

& Electronics
Communication

THE FLIP FLOPS

A QUARTERLY ECE NEWSLETTER

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Department of Electronics & Communication Engineering
School of Studies in Engineering and Technology
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)



If Opportunity Doesn't Knock, Build a Door.

Welcome To The Next Edition Of The Departmental Newsletter “**The Flip Flops**” As Always, this NEWSLETTER Aim To Provide You With Valuable Information And Updates Regarding The **Departmental Activities, Faculty Achievements, Student Achievements, Events, Upcoming Events** & much more. “**Wisdom is not the product of schooling but a lifelong attempt to acquire it.**” With that said, this journal also enlightens you with the recent hot topics- Blockchain, 5G and entrepreneurship with other advancements of the industry, find them on the P-09 ;) This Newsletter team presents you with the Volume 1 Issue 2 of this series. Hope you enjoy reading it, as much as we enjoyed writing it. We, The Newsletter Team Worked As A Team With The Motto “**You Can Do What I Cannot Do And I Can Do What You Cannot Do, Together We Can Do Great Things**” By Helping Each And Every Member Of This Department By Letting Them Know About The Happenings Of Our Department!

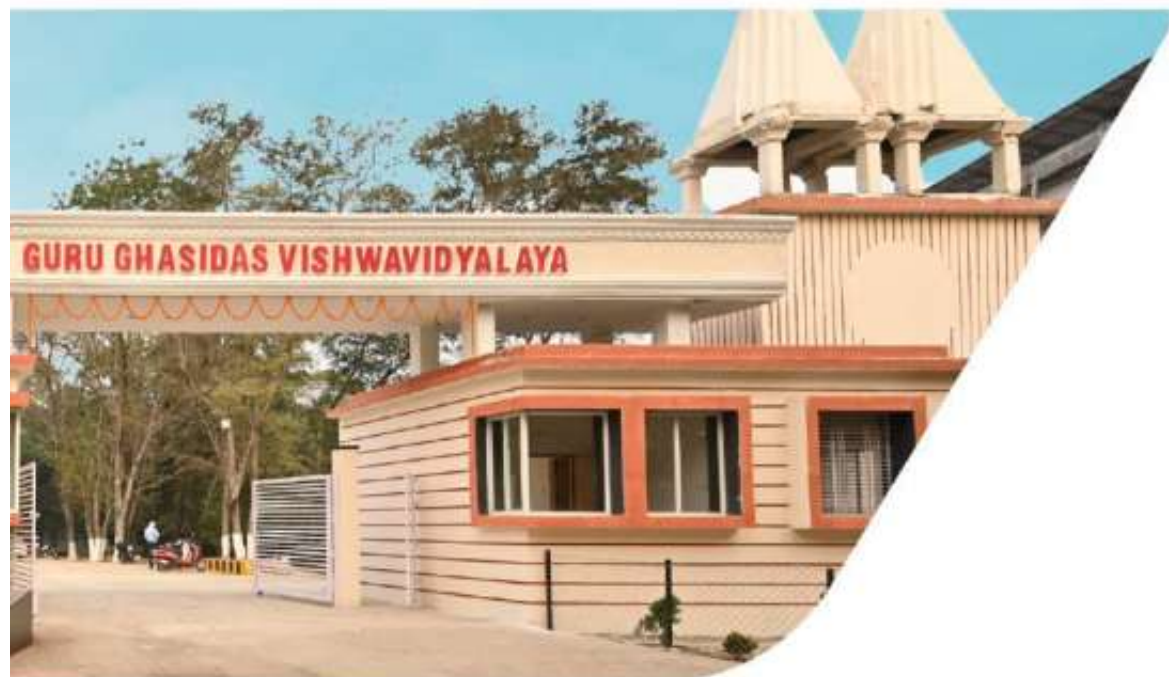


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From The Desk of Hon'ble Vice Chancellor

" **Science** Is About Knowing And **Engineering** Is About Doing "

PREFACE

According To The 1st Engineer Of India, Mokshagundam Visvesvaraya Ji, "Science Is About Knowing And Engineering Is About Doing". Accordingly All The Doings Of The ECE Department From The School Of Studies Of Engineering And Technology Are Now Being Mentioned In.

"The Flip Flops".

I Am Very Pleased With The Efforts Of This Quarterly Newsletter For Acknowledging Every Happening Of The ECE Department Of Placement. It contains The Events, Faculty Achievements, Student Achievements, And appreciates Every Small Achievement Of Our Students. This acknowledgements Encourages Our Students, and nurtures Them.



I Appreciate The Dean Of Sos(E&T) Ece, Head Of Department, And Faculty Members For Providing Such An Environment For Our Future Engineers. My Heartiest Congratulations To The Team For The Flip-flop. I Wish Them A New Era Of Learning, And Creating!!

My Well Wishes And Good Luck To Upcoming Engineers!

Prof. Alok Kumar Chakrawal

Vice Chancellor, Guru Ghasidas Vishwavidyalaya



From The Desk of Registrar



"Art without Engineering is **Dreaming.**
Engineering without art is **Calculating.**"

Message

In The Digital World That We Now Inhabit, Technological Advancement Is Dynamic And Unplanned. Young Brains Have A Lot Of Opportunities To Reach New Heights Thanks To The World's Rapid Progress. I Want To Express My Gratitude To The Brilliant And Dedicated Members Of Our Academic Staff Who Are Working To Make The Guru Ghasidas Vishwavidyalaya's School Of Studies Of Engineering And Technology A Bastion For Nurturing Diligent Students In India.

The Department Of Electronic And Communication Engineering Has A Distinguished History Of Success. We Are Certain That The New Initiative To Publish The Flip Flops, A Quarterly Newsletter, Will Contribute To The All-around Growth Of Our Exceptional Human Resources.

Statement from Dean SoS(E&T) -



Being The Dean Of Sos(E&T) Having An Eye On Every Happening In The Sos(E&T) Is Needed And This Quarterly Journal From Of The ECE Department Is Not Only a quarterly briefing But Also enchants Me with The Talented Minds And Efficiencies Of This Department. "The Flip Flops" And The Team Of This Newsletter Are Doing A Great Job. Directly Or Indirectly Making Students Know, How Competitive The World Is, How One Should Plan Or Learn Things to be future ready. Making an Energetic And Enthusiastic Surroundings. This Are Not Only Beneficial For Students But Also For The Name And Fame Of Our University. I Am Grateful To Have them on board and appreciate them for their Remarkable Contributions. This Digital Newsletter being a Good example Of Digitalization

Message From HOD -

The Ece Department Is Committed To Helping Students Improve Academically And Professionally As A Whole. To Include The Most Recent Trends For Student Progress, The Course Material Is Periodically Altered. Our Department's Graduates Have A Widespread Reputation In The Fields Of Business, Government, And Academia. Interaction Between Academic Institutions And Businesses Is Urgently Needed. I Warmly Invite Recruiters And Our Graduating Students To Congregate On A Single Platform And Collaborate To Maximize Each Other's Potential.

"Failure Is Central To Engineering. Every Single Calculation That An Engineer Makes Is A Failure Of Calculation. Successful Engineering Is All About Understanding How Things Break Or Fail"



Departmental Activities

ECE Lecture Series-2



Department of Electronics and Communication Engineering, successfully conducted 2nd lecture of one of its kind "ECE Lecture Series" aimed at helping the students in choosing their best possible career path, clearing their doubts and providing them insights about the current technologies being used in the industry and guiding them through the Alumnus of the department. Mr. Vikas Swarnkar, Scientist/Engineer- SF, Deputy Head, System Reliability, SDSC SHAR, ISRO Srihari Kota, A.P. (Alumni 2004) and Mr. Abhishek Khandelwal, Sr. Tech member of technical staff-I into R&D team for 5G networks at Mavenir Systems Ex – Sasken, Nokia in 4G/5G domain, an entrepreneur in e-commerce domain (alumni 2015)

Industrial Visit



Department In Collaboration With Industry Institute Interaction Cell, Sos(E&T), Ggv Successfully Conducted The 1st Phase Of Industrial Visit At Bsnl, Bilaspur On 19th-apr- 2022.



In Accordance With Valuable Input From The Faculty, Students From 3rd And 4th Year Of Their Degree Engaged In The Event.





The session conveyed detailed information about wireline technologies used in BSNL including Line Media Gateway (LMG) and redundant LAN switches



Students were guided about the Multiprotocol Level Switching (MPLS) dealing with the cloud service of the BSNL.



During the course of the program they were highlighted about various devices and its parts used for providing calling and internet facilities namely Base Station Controller (BSC) and Mobile Switching Center (MSC)



Lastly students were briefed about the upcoming 5G technology and were shown the practical demonstration of finding an error in the device through software simulation.



ARTICLES

Blockchain Technology

- By Mrs. Bhawna Shukla (Asst. Prof.)

Blockchain Technology Was Created For The Digital Cryptocurrency Bitcoin In 2008. However, Its Applications Are Much Wider Than Alternative Currency And It Is Poised To Be "The Next Big Thing" In Applied Sciences. In A Nutshell, A Blockchain Is A Distributed Database That Provides An Unalterable Public Record Of Digital Transactions. It Can Be Viewed As A Distributed Digital Ledger Containing A Chain Of Block Information, Where Each Block Is Identified By A Cryptographic Signature. These Blocks Are All Back-linked, That Is, They Refer To The Signature Of The Previous Block In The Chain, And That Chain Can Be Traced Back To The Very First Block Created. As Such, The Blockchain Contains An Un-editable Record Of All The Transactions Made. The Transparent And Decentralized Nature Of The Blockchain Network Enables The Development Of A Non-refutable, And Unbreakable Record Of Data, Which Is The Fundamental Feature Of Many Applications, Such As Insurance, Finance, Fraud Detection, Copyright Protection, Smart Contracts, Identity Management, Ecommerce, And Healthcare

Even In Higher Education, Blockchain Technology Can Help Track Student Credentials And Achievements In A Cheap, Secure, Reliable, And Public Way. Also, Organizations Are Now Using Blockchain To Secure Their Data, Reduce Inefficiencies In The Supply Chain And Logistics Network, And In Intellectual Property Management. Blockchain Is Also Used In Food Safety, Healthcare Data Management, Fundraising, And Investment With Security Token Offering, And In The Notary.

One Indicator Of An Important Emerging Technology Is The Strength Of Funding. It Is Interesting To Notice That Various Funding Sources Are Considering "Investing" In Blockchain Technology, Including Venture Capitals, Various Foundations, And Federal Agencies.

Blockchain Is Being Implemented In Almost Every Area Of Business. It Can Reduce Costs Of Operations For Instance By Securing Company And Client Data To Avoid Costly Data Breaches And Making It Easy To Exchange Value And Data In A Peer-to-peer Manner Without Middlemen.



Mrs. Bhawna Shukla
(Asst. Professor)

5G Technology

- A new era of Wireless World

Wireless Technology Has Steadily Become A Bigger Presence In Most People's Everyday Lives. Whether It's At Work, At Home, At A Stadium, Or Even In Auto Vehicles, People Rely On Wireless Tech For Information, Entertainment, Communication, And More.

In The Past Few Years, A New Name Escalated Very Fast In Wireless Technology, "5G". It Means A 5Th Generation Mobile Network. It Is A New Global Wireless Standard After 1G, 2G, 3G, And 4G Networks Which Enable A New Kind Of Network That Is Designed To Connect Virtually Everyone And Everything Together Including Machines, Objects, And Devices. This Technology Is Meant To Deliver Higher Multi-gbps Peak Data Speeds, Ultra-low Latency, More Reliability, Massive Network Capacity, Increased Availability, And A More Uniform User Experience To More Users.

Besides Its Objectives When We Look At Its Technical Enhancements We Observe That 5G Is Based On Ofdm (Orthogonal Frequency-division Multiplexing), A Method Of Modulating A Digital Signal Across Several Different Channels To Reduce Interference. It Uses A 5G Nr Air Interface Alongside Ofdm Principles And Uses Wider Bandwidth Technologies Such As Sub-6 GHz And Mmwave. When We Deep Dive Into The Band Of 5G, The Primary Technologies Include:

Millimeter Wave Bands (26, 28, 38, And 60 GHz) Are 5G And Offer Performance As High As 20 Gigabits Per Second But Low Range Coverage;

"Low-band 5G" And "Mid-band 5G" Use Frequencies From 600 Mhz To 6 Ghz, Especially 3.5-4.2 GHz Offers Better Speed Along With Better Range Coverage;

Massive Mimo (Multiple Input Multiple Output – 64-256 Antennas) Offers Performance "Up To Ten Times Current 4G Networks;"

Through A Landmark 5G Economy Study, We Found That 5G's Full Economic Effect Will Likely Be Realized Across The Globe By 2035—Supporting A Wide Range Of Industries And Potentially Enabling Up To \$13.1 Trillion Worth Of Goods And Services. This Impact Is Much Greater Than In Previous Network Generations. The Development Requirements Of The New 5G Network Are Also Expanding Beyond The Traditional Mobile Networking Players To Sectors Such As The Automotive Industry, Smart Healthcare, Smart City, Virtual Reality (Vr), The IoT, And Artificial Intelligence (Ai). A Defining Capability Of 5G Is That It Is Designed For Forwarding Compatibility—The Ability To Flexibly Support Future Services That Are Unknown Today.



Ankit Kumar
(Final Year)

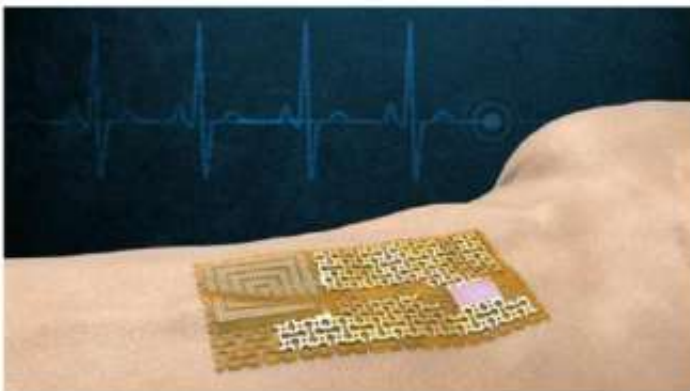
Wireless "Electronic Skin"

- a sensor that transmits data without chip

Wireless technology is one of the most advanced upgrades occurring in today's world. Wearable sensors transmit information about a person's glucose concentrations, blood pressure, heart rate, and activity levels effortlessly from the sensor to a smartphone for additional analysis.

Recently, one of the major stories that found its way to some of the most recent headlines is the new chip-free electronic skin produced by a research team at MIT. The team's novel sensor design, which was published in *Science*, is a flexible 'e-skin' — a semiconducting membrane that adapts to the skin like electronic Scotch tape.

The sensor's heart is composed of an ultrathin, high-quality gallium nitride sheet. Material that allows it to generate electrical signals under mechanical strain and vibrate in response to an electric impulse. The pattern of waves from the vibration can help identify the material and compounds present in the body.



Srijani Som
(Pre-Final Year)

"If there is any change in the pulse, or chemicals in sweat, or even ultraviolet exposure to skin, all of this activity can change the pattern of surface acoustic waves on the gallium nitride film," says Yeongin Kim. "And the sensitivity of our film is so high that it can detect these changes."

You could think that a chip requires a lot of power, but remember that this is not the case. The MIT researchers ensured that the gadget could make a system incredibly light without using any power-hungry components. The project instils a deep analysis from the perspective and concept of material engineering being used. Previously, the research team was involved in developing remote epitaxy technology. This methodology's primary goal is to produce and peel away ultrathin, high-quality semiconductors from graphene-coated wafers. Indeed, they have already used these methods to develop and test a variety of flexible, multifunctional electronic films. While creating this e-skin, they used remote epitaxy to peel away ultrathin single-crystalline layers of gallium nitride. Gallium Nitride was chosen because it can act as a sensor and a wireless communicator, so they filmed it. When gallium nitride and gold are combined, the gold gets deposited in the shape of repeated dumbbells - a lattice-like structure that gives the typically stiff metal some flexibility. The gallium nitride and gold sample, which they consider electronic skin, is just 250nm thick. The gadget detected and wirelessly communicated variations in the surface acoustic waves of gallium nitride on participants' skin that were connected to their heart rate. The research team sees the results as the first step toward chip-free wireless sensors and envisions employing the device in conjunction with other selective membranes to measure additional target indications like cortisol, a hormone linked to stress levels.

Entrepreneurship

We fear that so-and-so is an entrepreneur who built their own company. But what exactly does being an entrepreneur or possessing entrepreneurship skills mean? Entrepreneurship can be understood as the readiness to start a venture or dive deeper and create something independently. Formally the definition goes as starting developing or operating a business enterprise. Now, running this organization can be profit oriented or for social causes. You might have heard about commercial enterprises like McDonalds' and charitable enterprises like Red Cross.

Often heard, Entrepreneurs are innovators, and financial experts are risk-takers. It is true but is not complete. It's not always about taking risks but clutching with calculated risks or new ideas rather than an intuitive mindset. Most Entrepreneurs have this mindset to avoid being in the rat race and work for their growth. One can run an enterprise if he possesses this mentality of working for their benefit.



Yash Gupta
(Pre-Final Year)

Entrepreneurs are vital to any economy because they have the knowledge and drive to foresee requirements, sell viable new ideas, and solve problems. Indeed they get rewarded with profits, fame, and continued growth opportunities. Quality like versatility, flexibility, resilience, communication and focus are predominant for a start-up to succeed. Many challenges like getting funding, hiring talents, and bureaucracy come across, but once you dive deeper and strive to win, these sides apart and are patient, you will see success coming to you in no time



Faculty Achievements



Publications

Faculty	Topic
Dr. Nikita Kashyap	Biotechnological role in corona vaccine development in the journal/book- biotechnology and covid 19 pandemic role of biotechnology in covid vaccine development.
Dr. Nipun Kumar Mishra	Mutual coupling reduction between the cylindrical dielectric resonator antenna using split ring resonator based structure in the journal/book named International journal of ECE(AEU), vol-154, indexed in- SCI
Chandan Tamrakar	Mutual coupling reduction between the cylindrical dielectric resonator antenna using split ring resonator based structure in the journal/book named International journal of ECE(AEU), vol-154, indexed in- SCI
Dr.P.S.Shrivastava	Mini Interconnect IC protocol and camera command set controller for camera communication in mobile phone in book chapter in " Advances in electrical and computer technologies ". Vol-881, indexed by EI





Expert talk/guest lecture/- Conference chair

Faculty	Topic
Dr. Nipun Kumar Mishra	1) Key note address on "Antennas in communication" in International conference ICETMRI-2022 at LCIT Group Bilaspur 2) Session chair of ECE department(session-1) in the International conference ICEMTRI-2022 at LCIT group bilaspur
Chandan Tamrakar	Technical programme committee member(as a reviewer) at International conference on advancements in interdisciplinary research(AIR-2022) at MNIT Allahabad
Jitendra Bhardwaj	Gave a online mode guest lecture on strategies for New product development at Summer School Boot camp, ACIC IIT(ISM) DHANBAD
Dr. Anil Kumar soni	1) Technical session chair at International conference on advancements in interdisciplinary research(AIR-2022) at MNIT Allahabad. 2) Technical programme committee member(as a reviewer) at International conference on advancements in interdisciplinary research(AIR-2022) at MNIT Allahabad

SEMINARS/WEBINARS

2 weeks Industrial training: Integrated telecom/Data network & Cyber Security-(23/05/2022-04/06/2022), Venue-ALTIC Ghaziabad (online mode)

- 1) Sumit Kumar Gupta
- 2) Deepak Kumar Rathore
- 3) Dr. Nipun Kumar Mishra
- 4) Shrawan Kumar Patel
- 5) Pragati Patharia
- 6) Anita Khanna

Student Achievement's

Excellence Is Never An Accident; It Is The Result Of High Intention, Sincere Effort, Intelligent Direction, Skillful Execution, And The Vision To See Obstacles As Opportunities.



Srijani Som
Pre-Final Year

Upcoming Vice Chair Person at GFGStudentChapterGGV. Web-Dev Intern at Bridge. Running a Content Writing Firm (On Freelance Basis). Hackbriio Winner at Equilibrio



Khusbu Gupta
Pre-Final Year

Upcoming Web-Dev Lead at GFGStudentChapterGGV. Web Developer at Frazzo. React Developer at Prepear Software Pvt. Ltd. Hackbriio Winner at Equilibrio



Jyothiraaditya
Pre-Final Year

Senior Executive in Graphic Designing at Equilibrio. Industrial Program on IoT From APSIS solutions.



A M Surya
Fresher

Content Writing Intern at Aashman foundation (NGO). Social Media Manager at his own startup MAK Creative Studio Pvt. Ltd

Experiences



K. Venkata Mahith
Final Year

Kanchi Venkata Mahith, Final year ECE student of SoS(E&T), GGV. I completed a project titled "Controlling of On-Board Valves of Launch Vehicles using Embedded Microcontroller". Gained real time experience with Microcontrollers, Data Acquisition Systems, FPGA, I/O peripherals, Relays(TMR- Triple Modular Redundancy) and Temperature and Pressure sensors. It was a pleasure to work in ISRO, I learnt so much and working with the most advanced technologies, providing great exposure and experience.



Rishabh Upadhyay
Final Year

It has been an incredible experience to spend two months of my summers at IIT BHU for my internship. The internship lasted from the third week of May to the last week of June. I was the only intern working for my mentor, Dr. K.P. Sarawadekar. I was asked to create two projects in Verilog and then implement them on the Nexys-4 DDR FPGA, which were Digital Clock Implementation and VGA Monitor Interfacing. This internship taught me a lot of things, including how to work collaboratively with teams and with completely new technologies, as well as how to deal with work pressure. Finally, IIT BHU provided me with an unforgettable experience that I will remember for the rest of my life.

Equilibrio '22

Name of Event	Winner Name	Position
E - Bizz	Rishabh Upadhyay	Winner
Job battle	Yash Gupta	Winner
Circuit designing	Deepanshu Patel Bibekar Tejas Jitendra	Winner 2nd Runner Up
Hackbrio	Khusbu Gupta Akhilendra Janumala Srijani Som	Winner
Speech	Dasari Tharun Kumar Prachi Patel Ankit Kumar	Winner Runner Up 2nd Runner Up
Quiz(battle of brains)	Bibekar Tejas Jitendra Arpan Nishant Wankhede	Winner Runner Up 2nd Runner Up



9th Convocation

Guru Ghasidas Vishwavidyalaya, Bilaspur celebrated its 9th Convocation on 20th April, 2022. The chief guest Hon'ble Governor of Chhattisgarh, Smt. Anusuiya Uikey and Guest of Honour Dr. Subhash Sarkar, Union Minister of State for Higher Education, presided over the event..



Mr. Robert Mark

In the 2022 Convocation, Mr. Robert Mark was Awarded **Ph.D. Degree** for his thesis on the Study and Design of **MIMO Microstrip Antenna** under the Guidance of Dr. Soma Das.



Ms. Annu

In the 2022 Convocation Ms. Annu was Awarded **Gold Medal** for her overall best conduct in the B.Tech Degree Program for the Session 2016-2020.



Mr. Vivek Singh

In the 2022 Convocation, Mr. Vivek Singh was awarded **Gold Medal** for his overall best conduct in the B.Tech Degree program for the Session 2017-2021.



I, **Robert mark** had a great experience with Soma Das Ma'am! I would like to thank Soma Das, Ma'am, for her Time and Consideration. Ma'am's guidance and support throughout my journey encouraged me to go and grab the farthest point I can. Definitely, I am going to continue my spirit and dedication in the upcoming years too!



”

You can't put a limit
to anything.
The more you dream
the farther you get it

ECE Department Got 2 Gold Medals

Gold Medals Are Awarded To The Most Meritorious Student Of That Particular Batch Based On The Total Percentage Gained By The Person During The 4-year Curriculum On The Day Of Convocation

”

I, **Annu** would like to thank the whole ECE department and its faculties for their Deliberation and efforts while teaching. To be honest that was the Astonishing moment when I heard my name being called in the Convocation Ceremony.

Myself **Vivek Singh** a 2021 graduated student would like to express my gratitude to the entire ECE department's faculty for their consideration and teaching efforts. I am grateful to have such a wonderful professor who consistently boosted my self-esteem.

Summer Internships

Organization	No of Students	Duration (Weeks)
Indian railways	6	4
Internshala	4	6
Vishakapatnam Steel Plant	12	4
BSNL	5	4
NTPC	16	4
BHEL	5	4
CSPCDL	8	4
ONGC	1	6
Ananth technologies PVT . LTD	2	8
IIT BHU	1	6

Organization	No of Students	Duration (Weeks)
Satish Dawan space center	5	4
Nalla Robotics LLP	1	8
Dr. Reddy Laboratories LTD	1	4
Pantech Solutions	2	4
Central Coalfields LTD	1	4
ARCtech Labs LTD	1	12
ALTTC	1	4
Suven Consultants & Technology Pvt Ltd	1	4
TATA Power DDL	1	4
OEPP Technologies Pvt Ltd	1	8
Tevatron Technologies Pvt Ltd	1	6

UNTIL THE NEXT TIME

Thank you for your patience while we have been working on the next edition of the Electronics and Communication Engineering Newsletter. We have finally finished it and we are happy to send it to you. The acknowledgement note that I would like to include in the next edition of the Newsletter is attached. I will also like to include a few wishes for the future in the next edition.

- Silicon club
- IEEE
- IETE
- Industrial visit phase II
- ECE Lecture series 3.

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Do send your valuable feedback article for next time

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