gwalior
dubeyabhilasha7@gmail.com

ABSTRACT: Compressive sensing is a relatively new technique in the signal processing field which allows acquiring signals while taking few samples. It works on two principles: sparsity, which pertains to the signals of interest, and incoherence, which pertains to the sensing modality. Since, in conventional system all signals follow the Nyquist criteria, in which the sampling rate must be at least twice the maximum frequency of modulating signal. But, in this new concept we can recover the signal below the Nyquist rate. This paper presents the basic concept of compressive sensing and area of applications, where we can apply this technique.

Keywords: Compressive Sensing, Sparsity, L1-norm.

CINSP-13

Analysis of UWB Based Antenna for Wireless Communication

Shetty Sagar, Rohit Hajare, Kriti Gupta, Namrata Bhagat
Department of Electronics Engineering
Datta Meghe College of Engineering, Navi Mumbai, Maharashtra, India
shettysagar35@gmail.com

ABSTRACT: Ultra-wideband wireless communications techniques have many merits, including an extremely simple radio that inherently leads to low-cost design, large processing gain for robust operations in the presence of narrowband interference, covert operations, and fine time resolution for accurate position sensing. However, there are a number of challenges in UWB receiver design, such as capturing multipath energy, inter symbol interference especially in a non-line-of-sight environment, and the need for high-sampling-rate analog-to-digital converters.
Micro strip Patch antenna (MPA) provides low profile and low volume, so it is use in a now a days communication devices. In this paper study of past few year shows that most of labour on MPA is targeted on planning compact sized micro strip antenna. A novel ultra-wideband printed monopole antenna can be used in wireless communication devices

Keywords: UWB, Micro strip Patch Antenna, Operating frequency, communication devices.

CINSP-14

Power Reduction Technique in VLSI

Mehar Sharma, Neeraj Gupta
Amity University Harayana, Gurgaon
mehr111991@gmail.com

ABSTRACT: The paper investigates different level of techniques used for power reduction in VLSI. Before, most of the researches were oriented towards bringing about high speed and miniaturization. At present, because of the increasing trend of compact devices, the requirement for low power consuming circuits have also increased. This necessitates the need to align the research for reducing power dissipation in VLSI circuits. In the given paper we will briefly discuss about the different types of power reduction techniques at design abstraction level which are adopted in industries now-a-days. The comparison of traditional techniques and present techniques are also covered in this paper.

Keywords: Gating Technique, Back biasing, FET, Multi-threshold devices, Power dissipation.

CINSP-15

High Speed Adder Using GDI Technique

Merrin Mary Solomon, Neeraj Gupta
Amity University Harayana, Gurgaon
mesairsolomon@gmail.com

ABSTRACT: Full adder is an important component for designing a processor. As the complexity of the circuit increases, the speed of operation becomes a major concern. Nowadays there are various architectures that exist for full adders. In this paper we will discuss about designing a low power and high speed full adder using Gate Diffusion Input technique. GDI is one of the present day methods through which one can design logical circuits. This technique will reduce power consumption, propagation delay, and area of digital circuits as well as maintain low complexity of logic design. The performance of the proposed design is compared with the contemporary full adder designs.

Keywords: Gate diffusion input, Full adder, Power dissipation, CMOS logic, Delay.

CINSP-16

Low Power VLSI Techniques for Portable Devices

Sandeep Singh, Neeraj Gupta, Rashmi Gupta
Amity University Harayana, Gurgaon
sandeep.engg88@yahoo.com

ABSTRACT: In the present day scenario, designing a circuit with low power has become very important and challenging task. The designing of any processor for portable devices demands low power. This can be achieved by incorporating low power design strategies and rules at various stages of design. To increase the performance of portable devices, the power backup should be taken in consideration, which is extremely desirable from the users prospective. As we approaches towards the sub-micron technology the requirement of low power devices increases significantly. But at the same time leakage current and dynamic power dissipation play a vital role to diminish the performance of portable devices. This paper presents techniques to reduce the power dissipation and various methodologies to increase the speed of device. That is very beneficial for designing of future VLSI circuits.

Keywords: Leakage current, Dynamic power dissipation, CMOS, Clock Gating, Parallelism.

CINSP-17

Data Mining in Health Prediction

Amit Kumar Mishra, Shivangi Sahu, Anjali Gautam
Department of Computer Science and Engineering
Anand Engineering College, Agra
aec.amit@gmail.com

ABSTRACT*:* Data mining is about analyzing data and finding hidden patterns using automatic or semiautomatic means. This paper is to predict the health of the students on the basis of their past and present health issues. As huge amount of information is produced in medical associations (healing facilities, therapeutic focuses) yet this information is not properly utilized. The health care system is "data rich" however "knowledge poor ". There is an absence of successful analysis methods to find connections and patterns in health care data. Data mining methods can help as remedy in this circumstance. For this reason, different data mining techniques can be utilized. Data mining has great importance for area of medicine, and it represents comprehensive process that demands thorough understanding of needs of the health-care organizations. Knowledge gained with the use of techniques of data mining can be used to make successful decisions that will improve success of health-care organization and health of the patients. Data mining requires appropriate technology and analytic techniques, as well as systems for reporting and tracking which can enable measuring of results. The paper intends to give details about various techniques of knowledge abstraction by using data mining methods that are being used in today's research for prediction of heart disease. In this paper, data mining methods namely, Naive Bayes, Neural network, Decision tree algorithm are analyzed on medical data sets using algorithms.
At the end of this paper we will get a protocol to predict the health issues a person is likely to face and it will help in diagnosing the diseases at an early stage.

Keywords: classification, artificial intelligence, Genetic algorithm, clustering, neural network applications, knowledge acquisition, learning systems.

CINSP-18

An EOQ Inventory Model using Ramp type demand with deterioration and Shortages

S.P Singh, Ajay Soni
Department of Mathematics, L.N.C.T, Bhopal
prof_sps@yahoo.co.in, ajay.mvm01@gmail.com

ABSTRACT: In this paper an EOQ Inventory model is developed in which inventory is depleted not only by demand also by deterioration, here demand rate is a ramp type function of time also the in this model shortages are allowed. The model is solved analytically by enumerating two possible shortages models to obtain the optimum solution.

Keywords: Inventory model, Ramp type demand, Deterioration, Shortages.

CINSP-19

A Survey of Cyber-Security Awareness in Saudi Arabia.

Gunjan Khanchandani
Department of Computer Science and Engineering
Amity University Madhya Pradesh, Gwalior
gunjansindhi56@gmail.com

ABSTRACT: In the sending of correspondence advances and the utilization of the Internet over the globe, The Quick improvement has been seen. In regular day to day existence, Data trade is the fundamental part of utilization of such advancements. Violations related with the abuse of data on the Internet are on the expansion and are bringing about different misfortunes. Saudi Arabia is one of the speediest creating nations in the Middle East, where the take-up of correspondence advancements, for example, the Internet and portable innovations has risen pointedly lately. These advances are generally new to the locale when contrasted with created nations. In this way, the wrongdoings related with these advancements might be new to the general population in the area. This paper examines the digital security familiarity with the general population in Saudi Arabia inside various settings. A quantitative online based study was directed to assemble data identified with digital security mindfulness in Saudi Arabia. The review found that, despite the fact that the members had a decent learning of IT, their consciousness of the dangers related with cybercrime, digital security rehearses, and the part of government and associations in guaranteeing data wellbeing over the Internet, is exceptionally restricted. An application based model to make digital security mindfulness in the district was favored by the dominant part. The outcomes showed that, in spite of the fact that cybercrime is on the ascent, no particular approach is being taken after to increment digital security mindfulness in the district with the exception of CERT directions and online data on government sites. Also, Chi-Square test outcomes ($t(627)=3.85$, $p=0.013$) showed that Internet abilities affect digital security hones from the clients' end and there is a relationship between aptitude level and the safety efforts being executed by associations in the locale. The review found that there is a prompt need to build up a model to make digital security mindfulness in the locale with a specific end goal to battle cybercrime.

Keywords: Cyber-Security, Cyber-Crime, Data Trade, CERT

CINSP-20

A Review of Novel Approach for Reduction in Sub Carrier Peak to Average Power Ratio in Orthogonal Frequency Division Multiplexing

Manju Sangar [1], Brijendra Mishra[2], Bhupendra Verma [3]
1, 3: Department of ECE, Nagaji Institute of Technology & Management, Datia, India
2: Department of ECE, Nagaji Institute of Technology & Management, Gwalior, India
krishnaitgwalior@gmail.com, brijendra.mishra07@gmail.com, bhupendra.kumar74@gmail.com

ABSTRACT: In last few decades the demand for multimedia data services has grown up fastly. One of the most promising multicarrier system, Orthogonal Frequency Division Multiplexing (OFDM) allow large number of capacity the number of subcarriers, high data rates and ubiquitous coverage with high mobility. But OFDM is extensively affected by peak to average power ratio (PAPR). Unfortunately, the high PAPR inherent to OFDM signal envelopes will frequently drive high power

amplifiers (HPAs) which are operate in the nonlinear region. The nonlinearity of the High Power Amplifier exhibits phase and amplitude distortions, which causes loss of orthogonality between the subcarriers, also (ICI) is introduced in the source signal. This dissertation is basically focused on PAPR reduction in OFDM system and measuring BER in different Modulation Technique. In PAPR reduction Signal companding methods have low complication, high distortion and spectral properties; however, we have limited PAPR reduction capabilities. Partial transmit sequences (PTS) and selected mapping (SLM), have also been considered for PAPR reduction. Such kind of techniques are very efficient and distortion less, Also the SLM is very good technique to the PAPR problem in single carrier system. This method has low complexity as well as it is data independent.
In this paper, we are describing a combine technique of SLM and PTS to minimize the PAPR. In PTS scheme, number of sub blocks increases; the IFFT block to be performed for sub blocks also increases. Simulation results have shown that the reductions of PAPR of proposed scheme is more than PTS and SLM methods as well as the difficulty reduced considerably.

Keywords: OFDM (Orthogonal Frequency Division Multiplexing), PTS (Partial transmit sequences), ADSL (Asynchronous Digital Subscriber Line), BASK (Binary Amplitude Shift Keying).

CINSP-21

Triple Band Hybrid Cylindrical Ring Dielectric Resonator Antenna for -Band Applications

Deepika Pathak[1], Sudhir Kumar Sharma[2], Vivek Singh Kushwah[3]
1, 2: Department of Electronics Engineering, Jaipur National University, Jaipur, Rajasthan, India
3: Department of Electronics Engineering, Amity School of Engineering & Technology, Gwalior, India
Deepikapathak26@gmail.com, sudhir.732000@gmail.com, vskushwah@gwa.amity.edu

ABSTRACT: This article presents a triple band hybrid cylindrical Ring Dielectric resonator antenna. The proposed antenna consists of Ring Dielectric resonator antenna and has a reformed pentagon shaped slot antenna. By the help of HFSS simulation software this proposed antenna has been designed. The return loss of the proposed antenna is -16Db, -20Db, -15Db respectively at frequency of 4.7GHz, 6.1GHz, 7.5 GHz respectively. The proposed antenna is applicable for c-band applications.

Keywords: Slot antenna, Ring Dielectric resonator antenna, Gain, Radiation pattern, C Band Applications.

CINSP-22

Design and Analysis of a Modified Ground Plane Microstrip Patch Antenna Using Co-Axial Feed

Rahul Tiwari[1], Ashish Bagwari[2], Vivek Singh Kushwah[3], Abhishek Sengar[4]
1: Department of Electronics and Communication Engineering, Medi-Caps University, Indore
2: Department of Electronics Engineering, WIT, UTU Dehradun
3: Department of Electronics and Communication Engineering, Amity University, Gwalior
4: Department of Electronics and Communication Engineering, ATC, Indore
engg.abhi20@gmail.com, rahulcktd@gmail.com

ABSTRACT: A wandered probe-fed rectangular microstrip patch antenna (RMPA) with rectangular slots on a finite ground plane with dielectric material substrate (4.4) is proposed in this paper. The proposed antenna finite ground plane dimension is only 18 mm x 21 mm. The simulated result shows two distinct resonant frequencies at 4.5 and 9.5 GHz. A 10-dB wide-impedance bandwidth of 1000 MHz and 4100 MHz ranging from 3.8-4.8 GHz and 5.9–10 GHz is achieved. The proposed antennas have achieved wider bandwidth (51.3%) with reasonable gain (4 dBi). The antenna configuration and parametric study have been carried out with the help of a commercially available IE3D simulator, and a good accordance is perceived in the simulated results. The analysis of performance criteria and almost consistent radiation pattern make the proposed antenna a suitable candidate for satellite communication and radar applications.

***Keyword*:** Rectangular microstrip patches antenna (RMPA), rectangular slot, Ground plane, IE3D software.

CINSP-23

Hybrid approach for Human Facial Expression detection through TLBO & PFEF

Samta Jain Goyal[1], Arvind K. Upadhyay[2], R. S. Jadon[3], Rajeev Goyal[4]
1, 2, 4: Department of Computer Science & Engineering, Amity University, Gwalior (M.P)
3: Department of Computer Science & Engineering, MITS, Gwalior (M.P)
sjgoyal@gwa.amity.edu, akupadhayay@gwa.amity.edu, drrsjadon@mitsgwalior.in

ABSTRACT: This paper introduces facial expression detection method which is based on facial's selected feature and optimized those selected features. The study says that human face generally faced generally consist of skin color, texture shape and size of face in this paper we study skin color and texture of human face .This process consist two steps for the same. In first known as detection of expression which uses PFEF (partial feature extension function) & in second, for optimization we used TLBO algorithm is basically a population base searching technics. Also uses soft computation technics because we cannot actual and accurate for human related activity. Varieties of technic are used for the same purpose this as per use hybrid approach to get better result.

Keywords*: TLBO, PIFR, PFEF, Feature Extraction.*

CINSP-24

Determination of Moisture Content in Soil Based on Oven Drying Method Using a Micro-strip Patch Sensor

Sweety Jain[1], Pankaj Kumar Mishra[2], Vandana Vikas Thakare[3]
1: Department of Electronics, Amity University Gwalior (M.P)
2: Department of Applied Physics, Amity University Gwalior (M.P)
3:mDepartment of Electronics, MITS, Gwalior (M.P)
1502sweety@gmail.com , pmishra@gwa.amity.edu , vandana@mitsgwalior.in

ABSTRACT: The design and analysis of a pentagon shape of micro-strip sensor for determination the soil moisture measurement. Moisture content determination in agriculture engineering is a common process which needs special sensors with high accuracy, durability and compatibility with the measurement environment. A new 2.3 GHz soil moisture sensor using micro-strip transmission line is presented with good return loss -28dB and gain 3.2dB. The main advantages of the proposed sensor will be its high accuracy, quickness of measurement, low cost and ease of implementation. Since the sensor has low power consumption.

Keywords: Micro-strip sensor, Moisture content, CST, Vector network analyzer, Reflection Coefficient, Magnitude and Phase, Gain.

CINSP-25

High Power with Low Frequency Wireless Power Transmission through Magnetic Coupling

Prakhar Singh Bhadoria[1], Raghavendra Sharma[2], Bhoopendra Singh[3]
1, 2: Department of Electronics and Communication Engineering, AUMP, Gwalior
3: University Institute of Technology, Bhopal (M.P)
Bhadoria.prakhar01@gmail.com, rsharma3@gwa.amity.edu

ABSTRACT: A new method of electrical wireless power transfer has been parameterized and experimentally verified for a variety of size-scales and applications. Its performance parameters such as power, range and efficiency are within the same order of magnitude as previously known resonant inductive power transfer devices. However, it has the distinct benefit of operating at much lower operating frequencies. A theoretical model of the new system has been developed with sufficient detail to characterize and predict experimental behaviour of various sizes. The theoretical treatment has been divided into three main interactions: the motor, the generator and the magnetic gear. The mechanism for operation, as well as a model for efficiency and losses have been developed for each interaction. The design and construction of the devices are outlined for large scale as well small scales. Misalignment tolerance between the transmitting device and the receiver device was experimentally investigated, and related control schemes for managing the power transfer were implemented and tested. Additionally, the potential risk to human health from the time-varying magnetic field produced by this system was evaluated.

Keywords: Wireless power transmission, power efficiency transmission, induction coupling, permanent magnets, electrical machines & gea.

CINSP-26

A Survey on UWB Wearable Antenna for Body Area Network Application

Rovin Tiwari[1], Raghavendra Sharma [2], Rahul Dubey[3]
1, 2: Department of Electronics and Communication Engineering, AUMP, Gwalior
3: Department of Electronics and Communication Engineering, MITS, Gwalior
rsharma3@gwa.amity.edu

ABSTRACT: A body wearable antenna (BWA) is a hotly research issue for the examination. In this paper different kind of receiving antennas are displayed which are as of now accessible in writing. A BWA is a material receiving antenna, which is adaptable and comfort. At some point it isn't important that space accessible for mounting the receiving antenna is level, so radio antenna ought not to change its qualities amid twisting conditions. Save specialists for the most part work in such a domain which is disjoined by multipath, which cause the blurring of got flag. So to keep away from such kind of issue a multi energized reception apparatus may require. Besides when receiving antenna is put over the human body, because of bidirectional properties of radio antenna in reverse radiation may hurt the wearer's body. So to minimize such radiations EBG (Electromagnetic band gap) structures are utilized.

Keywords: Textile antenna, body wearable system, electro-textile, EBG (Electromagnetic band gap), SAR (specific absorption rate**).**

CINSP-27

Design and Simulation of Dielectric resonator antenna (DRA) with Co-axial Probe for Wireless Application

Devansh Sinha[1], Mohit Vyas[2], Sanjay Singh Kushwah[3]
1, 3: Department of Electronics and Communication Engineering, GEC, Gwalior (M.P)
2: Department of Electronics and Communication Engineering, AUMP, Gwalior
devansh.sinha10@gmail.com, mohitvyas542@gmail.com, sanjaykushwah15@gmail.com

ABSTRACT: In this paper a Dielectric resonator antenna (DRA) consists of a rectangular geometry and a printed rectangular patch on top of it in order to achieve better performance and operation without significant increase in antenna size. DRA structure is proposed at a height of 2 mm from the ground plane and patch incorporated at the height of 3.638 mm. This work is mainly focused on increasing the potential parameters of DRA and analyze high frequency band. The proposed antenna is designed to resonate at 25 GHz and by varying the DRA size ‘a, then the simulated results shows variation in Return Loss. The impedance bandwidth of the DRA (23.417 GHz-26.961 GHz) and return loss is 26.543951dB.The proposed DRA is analyzed and design using CST-MSW (2010). The simulated result shows the Far field, smith chart. We have estimated the wavelength, frequency, bandwidth, Return loss and directivity.

***Keywords*:** DRA, antenna, bandwidth, directivity.

CINSP-28

SOS Transmission through Cellular Phones to Save Accident

Sakshi Bhadoria,
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
sakshibhadoria477@gmail.com

ABSTRACT: This paper describes an original idea to help cellular phone users caught in an accident. The idea has been developed keeping in mind the considerations of cost and compatibility with existing system. The Short Message Service or SMS as it is popularly referred to, is made use of for this purpose. The solution offered is the Force-Transducer method. The victim is assumed to be unconscious and the accident is detected automatically. Detailed simulation results at a scaled down level are provided for this solution. The threshold level is set based on data collected from the experiments.

One major problem in such design is the technique to find the victim's position. The Global Positioning System (GPS) is found to be costly. So, an unorthodox design using Radio Direction Finders (RDF) and beacon signals is described. The Goniometer or Crossed Loop Antenna is used for this purpose. This reduces cost effectively when compared with the GPS system.

The paper proceeds to suggest an abstract view of the software robot required to perform the Save Our Souls (SOS) message routing task. It uses a special hierarchical message dispatch system wherein people nearby and more likely to help are contacted. The robot also acts as a proxy to the victim and monitors responses for him.

This paper as a whole gives a cost-effective, high performance system which can be introduced in the market if any of the cellular companies are willing to encourage it.

Keywords*:* Global Positioning System (GPS), Radio Direction Finder (RDF), Short Message Service (SMS), Save Our Souls (SOS).

CINSP-29

A Review: Digital Communication

Pulkit Rajoria
Department of Electronics & Communication Engineering
Amity School of Engineering and Technology, AUMP, Gwalior, M.P, India-474020
pulkitrajoria@gmail.com

ABSTRACT: At display time advanced correspondence frameworks are generally utilized all through on the planet. In our cutting edge life we manage mobile phones, DECT indoor telephones, paging framework, office scrambling correspondence framework, military and police interchanges, which are more common place cases of such frameworks. Utilization of the advantages of electrical correspondence has turned into an indistinguishable piece of our lives now. Through this paper, I have attempted to outline different advancements that are vital in the field of computerized correspondence and have likewise incorporated the current headways in a similar field. The paper begins with the fundamental thought regarding the correspondence framework took after by essential tweak systems like sufficiency, recurrence and stage tweak. The paper at that point clarifies the

simple to advanced transformation procedures including the essentials about examining hypothesis, beat code tweak, quantization of signs taken after by advanced tweak procedures like Amplitude move keying, Recurrence move keying, Phase move keying, Binary Phase Shift Keying, Twofold Frequency Shift keying, M-ary computerized Modulation procedure what's more, Quadrature Amplitude Shift Keying . It at that point covers the issues of event of clamor and blunder in different balance frameworks and the techniques for decreasing it like coding for blunder discovery and amendment.

Keywords: DECT, Beat Code, M-ary**.**

CINSP-30

A SFPM Method for Indian Automobile Range Plate Recognition

Ashok Kumar Shrivastava
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior

ABSTRACT: Automobile range plate recognition is a challenging task in cybercrime. The numbers are stated of being in the automobile range plate that is different shape and pattern in different countries. In India the automobile range plate uses white as background and black as foreground color. In this paper we propose a SFPM methodology, first we find out the shape of license plate then enhance the image and calculate the characters of the license plate by using segmentations method. At the end of algorithm we apply fuzzy and pattern matching for character recognition. In our work we use two databases, first database store different-2 alphabet format and second database store a different-2 format of number.

Keywords: Gray image, Segmentation, Image Classification, Fuzzy system, pattern matching.

CINSP-31

BYOD Security and its Possible Solutions

Madhavi Dhingra
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
madhavi.dhingra@gmail.com

ABSTRACT: BYOD (Bring your own Device) is part of the larger trend of IT consumerization, in which consumer software and hardware are being brought into the enterprise. BYOT (bring your own technology) refers to the use of consumer devices and applications in the workplace. An effective BYOD strategy can lead to a number of benefits for businesses, including improved employee job satisfaction, increased job efficiency and flexibility. BYOD can also provide cost savings from initial device purchase to on-going usage and IT helpdesk support as employees invest in their own devices. Despite worries about Bring Your Own Device (BYOD) security dangers, representatives over the previous years have appreciated the different advantages of BYOD. So too have businesses, who are far-fetched ever to prevent staff from conveying their own particular gadgets to work or

utilizing them remotely for work purposes. The test stays to distinguish security dangers related with BYOD and locate the most fitting answers for alleviate these risks. By recognizing potential dangers, the framework can settle on an astute choice in the matter of how to react. This paper manages the security dangers related with it and the conceivable answers for it.

Keywords: BYOD, BYOD security, Device Security.

CINSP-32

Enhanced Packet Processing Technique to Handle Flooding Attacks in MANET

Divya Gautam
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
divyagautam06@gmail.com

ABSTRACT: MANETs are widely in use and near future expected to be more in use. MANETs are still very prone to security threats because of their basic properties. Flooding attacks are one of the lethal attacks on MANETs. These attacks choke the entire network, as a result of blocking the victim node. If concerted multiple attacks are conducted, it becomes more difficult to prevent. This research work proposes a novel defence mechanism to defend against flooding attacks in MANETs. The proposed scheme enhances the processing of legitimate packets at each node. The results on simulator shows that the proposed scheme also improves the end to end PDR (Packet Delivery Ratio).

Keywords: Adhoc Networks, MANETs, PDR, Flooding Attacks.

CINSP-33

LEO Satellite Communication System

Gunjan Maken
Department of Electronics & Communication Engineering
Amity University Madhya Pradesh, Gwalior
gunjan1922@gmail.com

ABSTRACT: Communication via satellite begins when the satellite is positioned in the desired orbital position. Ground stations can communicate with LEO (Low Earth Orbiting) satellites only when the satellite is in their visibility region. The visibility region is in fact the horizon plane. Because of natural barriers or too high buildings in urban areas, practical horizon plane differs from the ideal one. The duration of the visibility and so the communication duration varies for each satellite pass at the ground station, specifically for LEO satellites which do move too fast over the Earth. This paper discusses the satellites motion detection, the difference in between ideal and practical horizon and further the variations of the communication duration between the ground station and LEO satellites. Main objective is determination of practical horizon plane and improving communication duration.

Keywords: LEO, Orbital, Horizon.

CINSP-34

Ultra Wide Band Communication: A Review

Abhishek Tripathi
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
abhishektripathi752@gmail.com

ABSTRACT: The current fast development in innovation and the fruitful business organization of remote correspondences are fundamentally influencing our day by day lives. The change from simple to computerized cell interchanges, the ascent of third-and fourth-age radio frameworks, and the supplanting of wired associations with Wi-Fi and Bluetooth are empowering buyers to get to an extensive variety of data from anyplace and whenever. As the buyer interest for higher limit, speedier administration, and more secure remote association's increments, new upgraded advances need to discover their place in the stuffed and rare radio recurrence (RF) range.
This change would permit UWB-empowered gadgets to overlay existing tight band frameworks, which is as of now not permitted, and result in a significantly more effective utilization of the accessible range. Gadgets could, generally, fill in the unused segments of the recurrence range in a specific area. This paper acquaints the peruser with this innovation, from potential applications to administrative obstacles, to conceivable usage and future difficulties.

Keywords: UWB, Wi-Fi, RF, Bluetooth.

CINSP-35

Augmented Reality a New Era in Education

Vivek Parashar
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
vparashar@gwa.amity.edu

ABSTRACT: Augmented Reality is the technology using which we can integrate 3D virtual objects in our physical environment in real time. Augmented Reality helps us in bring the virtual world closer to our physical worlds and gives us the ability to interact with the surrounding. This paper will give you an idea that how Augmented Reality can transform Education Industry. In this paper we have used Augmented Reality to simplify the learning process and allow people to interact with 3D models with the help of gestures. This advancement in the technology is changing the way we interact with our surrounding, rather than watching videos or looking at a static diagram in your text book, Augmented Reality enables you to do more. So rather than putting someone in the animated world, the goal of augmented reality is to blend the virtual objects in the real world.

Keywords: Augmented Reality, Virtual Reality, Education, Learning.

CINSP-36

A Review on Adaptive Forwarding in Named Data Networking

Rajeev Goyal
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
rgoyal@gwa.amity.edu

ABSTRACT: Named Data Networking (NDN) is an as of late proposed new Internet architecture. By naming information rather than location, it changes the essential system service abstraction from "transmitting packets to offered destinations" to "retrieving information of given names." This major change makes a plenitude of new opportunities as well the same number of scholarly difficulties in application advancement, system routing and sending correspondence security and protection. In this study, researchers will propose a new architecture of NDN with smart and automated forwarding information based which is more versatile and proficient.

Keywords: Named Data Networking, Forwarding Information base, Routing protocol.

CINSP-37

Object Detection through ANN by Using Gabor Filter

Amrita Parashar
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
amritaparashar05@gmail.com

ABSTRACT: This paper based on classification of the feature of a object detected using Gabor filter feature extraction techniques in image processing. The object recognition problem is made difficult by the great variability in head rotation and tilt, lighting intensity and angle, partial occlusion etc. the feature vector based on Gabor filter is used as the input of the classifier, which is a feed forward neural network on a reduced feature subspace learned by an approach simpler then the PCA (Principal Component Analysis). The system is commenced on convolving a object image with a series of Gabor filter co-efficient at different scales and orientation. The effectiveness of the algorithm has been justified over object database with images captured at different illumination conditions.

Keywords: Gabor filter, Object detection, neural network, Feed forward network.

CINSP-38

Novel Polymer Nanocomposites for Microelectronics Applications

Pankaj Kumar Mishra
Department of Applied Physics
Amity University Madhya Pradesh, Gwalior
pmishra@gwa.amity.edu

ABSTRACT: The effect of polarization time on the space charge relaxation behavior of pure and nano ZnO doped PVK samples has been studied. The study has been carried out by thermally stimulated depolarization current patterns of electrets formed by polarization method in the range of 250 to 700 volts field strengths at 40°C to 70°C with constant heating rates. The results obtained show the shift of the TSD peak position towards lower temperature ranges. Decrease in activation energy was observed corresponding to the increase in polarizing field. The intensity of the peak maxima results in being a good indicator of the trapped carrier number evolution. For high temperatures and high electrical fields the saturation of the phenomenon is achieved faster, which is attributed to facilitated carrier mobility. The formation of charge transfer complexes is evidenced in the UV -Vis absorption spectra by the appearance of new absorption bands.

Keywords: ZnO, TSD, PVK, UV-Vis.

CINSP-39

Applications of Single Electron Transistor in Electronics

Nitin Bansal[1], Pankaj Kumar Mishra[2]
1: Department of Electronics and Communication Engineering, AUMP, Gwalior
2: Department of Applied Physics, AUMP, Gwalior
nitin.aec@gmail.com, pmishra@gwa.amity.edu

ABSTRACT: The problems associated with current CMOS devices increases day by day as the number of transistors are increasing on a single chip which results in increased power consumption in analog and digital circuits. Therefore there is a very urgent need to use such components in the electronics circuits that has very low dimensions to speed up and improve the power consumption. The single-electron transistor (SET) can be a good alternative for CMOS transistors. SET is a nano particle sized dimension and it operates on the principle of transfer of single electron through a channel called coulomb blockade also called Quantum Dot. The current flowing through a SET is due to tunneling of electron from source to drain. Therefore the requirement of the supply voltage requirement is also very low. As a result, the power consumption across a Single Electron Transistor is ultra-low in comparison to that of a MOSFET. In this paper we review the concepts of SET along with its application in analog electronics.

Keywords: Single-Electron Transistor, Coulomb Blockade, Quantum Dot, CMOS, MOSFET VLSI.

CINSP-40

Design an IoT-based Building Management Cloud Platform for Green Buildings

Mohan Kantharia
Department of Civil Engineering
Amity University Madhya Pradesh, Gwalior
mkantharia@gwa.amity.edu

ABSTRACT: Due to the rise of temperature on Earth surface, it leads to global Warming. Many Factor contributed in Global Warning from pollution to industrialization. Green building plays an important role in the development of the construction industry. The key issue of green building is how to operate itself. This paper presents a building management cloud platform for green buildings. Its goal is to realize building operation management by using the technologies of cloud computing and Internet of things. The cloud servers provide data storage, computing and hosting. The software takes the responsibility for visualization interfaces and modularization services. The hardware development makes devices and things to connect the network. Many functions such as monitoring, controlling, data processing, management and services customization have been integrated in the building management cloud platform.

Keywords: Green Buildings, IoT, industrialization.

CINSP-41

A Review: Big Data

Abhishek Dubey
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
ssabhidubey10@gmail.com

ABSTRACT: The term 'Big Data' portrays inventive methods and advances to catch, store, disseminate, oversee and break down petabyte-or bigger estimated sets of data with high-speed & diverted structures. Enormous information can be organized, non-structured or half-organized, bringing about inadequacy of routine information administration techniques. Information is produced from different distinctive sources and can touch base in the framework at different rates. With a specific end goal to handle these a lot of information in an economical and proficient way, parallelism is utilized. Big Data is an information whose scale, differences, and unpredictability require new engineering, methods, calculations, and investigation to oversee it and concentrate esteem and concealed learning from it. Hadoop is the center stage for organizing Big Data, and takes care of the issue of making it valuable for examination purposes. Hadoop is an open source programming venture that empowers the dispersed handling of huge information sets crosswise over bunches of ware servers. It is intended to scale up from a solitary server to a huge number of machines, with a high level of adaptation to non-critical failure.

Keywords: Hadoop, Petabyte, Big Data.

CINSP-42

Face Recognition with Hybrid Techniques

Prashant Kushwah
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
prashantkushwah211@gmail.com

ABSTRACT: Face recognition framework is still in test by numerous applications particularly in close perception and in security frameworks. Generally all utilizations of face recognition utilize enormous information sets, making challenges in present time preparing and effectiveness. This paper contains a structure to enhance face recognition framework which have a few phases. For good result in face recognition framework a few upgrades are critical at each stage. A novel plan is displayed in this paper which gives the better execution for face recognition framework. This plan incorporates expanding in datasets, particularly huge datasets which are required for profound learning. Changing the picture differentiate proportion and pivoting the picture at a few edges which can enhance the recognition precision. At that point, trimming the proper territory of face for highlight extraction and getting the best element vector for face recognition finally. The last after effect of this plan will demonstrate that the given structure is able for distinguishing and perceiving faces with various postures, foundations, and appearance in genuine or present time.

Keywords: Framework; face recognition; deep learning; preprocessing.

CINSP-43

Optical Computers: The Future of Technology

Geetika Dewan
Department of Electronics and Communication
Amity University Madhya Pradesh, Gwalior
dewangeetika02@gmail.com

ABSTRACT: Dozens of research workers in more than a hundred leading laboratories of the world are working on creating the foundations for a new field of engineering that promises to have a revolutionary impact on almost every field of science and technology. Resulting from the introduction of a variety of new techniques and devices-including the laser-as well as from the development of new photo-sensitive and electron-beam recording materials-including thermoplastics, codable films, and mass-storage holographic memories-this new technology, known as optical computing, is based upon mathematical concepts known as coherent or Fourier optics and holography. In terms of future developments and applications, the most dramatic results very likely will emerge from the implementation of real-time image processing in various forms. But the great power of optical computing derives primarily from its newly recognized capability of parallel processing, a natural property of the lens! In a general way, all aspects of this new field can be characterized by established concepts of electric and electronic signal processing and communications.

Keywords: Codable films, Holographic, Fourier optics.

CINSP-44

Arduino Based Dry & Wet Automatic Floor Cleaner

Akanksha Vyas[1], Satyam Chourasia[2], Shubham Antapurkar[3], Raghvendra Prasad[4]
1: Department of ECE, Medi-Caps University, Indore
2, 3, 4: Department of ECE, Medi-Caps Institute of Technology & Management, Indore
akankshavyas07@gmail.com, sc.chourasiasatyam@gmail.com, shubham467@gmail.com, raghvendra1407@gmail.com

ABSTRACT: Automatic floor cleaner is an automated machine that facilitates the user to keep their place clean and hygienic. Many industries are working in the automation field autonomous cleaners. This paper deals with the development of automatic floor cleaner. Now a day's major emphasis is given on the field of robotics for decreasing human efforts. Our aim is to construct a floor cleaner which will be fully automatic providing dry and wet cleaning as well as UV sterilization. The current market is occupied by cleaners with only one or two functionality. For its cost reduction and simplicity we are using Arduino. The cleaner will be a step for providing comfortable life by resolving problems in traditional floor cleaning methods which includes orthopedic issues.

Keywords: UV, Arduino.

CINSP-45

Jarvis Goggles: The Future of Jarvis goggles

Kanishk Mahor
Department of Electronics and Communication Engineering
Jaypee Institute of Information Technology Noida, U.P.
mahorkanishk@gmail.com

ABSTRACT: Living in highly digitalized technological world where virtual life is big then real life so if the virtual ris fused with reality i.e., Virtual reality where virtual content is in real life for this we have a technology called virtual reality itself have h wearable helmet that provides virtual image creating an illusion that it happened in real life but wearing this helmet we can't sense what is happening in real for this I came with an idea of Jarvis goggles that are glasses with one display in peripheral vision that can display information in smartly. In this paper discusses the different difficulties that arise in conjunction with the development of Jarvis goggles, e.g., Google Glass. It is a conceptual and theoretical essay that discusses whether jarvis goggles will be used and how they might be used. It demonstrates how different problems need to be addressed in the near future, e.g., problems with social interaction, psychological issues, technology development, legal and eye issues and questions of retail.

Keywords: Google, Jarvis, Conjuction.

CINSP-46

Analysis of Grid Connected Photovoltaic System with SEPIC Converter

Shelendra Rajora, Pawan Pandey
Department of Electrical & Electronics Engineering
Malwa Institute of Technology, Indore (M.P)
shailendra.rajora@gmail.com

ABSTRACT: The power generation from renewable power souces is variable in nature, and may contain unacceptable fluctuations, alleviated by using energy storage technique. The improvemen consisting in the collaborative association of batteries has been studied. The battery based hybrid energy storage system are a popular choice for the battery lifetime extension and system power enhancement. The battery ESS is characterized by high energy density, low power density, degradation due to frequent and partial charge/discharge cycles. By incorporating ESS which has high charge/discharge rates, a system having both high energy and power capabilitiescan be designed. A Single Ended Primary Inductor Converter (SEPIC) is also introduced to maintain constant voltage as the converter output. The results show that voltage compensation can be effectively done using the proposed method. This is modelled and simulated using MATLAB/SIMULINK. The proposed scheme is validated by detailed simulation and experimental results.

Keywords: Battery, Photovoltaic Cell, Hybrid Energy Storage Systems, Inverters, Energy Storage.

CINSP-47

The Telegraph Equations Using the Functions of Fractional Calculus

Kishan Sharma
Department of Applied Mathematics
Amity University Madhya Pradesh, Gwalior.
ksharma@gwa.amity.edu

ABSTRACT: In the present paper, the fractional differential equation for the transmission line without losses in terms of the fractional time derivatives of the Caputo type is considered. In order to keep the physical meaning of the governing parameters, new parameters are introduced. These parameters characterize the existence of the fractional components in the system. A relation between these parameters is also reported.

Keywords: transmission line, fractional differential equations, generalized Mittag-Leffler function.

CINSP-48

Wireless Power Transmission of Space Based Solar Power

Gunjan Maken
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
gunjan1922@gmail.com

ABSTRACT: The aim of this paper is to analyze advanced solar dynamic space power systems for electrical space power generation. Space-based solar power (SBSP) is a system for the collection of solar power in space, to meet the ever increasing demand for energy on Earth. SBSP differs from the usual method of solar power collection in the Earth. At the earth based solar power collection, array of panels are placed in the ground facing the sun, which collects sun's energy during the day-time alone. In SBSP huge solar panels are fitted in the large satellite which collects the entire solar energy present in orbit and beams it down to Earth. In space, the collection of Sun's energy is unaffected by the day/night cycle, weather, seasonal changes and the filtering effect of Earth's atmospheric gases. A major interest in SBSP stems from the fact that solar collection panels can consistently be exposed to a high amount of solar radiation. SBSP offers a complete displacement of fossil fuel, nuclear and biological sources of energy. It is the only energy technology that is clean, renewable, constant and capable of providing power to virtually any location on Earth.

Keywords: Space-based solar power (SBSP), Solar power satellite (SPS), Rectifying Antenna (Rectanna).

CINSP-49

Future of VLSI Design: The FinFET Logic Circuits

Nivendita Sharma
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
nivenditasharma.10@gmail.com

ABSTRACT: In this poster, we study these aspects from the device to the circuit level, and we make detailed comparisons FinFET circuit design techniques. In the simulations we used both state-of- art industry-standard models for current nodes, and also predictive models for future nodes. Our study shows that besides the performance and power benefits, FinFET devices show significant reduction of extremely low leakage, and many of the electrical characteristics are close to ideal as in old long-channel technology nodes; FinFETs seem to have put scaling back on track! However, the combination of the new device structures, double/multi-patterning, many more complex rules, and unique thermal/reliability behaviors are creating new technical challenges. Moving forward, FinFETs still offer a bright future and are an indispensable technology for a wide range of applications from high-end performance-critical computing to energy-constraint mobile applications and smart Internet-of- Things (IoT) devices.

Keywords: Digital VLSI design, FD-SOI, FinFET.

CINSP-50

A Review: Smart Traffic Light System

Geetika Dewan
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
dewangeetika02@gmail.com

ABSTRACT: Traditional traffic signal system only gives instructions to stop and not to vehicle driver. But if someone is breaking the signal then this system is not able to catch them and there are chances of taking bribe. Therefore to increase the security of traffic signal and to reduce human efforts and to avoid the bribery we are introducing smart traffic signal system through this mini project. Smart traffic signal based on the microcontroller & ultrasonic sensor, in which ultrasonic sensors are placed at one side of road in such a way so as to cover particular necessary area of road from where the vehicles are restricted to pass. If the signal is red and any vehicle is breaks the signal then ultrasonic sensor detect it and microcontroller take immediately action to buzzer alarm along with camera capture the image of that vehicle. It also make record of when, where, which vehicle breaking signal by saving image in particular folder as name of current date and time.

Keywords: Buzzer, Microcontroller, Ultrasonic Sensor.

CINSP-51

A Review: Solar Mobile Charger

Krishna Sharma
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
krishshar27@gmail.com

ABSTRACT: Vedic literatures in India even state the use of flying machines which were powered using the sun. Coming 21st century, we have come a long way in developing solar cells which are the devices powering our future, converting sun's energy into electricity. This work is about using non-conventional energy i.e. solar energy for mobile battery charging. Solar chargers are simple, portable and ready to use devices which can be used by anyone especially in remote areas. Solar panels don't supply regulated voltage while batteries need so for charging. Hence, an external adjustable voltage regulator is used to have the desired constant voltage.

Keywords: Vedic, Battery.

CINSP-52

Wireless Mobile Charging Using Microwaves

Priyanshi Gupta
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
priyanshi.123.pg@gmail.com

ABSTRACT: It is quite cumbersome to carry mobile charger or any other electronic gadgets everywhere. It is vicious when your mobile switches off when you needed it urgently. It is one of the major problem concerning of electronic gadgets. And now a days we get key of all our problem is by using the witricity (wireless transmission of electricity). But this is only possible when a plate is took under consideration of wireless charging. Chances of overlooking the charging plate is present but we need something which can change our electronic gadgets after using some of the suggested methods give the answer to our difficulties The system of microwave charging is dependent upon the standard of "microwave oven.". In the same way batteries gets charged which all the medium of communication. We are talking about microwave as other radiation are dangerous for living human bodies. Therefore we are working on the phone which gets charged using microwave without any side effect.

Keywords: Microwave, Wireless, Gadgets.

CINSP-53

A Review: Wireless Capsule Endoscopy

Shubham, Manoj Prajapat
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
shubhamvivaan@gmail.com

ABSTRACT: This paper considers the problem of using traditional endoscopy for detection of tumours of small intestine and vascular disorders. Endoscopy is a diagnostic medical procedure that is used to access the interior surface of an organ by inserting a long tube into the body. However endoscopy is a painful procedure and patient requires sedation, involves potential complications, causes patient anxiety discomfort and pain and also requires substantial time commitment. In this paper, the concept of nanotechnology has been used which introduces an inexpensive and beneficial product known as pill camera. 'Pill camera' or Capsule endoscopy is a new diagnostic tool that permits a direct visual examination of the small intestine, an area of the body not previously accessible using upper endoscopy. It has made revolution in field of medicine.

CINSP-54

Triple Band Micro-strip Patch Antenna Design for WLAN/WIMAX Applications

Shilpam Saxena, Raghavendra Sharma
Department of Electronics and Communication Engineering, AUMP, Gwalior
shilpam25@gmail.com, rsharma3@gwa.amity.edu

ABSTRACT: A compact triple band antenna for wireless local area network (WLAN) and worldwide interoperability for microwave access (WIMAX) application is presented in this paper. The proposed antenna has a rectangular ring slot enclosed inside a rectangular patch and a U shape slot inside a partial ground plane. The dimensions of the patch, the ground and the two slots are optimized to obtain 1.6 GHz, 2.4 GHz and 5.2GHz frequencies.

Keywords: GHz, WIMAX, WLAN.

CINSP-55

Security System for Sending Information Containing Hidden Voice Data by Steganography (SIOVE) Using MATLAB

Arun Pratap Singh Yadav
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
apsyadav19@gmail.com

ABSTRACT: With the modern use of technology and communication, data and information travel through many channels. During transmission they may be vulnerable to passive or active attacks, in which messages are used by criminal groups to undermine the integrity of individuals and institutions. In this study, a solution is proposed that uses a system constructed in MATLAB that is able to hide voice signals in an image. That is, the data sent is an image but it carries a protected voice message within it. This solution seeks to ensure the integrity of the data. To contextualize this work, the concepts of steganography and voice signals are defined. The implementation of the SIOVE system and its application are also present.

Keywords: Steganography, MATLAB.

CINSP-56

Blue Brain – The Virtual Brain

Nripesh Gupta
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
nikky97gupta@gmail.com

ABSTRACT: What is it that differentiates man and puts him on the throne of the entire animal kingdom? Yes, it's the human brain, and not the human, which is the most valuable creation of God. But the brain, all its knowledge and power are destroyed after the death of man. Is it possible to model a brain and upload the contents of the real natural brain into it thereby propagating life even after death? Yes, indeed. Today, organ donation is giving a new lease of life to many ailing patients; however can brain be added to the list of organs that can be donated? Imagine the marvels that would be back into existence if we could replicate and restore the brains of geniuses like Sir Albert Einstein or Newton or even our great leaders of the past like Mahatma Gandhi. This poster presents a literature survey on the Blue Brain technology that promptly answers all these sparkling questions. Scientists today are in research to take artificial intelligence to a level beyond everything, to create a virtual brain that could think, react, make decisions and also keep everything in some form of memory to do everything that a normal human brain can. To achieve this, the main approach is to upload an actual brain in a virtual brain. So that even after death the person's conscience would be able to function exactly as a normal brain in the form of a machine. IBM along with scientists at BMI (Brain and Mind Institute) École Polytechnique Fédérale de Lausanne (EPFL) Research University in Switzerland are simulating the brain's biological systems into a 3D model, which would recreate the electrochemical interactions that take place inside the brain. If this simulation results in a success, the modeling would extend to different parts of the brain and make it function with all the abilities of a natural brain, thereby eliminating the chances of any brain malfunctions such as psychiatric disorders like depression and autism, which are possible in the normal brain. IBM names this project as the 'Blue Brain' project.

Keywords: Nanobot, Neuron, Neo-cortical, Reverse Engineering, Supercomputer, Simulation.

CINSP-57

Key Challenges in Implementing Cloud Computing in Indian Healthcare Industry

Shubham
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
shubhamvivaan@gmail.com

ABSTRACT: The purpose of this work is to find out the challenges in implementing cloud computing in Indian healthcare industry. Cloud computing has grown exponentially in quick time and has found its usage in wide variety of industries. There are a number of advantages that cloud computing offers to customers in number of industries e.g. low cost services to its customers. However unlike other industries, Indian healthcare industry is so far unable to make any significant use of cloud computing. A survey conducted with 320 Indian hospitals of urban and rural areas, shows that majority of the

hospitals are interested in adopting the cloud technology. However, hospitals showed concerns on security, interoperability, Support capability and quality of the cloud service providers. Through this paper we are aiming to solve this puzzle and try to identify reasons or challenges as to why Indian healthcare industry is unable to take full advantages of cloud computing.

Keywords: Cloud Computing, Indian Healthcare Sector, Deployment Model, Cloud Services.

CINSP-58

iMouse: Integrated Mobile Surveillance &Wireless Sensor System

Sakshi Bhadoria
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
sakshibhadoria477@gmail.com

ABSTRACT: The remarkable advances of micro sensing micro-electromechanical system (MEMS) and wireless communication technologies have promoted the development of wireless. A WSN consists of many sensor nodes densely deployed in a field, each able to collect environmental information and together able to support multi hop ad hoc routing. WSNs provide an inexpensive and convenient way to monitor physical environments. With their environment-sensing capability, WSNs can enrich human life in applications such as healthcare, building monitoring, and home security. Traditional surveillance systems typically collect a large volume of videos from wallboard cameras, which require huge computation or manpower to analyze. Integrating WSNs' sensing capability into these systems can reduce such overhead while providing more advanced, context-rich services. For example, in a security application, when the system detects an intruder, it can conduct in-depth analyses to identify the possible source.

Keywords: WSNs, MEMS.

CINSP-59

A Decentralized Approach Based on Global Database for Disaster Management

Vaibhav Agrawal
Department of Computer Science & Engineering
Amity University Madhya Pradesh, Gwalior
vagrawal@gwa.amity.edu

ABSTRACT: Multi-robot systems are much reliable and faster in searching and achieving targets at the times of disasters and natural calamities as compared to one-robot systems. They are also better in comparison to man power as they are more resistant to hazardous conditions. In this work a method to active a group of robots to scan and retrieve the targets that are fastened at that place where the crises happened. This system is fault tolerant and having decentralized approach. In the proposed work, the basic elements in a real time search and rescue mission such as exploration of disaster area, target and obstacle detection, path planning to reach the target in a coordinated way

and also ready for any kind of fault occurred during the process using the “weights based algorithm”. Communication among the robots in the swarm is implemented by global database table.

***Keywords**:* Swarm Robotics, Search and Rescue, Fault Tolerance, Path Planning.

CINSP-60

A Review on Pill Camera

Akanksha Dwivedi
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
akankshadwivedi24@gmail.com

ABSTRACT: A pill camera is a piece of equipment used for a procedure known as capsule endoscopy. It was developed in the late 20th century and was approved for use by the FDA in 2001.The camera is about 1 inch long and one-half inch in diameter, with rounded edges making it shaped like a drug capsule (although slightly larger). It is comprised of a camera, flash, plastic capsule, and transmitter (at present, usually Bluetooth (TM)). It is small enough to be swallowed.
The pill camera is most often used when a disease of the small intestine is suspected. The upper tract can usually be examined with an endoscope, and for problems with the large intestine a colonoscopy is preferred. However, neither of those two procedures allow examination of the small intestine. In addition the pill camera is minimally invasive. However, unlike endoscopy and colonoscopy, a pill camera cannot be used to treat pathology.

Keywords: Pill Camera, FDA, Bluetooth, Endoscopy.

CINSP-61

A Low Power 16 Bit Vedic Divider for High Speed VLSI Applications

Alok Jain
Department of Mathematics
Amity University Madhya Pradesh
ajain1@gwa.amity.edu

ABSTRACT: This paper proposes the implementation of a low power and high speed Vedic Divider based on ancient Indian Vedic mathematics. In this paper, an algorithm based on the “ParavartyaYojayet” is applied, throughout this sutra the propagation delay and power consumption are reduced to an extent. As considered, division operation is more complex in the computation of the digital applications. The most significant aspect of this paper is to reduce the power consumption and provide high speed. In this work decimal and binary number division algorithms are performed. Synthesis results are calculated on Tanner EDA Tool 13.0 at 32nm technology. The simulated results for proposed Vedic divider shows a reduction in delay and power consumption against other division methods.

Keywords: EDA, Vedic, Synthesis.

CINSP-62

Ongoing Challenges and Research Opportunities in Internet of Things (IOT)

Sachin Upadhyay
Department of Mathematical Sciences & Computer Applications
Bundelkhand University, Jhansi, UP, India
sachinupadhyay2010@yahoo.co.in

ABSTRACT: The Internet of Things (IoT) opens opportunities for wearable devices, home appliances, and software to share and communicate information on the Internet. Advances in the areas of embedded systems, computing, and networking are leading to an infrastructure composed of millions of heterogeneous devices. These devices will not simply convey information but process it in transit, connect peer to peer, and form advanced collaborations. This “Internet of Things (IoT)” infrastructure will be strongly integrated with the environment. This paper focuses on researching on the architecture and technology of Internet of Things. Moreover, the applications of Internet of Things are interpreted in this paper. We begin with general information security background of IoT and continue on with information security related challenges that IoT will encountered. Finally, we will also point out research directions that could be the future work for the solutions to the security challenges that IoT encounters. The future is Internet of Things, which will transform the real world objects into intelligent virtual objects.

Keywords: Embedded, IOT, Heterogeneous Devices.

CINSP-63

Modeling of Hybrid MOS for the Implementation of Switched Capacitor Filter using Single Electron Transistor

Brijendra Mishra[1], Vivek Singh Kushwah[2], Rishi Sharma[3]
1, 2: Department of Electronics and Communication Engineering, AUMP, Gwalior
3: MEMS and Micro sensor Group, CEERI, Pilani, Rajasthan, India
brijendra.mishra07@gmail.com, vskushwah@gwa.amity.edu

ABSTRACT: In digital integrated circuit architectures, transistors serve as circuit switches to charge and discharge capacitors to the required logic voltage levels. A transistor is a three terminal semiconductor device used to amplify and switch electronic signals and electrical power. It has been observed that the Scaling down of electronic device sizes has been the fundamental strategy for improving the performance of ultra-large-scale integrated circuits (ULSIs). Metal-oxide-semiconductor field-effect transistors (MOSFETs) have been the most prevalent electron devices for ULSI applications. A better device will be formed with the help of new technology, with high operating speed low and power consumption, which can be the future of electronics industry. A methodology for the electric simulation of MOS/SET hybrid circuits will be developed. As a result of this, a functional model for the single-electron transistor will obtain and Implement Switched Capacitor Filter with the help of designed hybrid MOS. The SET model can be easily coded in any hardware description language.

Keywords: ULSIs, MOSFETs, SET, Metal-Oxide Semiconductor.

CINSP-64

Future of Visible Light Communication

Abhishek Tripathi
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
abhishektripathi752@gmail.com

ABSTRACT: Li-Fi stands for Light-Fidelity. Li-Fi technology, purported by the German physicist—Harald Haas, presents transmission of data through illumination by transferring data through an LED light that differs in intensity faster than the human eye can follow. This paper focuses on developing a Li-Fi based system and analyses its performance with respect to existing technology. Wi-Fi is great for general wireless coverage within buildings, whereas Li-Fi is ideal for high density wireless data coverage in confined area and for relieving radio interference issues. Li-Fi provides better bandwidth, efficiency, availability and security than Wi-Fi and has already achieved blisteringly high speed in the lab. By leveraging the low-cost nature of LEDs and lighting units there are many opportunities to exploit this medium, from public internet access through street lamps to auto-piloted cars that communicate through their headlights.

Keywords: Li-Fi, Wi-Fi, Bandwidth.

CINSP-65

Haptic Technology - A Sense of Touch

Prabhat Kumar Singh
Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
sprabhat918@gmail.com

Abstract: Haptic is the science of applying touch (tactile) sensation and control to interact with computer applications. Haptic device gives people a sense of touch with computer generated environments, so that when virtual objects are touched, they seem real and tangible. Haptic technology refers to technology that interfaces the user with a virtual environment via the sense of touch by applying forces, vibrations, and/or motions to the user. This mechanical stimulation may be used to assist in the creation of virtual objects (objects existing only in a computer simulation), for control of such virtual objects, and to enhance the remote control of machines and devices. This paper includes how haptic technology works, about its devices, its technologies, its applications, future developments and disadvantages.

Keywords: Virtual, Real and Tangible, Mechanical Simulation.

CINSP-66

A Review: Li-Fi

Gaurav kumar Jha
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
gauravjha8463@gmail.com

ABSTRACT: Li-Fi or Light Fidelity refers to 5G Visible Light Communication systems using light-emitting diodes as a medium to high-speed communication in a similar manner as Wi-Fi. In the days where internet has become a major demand, people are in a search for Wi-Fi hotspots. Li-Fi or New Life of data communication is a better alternative to Wi-Fi in wireless communication. This paper proposes a survey on Li-Fi Technology. The Li-fi technology was invented by Professor Harald Hass of University of Edinburgh. Li-Fi has more capacity in terms of bandwidth in visible region therefore it does not poke its nose in other communications which uses radio frequency range, without taking its frequency bands. Li-Fi has thousand times greater speed than Wi-Fi and provides security as the visible light is unable to penetrate through the walls, which propose a new era of wireless communication. The concept of Li-Fi is data communication on fast flickering of light which is not detected by human eye but it is focused on photo detector which converts the on-off state into binary digital data. It has gained a huge popularity in two years of its invention. Such technology has brought not only greener but safer and cheaper future of communication.

Keywords: LED (Light Emitting Diode), Wi-Fi (Wireless Fidelity),Li-Fi (Light Fidelity),VLC (Visible Light Communication),RF (Radio Frequency).

CINSP-67

A Review: Molecular Communication

Manish Chauhan
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
manish701995@gmail.com

ABSTRACT: Nanotechnology, recently, opened a new branch of research called nano communication networks (NCNs), which may be realized by several methods. For example, we can rely on traditional RF communication systems. Such a method, however, has to overcome RF device barriers. Therefore, researchers have introduced a new concept utilizing diffusion that is especially useful for short-range communications. Molecular communications systems use the presence or absence of a selected type of molecule to digitally encode messages. The molecules are delivered into communications media such as air and water for transmission. The technique also is not subject to the requirement of using antennas that are sized to a specific ratio of the wavelength of the signal. Molecular communication signals can be made biocompatible and require very little energy.
Molecular communication is an emerging communication paradigm for bio-nano machines (e.g., artificial cells, genetically engineered cells) to perform coordinated actions in an aqueous environment. This interdisciplinary research is considerably different from the traditional communication system, since it utilizes not electromagnetic waves but biological molecules both as

carriers and as information. Molecular communication has a variety of potential applications in the biomedical, military, and environmental areas. The most direct and promising applications are in the biomedical field. The advantages provided by molecular communication are from size, biocompatibility, and bio-stability. Some envisaged applications are drug delivery system (DDS), bio-hybrid implants, and lab-on-a-chip (LoC) systems.

Keyword: Nano communication networks (NCNs), Lab on chip (LOC) system.

CINSP-68

A Review: Vehicle-To-Vehicle Communications

Manoj Prajapat
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
prajapatmanoj29@gmail.com

ABSTRACT: Vehicle-to-vehicle (VTV) wireless communications have many envisioned applications in traffic safety, congestion avoidance, etc., but the development of suitable communications systems and standards requires accurate models for the VTV propagation channel. This paper provides an overview of existing VTV channel measurement campaigns, describing the most important environments, and the delay spread and Doppler spreads obtained in them. Statistical as well as geometry-based channel models have been developed based on measurements and intuitive insights. A key characteristic of VTV channels is the non-stationary of their statistics, which has major impact on the system performance.

Keywords: VTV, Doppler.

CINSP-69

The Secure Anthocnet Overlay

Sakshi Bhadoria
Department of electronics & communication
Amity School of Engineering and Technology, Amity University Madhya Pradesh, Gwalior,
sakshibhadoria477@gmail.com

ABSTRACT: Mobile Ad-hoc Networks (MANETs) compose one of the most challenging and Significant area in the networking research scope. Their unpredictable behavior in manners of topology poses big questions regarding issues such as resilience, reliability, availability and generally any domain under the big umbrella of Quality of Service (QoS). In relation with those, there is also one domain that is undoubtedly affected, that of security where this is the domain of interest. In order for MANETs to be functional it is required for them to acts under a scheme with certain rules. These rules are referred to as routing protocols. There are various routing protocols but however they are categorized under three basic groups; reactive, proactive and hybrid. This project is focused with a hybrid protocol; AntHocNet. AntHocNet promotes an adaptable, self-organized and re-configurable character and it surely fulfills most of the requirements needed for effective and robust routing in a MANET. Nevertheless, as most of pure routing protocols, AntHocNet by its nature does not consider

security as one of its main domains to support. Based upon that, it is directed on proposing a security solution for AntHocNet dealing with the issue of blackhole attacks detection. Black hole attacks in MANETs trigger lots of problems and their behavior in practice cannot be easily detected and even neglected by legitimate nodes over the network. The consequences that blackhole attacks cause affect up to a critical point the routing taking place on a distributed environment affecting the rest of the QoS domains.

Keywords: QoS, AntHocNet, MANET.

CINSP-70

Border Security using Wireless Integrated Network Sensors

Shivam
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
shivamyadav0821@gmail.com

ABSTRACT: Wireless Integrated Network Sensors (WINS) now provide a new monitoring and control capability for monitoring the borders of the country. Using this concept we can easily identify a stranger or some terrorists entering the border. The border area is divided into number of nodes. Each node is in contact with each other and with the main node. The noise produced by the foot-steps of the stranger are collected using the sensor. This sensed signal is then converted into power spectral density and the compared with reference value of our convenience. Accordingly the compared value is processed using a microprocessor, which sends appropriate signals to the main node. Thus the stranger is identified at the main node. A series of interface, signal processing, and communication systems have been implemented in micro power CMOS circuits. A micro power spectrum analyzer has been developed to enable low power operation of the entire WINS system. Thus WINS require a Microwatt of power. But it is very cheaper when compared to other security systems such as RADAR under use. It is even used for short distance communication less than 1 Km. It produces a less amount of delay. Hence it is reasonably faster. On a global scale, WINS will permit monitoring of land, water, and air resources for environmental monitoring. On a national scale, transportation systems, and borders will be monitored for efficiency, safety, and security.

Keywords: WINS, RADAR, CMOS, Microprocessor.

CINSP-71

A Review: Wearable Computers

Gaurav kumar Jha
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
gauravjha8463@gmail.com

ABSTRACT: Wearable technology consists of all kinds of devices, materials and components that can not be considered part of ordinary clothing but instead are high-tech additions or modifications to clothing. It ranges from clothing details designed for a specific purpose to computers carried and used

while wearing them. This paper describes the current status of wearable technology and research projects, and offers an opinion about the possible future of wearable technology, while focusing on wearable computing. Also an example of real-world usage of wearable technology will be given by briefly describing the U.S. Army's Land Warrior program which focuses on providing the dismounted soldier with an up-to-date technology for wireless communication, navigation and data-sharing.

Keywords: Navigation, Wireless Communication.

CINSP-72

Bayesian Approach for Uncertainty Analysis of an Urban Water System

Pooja shrivastava, M.K.Verma, Meena Murmu, Ishtiyaq Ahmad
Department of Civil Engineering,
National Institute of Technology, Raipur
pooja.shrivastava04@gmail.com, mkseem670@gmail.com, mmurmu.ce@nitrr.in
iahmad.ce@nitrr.ac.in

ABSTRACT: In urban water system to support decisions about design and alternative management strategies mathematical models are commonly used. Uncertainty analysis has received considerable attention in hydrology during last decades. For a realistic estimation of the uncertainties in the urban water system is necessary to confidence model parameters in modelling. Applications dealing with urban water system are very limited. This paper explores Bayesian approach for uncertainty analysis to quantify reliability of urban water system model simulations. The applications of Bayesian approach for uncertainties are widely used for highly urbanized catchment which demonstrated the methodology. The maximum likelihood solutions are determined using the uncertainty analysis model produced runoff simulations as compared to traditional calibration method. In this paper, an application of Monte Carlo Markov chain sampling method for calibration of parameter is presented. The objective of this study is to examine the efficiency of a proper Bayesian approach for uncertainty analysis.

Keywords: Uncertainty analysis, Calibration, Bayesian approach, uncertainty parameter, Monte Carlo Markov chain.

CINSP-73

Low Power VLSI design Methodologies & Power Management

Narendra Kumar Garg
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
nkgarg@gwa.amity.edu

ABSTRACT: Low power is the major challenge for today's electronics industries. Power dissipation is an important consideration in terms of performance and space for VLSI Chip design. Power management techniques are generally used to designing low power circuits and systems. This paper discuss about the various methodologies and power management techniques for low power VLSI

design that can meet future challenges to design low power high performance circuits. It also describes the many issues regarding circuits design at architectural, logic and device levels and presents various techniques to overcome difficulties.

Keywords: VLSI, Power consumption, Dynamic power, Clock gating etc.

CINSP-74

Techno-economic analysis of Solar based hybrid Micro-grid for Rural Area

Ashutosh Barua
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
ashutoshbarua1@gmail.com

ABSTRACT: Power shortage in off grid rural areas are one of the major challenges in the developing countries. Solar energy is present abundant in nature and free of cost. If managed properly it can be an economical source of power generation. This paper discusses about the techno economic analysis for an area which is not connected with the main grid. Cases are considered with various combinations of batteries and solar photovoltaic modules, various types of batteries are also discussed in detail like PVDF gel based batteries, solar irradiance and climatic conditions of the area are also considered. Load data is collected and then simulation is done using Homer v2.68 software, results are compared with diesel based microgrid and an optimal design of microgrid is proposed. The results shows that solar based microgrid is more economical standalone system and also beneficial for environment. Furthermore future scope is also discussed.

Keywords: Hybrid Micro-grid, Solar PV, Homer.

CINSP-75

Designing of UWB Band Pass Filter Using Parallel Coupled Line with Defected Ground

Shally Goyal
Department of Electronic and Communication Engineering
Amity University Madhya Pradesh, Gwalior
sgoyal@gwa.amity.edu

ABSTRACT: UWB parallel coupled line band pass filter with defected ground is proposed. Initially we design a parallel coupled band pass filter then we introduced back side rectangular aperture on ground plane for getting wideband. Later on to take the advantage of coupled lines, increase the number of coupled line to get the UWB on same size of the filter. The passband for proposed filter is from 3.4GHz to 10.6GHz with centre frequency 7.8GHz.the total size of proposed filter is 24.1mm.

Keywords: Bandpass filter, parallel coupled microstripline (PCML), Backside Aperture, Defected ground.

CINSP-76

Multiple Access Techniques for 5G networks

Rinkoo Bhatia
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
rbhatia@gwa.amity.edu

ABSTRACT: Fifth generation (5G) wireless networks face various challenges in order to support large-scale heterogeneous traffic and users, therefore new modulation and multiple access (MA) schemes are being developed to meet the changing demands. As this research space is ever increasing, it becomes more important to analyze the various approaches, therefore, in this article we present a comprehensive overview of the most promising Multiple Access schemes for 5G networks. Our article focuses on various types of non-orthogonal multiple access (NOMA) techniques. Specifically, we first introduce different types of modulation schemes, potential for OMA, and compare their performance in terms of spectral efficiency, out-of-band leakage, and bit-error rate. We then pay close attention to various types of NOMA candidates, including power-domain NOMA, code-domain NOMA, and NOMA multiplexing in multiple domains. From this exploration, we can identify the opportunities and challenges that will have the most significant impacts on modulation and MA designs for 5G networks.

Keywords: 5G, modulation, non-orthogonal multiple access.

CINSP-77

A study on challenges of IoT using big data analytics

Devendra Kumar Mishra
Department of Computer Science and Engineering
Amity University Madhya Pradesh, Gwalior
dkmishra@gwa.amity.edu

ABSTRACT: With the development of technology a concept that is known as Internet of things (IoT) comes in existence. Nowadays technologies are growing rapidly. Internet of things provide the concept in which machine's can communicate with human's. IoT have some challenges with evolving technologies. This paper analyze the different challenges of IoT when big data analytics apply for improvement in working of devices.

Keywords: IoT, Machine learning, Big data analytics.

CINSP-78

Designing of Triangular Slotted MIMO antenna for Wireless Application

Sanjay Chouhan
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
sanjaychouhanjit@yahoo.co.in

ABSTRACT: The wireless system capacity can be increased by the use of multiple antenna at transmitting and receiving side. The technology which uses multiple antenna called multiple input multiple output. Designed two element antenna using MIMO technique for dual band application produced better isolation characteristics. The high isolation is achieved using triangular and hexagonal cut structure. The simulated results produced low value of ECC and optimum value of VSWR. The value of S12 is found less than -18 dB. The value of ECC is obtained .015 at 5.3 GHz which is suitable for our operation. The proposed antenna operated in 3.59 GHz and 5.3 GHz which produced good antenna bandwidth.

Keywords: MIMO, ECC, MEG, VSWR, WLAN.

CINSP-79

A Review: Piezoelectric Energy Harvesting

Suket Singh Sisodia
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
suket.sisodia98@gmail.com

ABSTRACT: Piezoelectric Power harvesting is a very important concept in power electronics. Power harvesting may be defined as a process of acquiring energy surrounding a system and converting it into electrical energy for usage. Piezoelectric energy harvesting is one of the most reliable and energy efficient method. The crystalline structure of piezoelectric materials provides the ability to transform mechanical strain energy into electrical energy. It also has the ability of converting an electrical potential into mechanical strain. The power generated by a piezo ceramic is AC wave and not directly used in battery charging, hence we use Rectifier circuit to convert AC to DC, boost converter to step up the value and a lithium ion battery charger circuit to finally charge the lithium ion / lithium polymer battery.

Keywords: Piezo Ceramic, Energy Harvesting, Piezoelectric, Converters, Data Acquisition (DAQ) unit, Battery Storage.

CINSP-80

Review of Lower Limb Exos – Present and Future

BVNR Siva Kumar[1], Raghavendra Sharma[2], D.Sreenivasa Rao[3]
1: Dept., ECE, LBR College of Engineering
2: Dept., ECE, ASET, AUMP, Gwalior
3: Dept., ECE, JNTUEC, JNTUH, Hyderabad
1bvnr_s@yahoo.com, rsharma3@amiyu.edu.in, dsraoece@gmail.com

ABSTRACT: Robotic Exos are coming in various configurations to meet the diversified customer needs all over the world. India also has taken the initiative to join the revolution of Assistive and Rehabilitative along with Augmenting exo configurations. These exos are now developed in different capacities with user friendly and more convenience. Advanced materials and technologies along with tiny sensors make these models of less weight and low cost. People need Exos when they are of old age or injured or in the process of recovery. Exos will aid the user when assistance is needed and to the extent required. Modular configuration enables the model to be configured for different sizes. Also, this makes an economical exo. As the research is sponsored by industry to develop these exos, design details are in the unpublished literature. Thus the available details are used in comparison of Components, technologies, controlling techniques, Materials and applications. We would discuss these recent trends in designs and conclude with suitable Indian configurations.

Keywords: Exo, Assistive, Rehabilitative.

CINSP-81

Multi Terabits Ultra High Speed Optical Transmission

Nitin sindhu
Department Of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
nitin19sindhu@gmail.com

ABSTRACT: Multi terabit/s, ultrahigh-speed optical transmissions over several thousands of kilometers on fibers are becoming reality. The group velocity dispersion (GVD) imposes severe limit on information carrying capacity of optical communication systems. By choosing appropriate pulse shape highly stable light pulses known as solitons are generated when effect of GVD is balanced by self-phase modulation (SPM). The application of solitons in communication systems opens the way to ultrahigh-speed information superhighways. Transmission speed of order of Tbit/s can be achieved if optical amplifiers are combined with WDM in soliton based communication systems. The simulation results for Soliton order N=1 and N=3 are obtained using OptSim Software.

Keywords: Dispersion, GVD, Soliton pulses, SPM

CINSP-82

A Review: Nanotechnology

Kushagra Singh
Department of Electronics and Communication Engineering
Amity University Madhya Pradesh, Gwalior
kushagra.mp@gmail.com

ABSTRACT: Nanotechnology is the nexus of sciences. Nanotechnology is the engineering of tiny machines - the projected ability to build things from the bottom up using techniques and tools being developed today to make complete, highly advanced products. It includes anything smaller than 100 nanometers with novel properties. As the pool of available resources is being exhausted, the demand for resources that are everlasting and eco-friendly is increasing day by day. One such form is the solar energy. The advent of solar energy just about solved all the problems. As such solar energy is very useful. But the conventional solar cells that are used to harness solar energy are less efficient and cannot function properly on a cloudy day? The use of nanotechnology in the solar cells created an opportunity to overcome this problem, thereby increasing the efficiency. This paper deals with an offshoot in the advancement of nanotechnology, its implementation in solar cells and its advantage over the conventional commercial solar cell.

Keywords: Solar panel, Nanotechnology, Photovoltaic.

CINSP-83

Memory Forensic: Acquisition and Analysis of Memory and its Tools Comparison

Mital Parekh[1], Snehal Jani[2]
1: Department of IT & Telecommunication, Raksha Shakti University, Ahmedabad, Gujarat
2: Department of Applied Physics, Amity University Madhya Pradesh, Gwalior
sneh.jani@gmail.com

ABSTRACT: Now a day's cybercrime increasing extremely and to detect that cybercrime different cyber forensic techniques and tools are used to recover data from the devices. In this research paper we are going to perform memory forensic and analyze the memory which contains many pieces of information relevant to forensic investigation, such as username, password, cryptographic keys, Deleted files, Deleted logs, running processes; which can be helpful to investigate the cybercrime and on the basis of this we can detect accused. Acquiring, analyzing and recovering are the main steps for memory forensic. Memory forensic becomes important now days in which many tools are used and having the knowledge of the tools we can recover the evidences of crime from volatile memory. Volatile memory stays for a very short period and that is why it is always tough to analyze such memory. There are many tools used for memory forensic are not entirely fitted in every situations; it is important to have knowledge about tools before it is applied to solve any cybercrime. Although most of the tools are successful in providing reasonable evidence, no single tool is sufficient to complete the investigation. This research paper is helpful to analyze the memory which stores the essential data, how to collect evidence from device and how we to recover this essential data using different memory forensic tools and which are best suitable for particular situation and which tools are useful for different purpose.

Keywords: Memory Forensic, Memory analysis, collection of evidence, memory forensic tools, volatile memory

CINSP-84

Luminescent Materials for Communication Devices: An Overview

Manisha Singh
Department of Applied Physics
Amity University Madhya Pradesh, Gwalior
msingh@gwa.amity.edu

ABSTRACT: The luminescent material converts different types of energy into electromagnetic radiation. These are also called phosphors, they can be developed in to a potential candidate for application like solar cell device, LEDs, Display devices etc. Present paper reports an overview of the phosphorus for communication, their present status and challenges

Keywords: Luminescent, Phosphors, LED

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