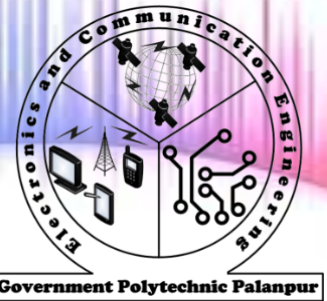


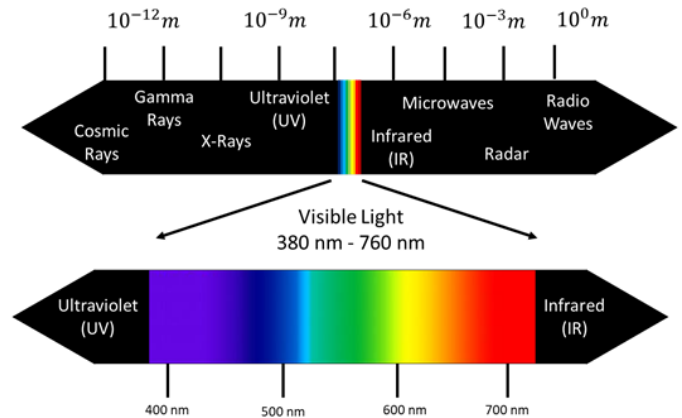
Diploma in Electronics & Communication Engineering Department



Government Polytechnic, Palanpur

Spectrum

Yearly e-Newsletter by EC department



Vision

To prepare competent diploma level electronics and communication engineers, catering the needs of industries and society as an excellent employee, innovator, and entrepreneur with moral values.

Mission

- Provide quality education in the field of EC engineering.
- Develop state of art laboratories, classrooms, and up gradation of Faculties.
- Strengthen industrial liaison by offering mutual beneficiaries services.
- Execute extra-curricular and co-curricular activities to inculcate innovation, entrepreneurship, and moral values

Highlights of this issue

- Faculty Achievements
- Star Performers
- Placement & Higher Education
- Tech Talk
- Student's Corner
- Department & Institute Level Activities

From the desk of Principal

Technology is the fuel for the society; it provides means to ease human lives, and Government Polytechnic, Palanpur is one of the institutes that provide skilled and ethical engineers to the society. This institute runs basic to advance engineering programs. Electronics and communication engineering department is one which stands ahead in terms of technology and advancements. The department is well equipped with the resources to prepare competent and industry ready EC engineers catering the needs of industries, innovators, and entrepreneurs with moral values. It is my great pleasure to see the first band (Volume 1) of the “Spectrum”, e-newsletter of Electronics and Communication Department being published.



From the desk of Head of Department



Electronics and communication engineering field has witnessed the evolution of semiconductor from vacuum tubes to MOSFETs, from telephones to 5G smart phones. Continuing the evolutionary tradition of the branch, it gives me immense pleasure to present its first yearly newsletter “Spectrum”. Spectrum intends to provide a platform for faculties, students, and all other stakeholders to share and receive news of latest updates of the activities carried out in the department. This newsletter will also be publishing achievements of staff members and students. I expect students to take the

‘Spectrum’ to new heights. A lot of hard work has gone into publishing this, and every stakeholder’s involvement will encourage us further. I extend my full cooperation and best wishes to the entire team behind Spectrum

Faculty Achievements



Dr. R. N. Patel has published a patent on 25/02/2022 titled “Design of wideband bow tie antenna using tapered balun for industrial, scientific and medical band application”. He has also published a patent on 21/01/2022 titled “Rectangular patch antenna with Tree-Fractal structure”

Mr. L. K. Patel has presented a paper in 3rd National Conference on “Recent Trends in Engineering, Management, Pharmacy, Architecture And Science” on 22/10/2021 titled “Analysis of matched key points of image registration using SIFT, SURF with different layers of CNN” and he has won best paper Runner-up.



Faculty Contributions & Trainings

Mr. S. J. Chauhan has contributed as lead member in the development of GTU syllabus for the subject ‘Electronics Workshop (4321101)’. He is institute coordinator for AICTE accreditation and GTU affiliation. He rendered his services as Hostel Rector.

Mrs. G. N. Acharya is coordinator of housekeeping committee in the institute.

Ms. M. K. Pedhadiya has contributed to the syllabus making process of the GTU subject ‘Electronic Circuits & Applications (4321104)’. She is co-coordinator of Student Section. She has completed a training on ‘Embedded Systems’.

Mr. L. K. Patel has contributed to the syllabus making process of the GTU subject ‘Fundamentals of Electronics (4311102)’. He is GTU coordinator of the institute.

Mr. N. M. Patel has contributed to the syllabus making process of the GTU subject ‘Fundamentals Electronic Circuits & Applications (4321104)’. He is working as co-coordinator in Gymkhana committee, training and placement cell.

Mr. R. N. Patel is serving as an administrative officer of the institute. He is editorial board member in ‘Global Research and Development Journal (ISSN: 24555703)’. He has completed a training on ‘Antenna Design’.

Mr. M. J. Dabgar is serving as coordinator of CWAN committee & co-coordinator of SSIP Cell. This year, he has taken Training on ‘Induction Phase – II’

Mr. R. C. Parmar has contributed to the syllabus making process of the GTU subject ‘Industrial Electronics (4331103)’. He is serving as co-coordinator of Student Section. This year, he has undergone Training titled ‘Induction Phase – II’.

Mr. S. P. Joshiara is serving as co-coordinator of CWAN, Website & GTU Committees. He has completed 'Induction Phase – II' Training.

Mr. N. J. Chauhan has contributed to the syllabus making process of the GTU subject 'Digital Electronics (4321103)'. He is serving as co-coordinator of AICTE accreditation Committee. This year, he has taken Training on 'Induction Phase – II'.

Star Performers

1. Stuti Raval (216260311005)	7.41 (Sem 1 - Winter 2021)
1. Chaudhary Adarsh (206260311005)	8.19 (Sem 3 - Winter 2021)
2. Chaudhary Piyush (206260311003)	7.68 (Sem 3 - Winter 2021)
1. Panchal Tirth (196260311008)	8.2 (Sem 5- Winter 2021)
2. Umatiya Anas (196260311016)	8.07 (Sem 5- Winter 2021)
1. Chaudhary Piyush (206260311003)	9.26 (Sem 2- Summer 2021)
2. Chaudhary Adarsh (206260311005)	8.87 (Sem 2- Summer 2021)
1. Solanki Niravbhai (196260311505)	8.21 (Sem 4- Summer 2021)
2. Umatiya Anas (196260311016)	7.11 (Sem 4- Summer 2021)
1. Prajapati Rohit (196260311013)	8.13 (Sem 6- Summer 2022)
2. Panchal Tirth (196260311008)	8.07 (Sem 6- Summer 2022)
3. Solanki Niravbhai (196260311505)	8.07 (Sem 6- Summer 2022)

Placements

1. Nirav Solanki (1962603110505)	- Mehta Expai Technologies Pvt. Ltd.
2. Darshil Modi (196260311006)	- Mehta Expai Technologies Pvt. Ltd.
3. Dabhi Ashwin (196260311002)	- Webilok IT services, Deesa
4. Damor Bhargav (196260311503)	- Webilok IT services, Deesa
5. Chhayank Mevada (196260311005)	- Webilok IT services, Deesa
6. Tirth Panchal (196260311008)	- Webilok IT services, Deesa
7. Rohit Prajapati (196260311013)	- Webilok IT services, Deesa
8. Mohammed Kaif (156260311501)	- Asahi Glass, Patan

Higher Education

Following students were admitted to Degree engineering program

1. Nirajkumar Prajapati (186260311002) – VGEC, Chandkheda
2. Jaydip Kadiya (166260311010) – GEC, Gandhinagar

Expert Lectures

Expert lecture on “Importance of Programming” (09/08/2021)

This expert lecture was delivered by **Mr. Pranav Dave, Tech Lead (Associate consultant), Tata Consultancy Services (TCS), Gandhinagar** in online mode. The session was conducted on the basics of programming, with details on the uses of programming with real time examples. The need of programming in different areas was also discussed. Speaker talked about “How the programming is used to solve and simplify complex problems”. The session was ended with the motivation to the students to start programming and build up career.



Organized By
Department of Electronics and Communication Engineering
Government Polytechnic Palanpur
(Under Directorate of Technical Education, Gujarat)



Expert Talk
On
Importance of Programming



Expert:



Mr. Pranav Dave
Tech Lead(Associate consultant)
Tata Consultancy Services(TCS),
Gandhinagar

Registration Link:
<https://forms.gle/gthtwKxWZHCu6U4d8>
Link to join:
[Click Here](#)



09 Aug 2021
11:00 am Onwards

Coordinator:
Ms. M. K. Pedhadiya,
(Lecturer in EC,
GP Palanpur)

Facilitator:
Mr. S. J. Chauhan
(HoD, Dept. of EC,
GP Palanpur)


Patrons:
Mr. S.D. Dabhi
(Principal, GP Palanpur)

Contact:
Email Id –
gppec11@gmail.com


Note: e-certificates will be given to the participants


Expert lecture on “Navigation with Indian Constellation (NavIC) and Its Application” (29/01/2022)

This expert lecture was delivered by **Dr. Mehulkumar Desai, Lecturer in EC, Government Polytechnic for Girls, Surat** in online mode. In this session the basics of satellite-based navigation system, different terminologies and NavIC architecture was explained to the participants. In it effects of positional accuracy and how the navigation system works were discussed. Various applications of satellite-based navigation system were discussed in depth. The session motivated students to work towards make in India by using the NavIC made in India and for India.




Organized By
Department of Electronics and Communication
Engineering
Government Polytechnic Palanpur
(Under Directorate of Technical Education, Gujarat)






India's NavIC
Expert Talk
On
Navigation with
Indian
Constellation
(NavIC) and Its
Application



*Dr. Mehulkumar Desai,
Lecturer in EC,
Government Polytechnic for
Girls, Surat*

He completed his Ph.D from SNIT, Surat, Gujarat, India. His work is on "Development and Analysis of Ionospheric Correction Model for Position Estimation with NavIC Receiver". He has published many papers in reputed journals and conferences. He is recognized as winner in the IITB-ISRO-AICTE Mapathon held on 7 Dec. to 22 Dec. 2020.

[Click Here to Join Talk](#)



29 January 2022
03:00 PM Onwards

Coordinator:
Ms. M. K. Pedhadiya,
(Lecturer in EC,
GP Palanpur)

Facilitator:
Mr. S. J. Chauhan
(HoD, Dept. of EC,
GP Palanpur)

Patrons:
Mr. S.D. Dabhi
(Principal, GP Palanpur)

Contact:
Email Id –
gppec11@gmail.com

Industrial Visit

Community Radio Palanpur (26/03/2022)



In this visit students got a chance to experience live radio broadcast. In addition, they have seen recording studio, studio equipments, FM transmission equipments and antennas. Students also got opportunity to meet Radio Jockey and manager of Radio Palanpur. They shared their journey and experiences in setting up community radio station at Palanpur.



Samsung Customer Care (29/03/2022)

In this visit students observed how smart phone, laptops and tablets are serviced at Samsung service center. Technician of Samsung care demonstrated how to disassemble various parts of Smartphone, Tablets, and laptops, then he also demonstrated how desolder and solder back the tiny components. At last, The Manager at Samsung care guided students about career scope in this segment of industry.



Sahajanand Laser Technologies (12/04/2022)

As a technology driven group of companies, Sahajanand Laser Technologies (SLTL) undertakes manufacturing of solutions in the fields of Laser Systems, Medical, Diamond & Jewellery, RF & Microwave, and Renewable Energy Machine Tools. Their innovative solutions are designed to match industrial requirements and beyond. During their visit to SLTL, students observed LASER cutting machines, LASER engraving machines, Robotic equipments, RF and microwave equipments manufacturing chain of STLTL.



JK Industries, Chandisar (02/05/2022)

JK industries majorly works on manufacturing and servicing of High voltage transformers used in power distribution by GEB. Assigned engineer explained repairing of Transformer to the students. Students also got the opportunity to see live troubleshooting and repairing of damaged transformers.



Farewell for 2022 pass-outs (04/04/2022)

A farewell was given to the 2022 pass-outs with a keynote by HoD, and kind words by all the staff members.



Participation in SSIP activities

Students from our department actively participate in various activities of SSIP Cell, GP Palanpur. Here are glimpse of some of the activities...

Spectrum | Band I (July 2021- June 2022)

Students from our department contributed as experts in practical sessions organized at Vidhya mandir School, Palanpur for 5 to 8 standard students by SSIP Cell. The sessions were aimed to give basic ideas of robotics and drone making to school students. It was a wonderful experience for our students to perform the role of teacher and demonstrate their skills to school children.



Total 80 students benefited from this session. Whole event was managed by: YUVRAJ RAJPUT (6th EC) & few other students. A Similar kind of events covering Robotics, Drone & RC Plane making were also conducted at Jasra Primary School Vidhya mandir school and few other schools.

Bootcamp on Robotics and Drone making at Jasra Primary School (25/05/2022)



College Level Activities

Tree Plantation (31/07/2021)

Institute organized Tree Plantation on 31 July 2021 in college campus and Approximately 150 different types of trees were planted in campus. Mr. Lalitbhai Vasvani and his team (Society for clean and green environment) are also joined with us for this event.



Use of Technology in Education (10/08/2021)

An Online Seminar for the students on “Use of Technology in Education” by Mr. S.R.Modi and Mr. R.H.Prajapati (Lecturer in Mechanical Engineering Department, G.P.Palanpur).

75th Independence Day (15/08/2021)

A flag hoisting ceremony was organized at Government Polytechnic Palanpur on 15th August 2021 to celebrate 75th Independence Day in which all students and staff members participated enthusiastically.



NBA Visit at the Institute (24- 26/09/2021)

Three departments namely Civil, Mechanical and Electrical department applied for the NBA accreditation. And for the successful completion of the visit all the EC staff members played a key role in it.



Thalassemia Camp (07/10/2021)

Institute has organized a Thalassemia camp for students on 7-10-2021. Awareness and counseling program is also carried out from the team of Indian Red Cross society, Ahmadabad for Thalassemia.



Garba Mahotsav (21/10/2021)

One day Garba Mahotsav is organized in institute for celebration of Navaratri. All the students and staff members participated enthusiastically.



Vyasan Mukti Abhiyan (22/10/2021)



A Seminar on Tobacco free movement-Drug Awareness is organized by Drug enforcement and reception department Palanpur at institute on 22-10-2021. Shree. N.A.Devani (PI, Drug Excise Department), Smt. G.D.Ahir (PSI, Women Police Station) and Smt. Jigishaben Tarar (Women counsellor, Women based support center) has given their valuable speech for Drug awareness.



Clean India Movement (28/10/2021)



Cleanliness drive was carried out for clean campus and surroundings under the clean India movement campaign on 28-10-2021.



National Unity Day (31/10/2021)

The birth anniversary of Iron man Shri Sardar Vallabhbhai Patel is celebrated on 31st October every year as “National Unity Day”. As a part of the day Pledge taking ceremony was arranged in seminar hall.



Republic Day (26/01/2022)

At Government Polytechnic Palanpur, On 26th January 2022, the occasion of 73rd Republic Day, a flag salute program was organized in the presence of “Hon'ble former MLA Rekhaben Khanesha”. In which all the officials and students of the institute enthusiastically participated.





Martyrs' Day (29/01/2022)

On Martyrs' Day on 30th January 2022, the opportunity to pay tribute to the martyred heroes who sacrificed their lives in the freedom struggle of India should be taken seriously and the spirit of faith and respect towards the martyrs should be awakened and the country should realize its importance for which an online talk was organized by History Coordinating Committee, Gujarat on 29th January 2020 at 3:00 pm at the institute. In this program, Shri Girishbhai Thacker, Vice Chairman, History Coordinating Committee, Gujarat gave a speech on the subject of “Indian Freedom Struggle (Bhartiya Swatantra Sangram)”. The program was also broadcast online through Google meet.



Women's Day (05/03/2022)

Women Development cell has conducted various activities in co-ordination with RUSA. On account of Woman's Day celebration on 05/03/2022 an expert lecture on “Laws related to women safety” by MS. YASHASHVI MEHTA PANDYA also an expert lecture on “Disadvantages of mobile and internet” was delivered by MS. GEETA ACHARYA (Sr. Lecturer in EC).

An event named “Food without flame contest” was also organized. In this event students took part enthusiastically and prepared ready to serve dishes without using the flame. Stuti Raval and Bijal Suthar (Sem 1 EC) won first prize and Khushbu Garasiya and Khushi Patel (Sem 6 EC) won second prize in the event.



Expert lecture on “Self-employment enhancement” was delivered by Tithi Vakil (Interior Designer). She gave a demo of how to enhance employment by developing a hobby. Speaker demonstrated steps for making a pastry/cake, inspiring students to develop hobby along with their profession.





A district level mega placement fair was organized as per directives of the government. Total 22 industries participated and conducted interviews of candidates from Science Colleges, Commerce Colleges, Arts Colleges Degree and Diploma Engineering Colleges across Banaskantha district. Total 9 students were shortlisted/selected by reputed industries like Webilok IT services and Mehta Expai company from our department. Team EC played a key role in smooth execution of Placement Fair.



પાલનપુર સરકારી પોલીટેકનીક ખાતે બનાસકાંઠાનો મેગા પ્લેસમેન્ટ ફેર યોજાયો

(નિ.ન્યુ.સ.) પાલનપુર,તા.૨૪ બનાસકાંઠા જિલ્લાની સરકારી અને અનુદાનિત ટેકનિકલ તેમજ ઉચ્ચ શૈક્ષણિક સંસ્થાઓમાં સ્નાતક અને અનુસ્નાતકના છેલ્લા વર્ષમાં અભ્યાસ કરતાં વિદ્યાર્થીઓને રોજગાર મળી રહે તે હેતુથી રાજ્ય સરકારના શિક્ષણ વિભાગ અને Knowledge Consortium of Gujarat (KCG) દ્વારા સરકારી પોલીટેકનીક, પાલનપુર ખાતે બનાસકાંઠા જિલ્લાનો મેગા પ્લેસમેન્ટ ફેર માર્ચ-૨૦૨૨નું આયોજન આજ રોજ કરવામાં આવ્યું હતું. આ પ્લેસમેન્ટ ફેરમાં બનાસકાંઠા

જિલ્લાની કુલ ૧૪ સરકારી અને અનુદાનિત કોલેજના અંતિમ વર્ષમાં અભ્યાસ કરતા બી.ઇ., ડિપ્લોમા, બી.સી.એ., બી.એસ.સી., એમ.એસ.સી., બી.એ., બી.કોમ. અને એમ.કોમ.ના કુલ-૨,૬૫૩ વિદ્યાર્થીઓએ રજીસ્ટ્રેશન કર્યું હતું તે પૈકી ૧,૨૪૦ વિદ્યાર્થીઓ ઈન્ટરવ્યુ માટે હાજર રહ્યા હતા. પ્લેસમેન્ટ ફેર માર્ચ-૨૦૨૨ દરમિયાન કુલ-૩૬૭ વિદ્યાર્થીઓને જુદા જુદા ૨૨ ઔદ્યોગિક એકમો દ્વારા નોકરી માટે પસંદ કરવામાં આવ્યા છે. તેમ પ્લેસમેન્ટ નોડલ અધિકારી એસ. ડી. ડાભીએ અખબારી યાદીમાં જણાવ્યું છે.

પાલનપુર સરકારી પોલીટેકનીક ખાતે બનાસકાંઠાનો મેગા પ્લેસમેન્ટ ફેર યોજાયો

૩૬૭ વિદ્યાર્થીઓને ૨૨ ઔદ્યોગિક એકમો દ્વારા નોકરી માટે પસંદ કરાયા

(માહિતી બ્યુરો, પાલનપુર)

બનાસકાંઠા જિલ્લાની સરકારી અને અનુદાનિત ટેકનિકલ તેમજ ઉચ્ચ શૈક્ષણિક સંસ્થાઓમાં સ્નાતક અને અનુસ્નાતકના છેલ્લા વર્ષમાં અભ્યાસ કરતાં વિદ્યાર્થીઓને રોજગાર મળી રહે તે હેતુથી રાજ્ય સરકારના શિક્ષણ વિભાગ અને Knowledge Consortium of Gujarat (KCG) દ્વારા સરકારી પોલીટેકનીક, પાલનપુર ખાતે બનાસકાંઠા જિલ્લાનો મેગા પ્લેસમેન્ટ ફેર માર્ચ-૨૦૨૨નું આયોજન આજ રોજ કરવામાં આવ્યું હતું. આ પ્લેસમેન્ટ ફેરમાં બનાસકાંઠા જિલ્લાની કુલ ૧૪ સરકારી અને અનુદાનિત કોલેજના અંતિમ વર્ષમાં અભ્યાસ કરતા બી.ઈ.,



ડિપ્લોમા, બી.સી.એ., બી.એસ.સી., એમ.એસ.સી., બી.એ., બી.કોમ. અને એમ.કોમ.ના કુલ-૨,૬૫૩ વિદ્યાર્થીઓએ રજીસ્ટ્રેશન કર્યું હતું તે પૈકી ૧,૨૪૦ વિદ્યાર્થીઓ ઈન્ટરવ્યુ માટે હાજર રહ્યા હતા. પ્લેસમેન્ટ ફેર માર્ચ-

૨૦૨૨ દરમિયાન કુલ-૩૬૭ વિદ્યાર્થીઓને જુદા જુદા ૨૨ ઔદ્યોગિક એકમો દ્વારા નોકરી માટે પસંદ કરવામાં આવ્યા છે. તેમ પ્લેસમેન્ટ નોડલ અધિકારી શ્રી એસ. ડી. ડાભીએ અખબારી યાદીમાં જણાવ્યું છે.

Voter

Awareness

Program

(05/05/2022)

As part of extra-curricular activities at Government Polytechnic Palanpur, NSS unit organized drawing competition and essay competition to create awareness among students about voting. The students enthusiastically participated in this competition and brought out their inner skill. The winning students were encouraged by giving certificates and prizes.



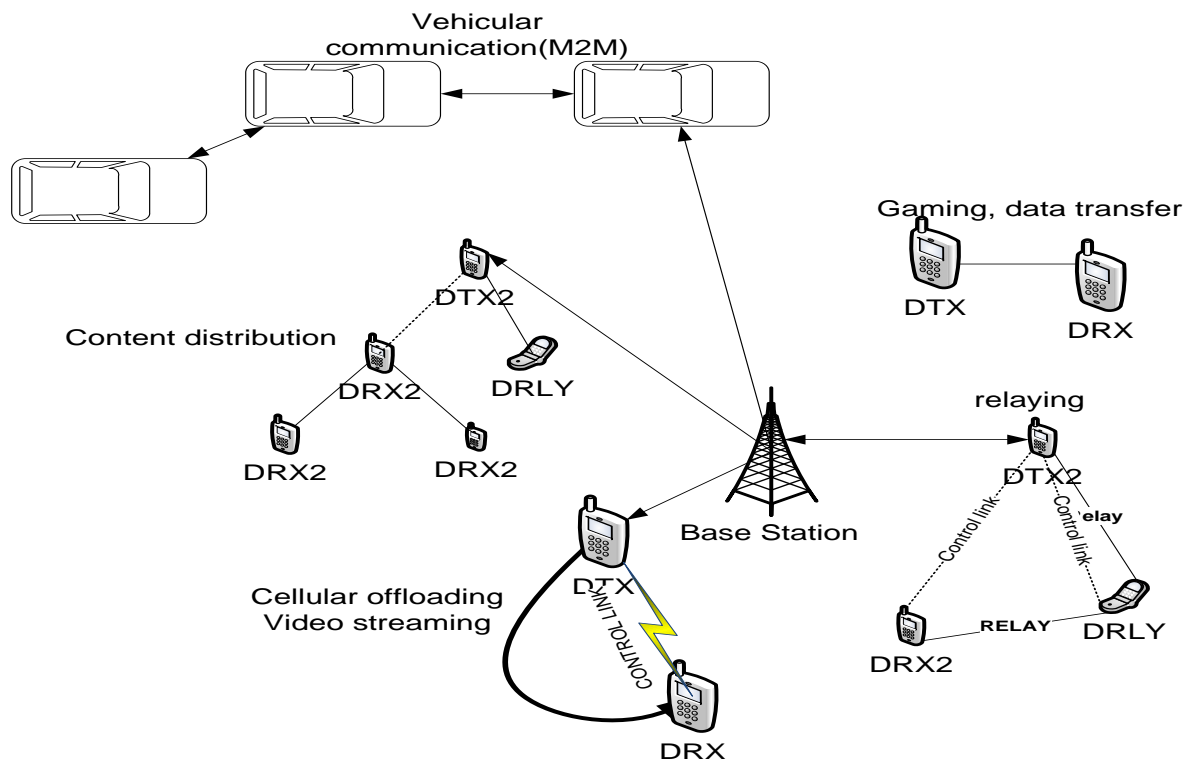
Yoga Day Celebration (21/06/2022)

At Government Polytechnic Palanpur, On 21st June 2022, the occasion of international yoga day various yoga represented by yoga teacher. In which all the officials, employees and students of the institute enthusiastically participated.



Device to device communication in 5G

Introduction of Android as an operating system and open source software's, free wares and ample of bandwidth-hungry applications results in scarcity of spectrum for communication. The growth of mobile devices, voice, and video over IP (VoIP) resulted in an exponential growth of data traffic; mobile data traffic expected to increase 1000 times over ten years. The forecast says that the 100 billion devices would be connected by 2030 by the onset of the internet of things. The massive increment in the connected devices causes overcrowded electromagnetic spectrum. In the 5G device to device, communication provides a prominent solution. Device to device communication (D2D) is defined as the communication among devices in close proximity, open to use cellular licensed as well as unlicensed frequency spectrum without the need to traverse the core network.

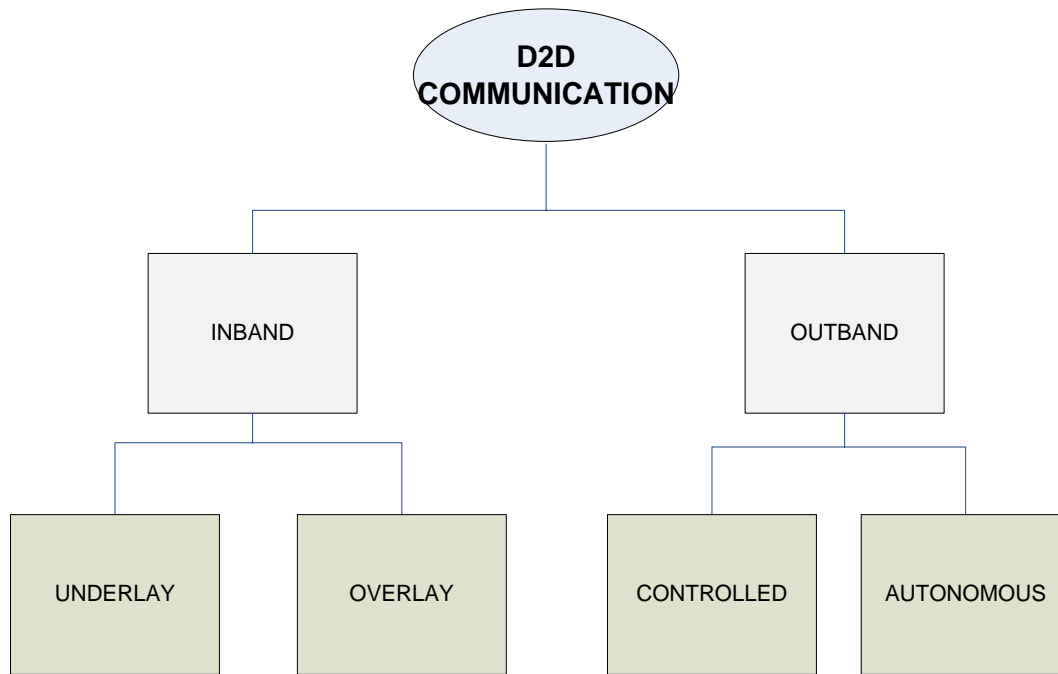


Use cases of D2D communication

D2D communication is a prime technology of 5G, which supports a variety of use cases as described in above figure. D2D communication will be an alternative to mobile communication demanding higher rate services as vehicular communication, content distribution in conferences, concerts, gaming, cellular offloading, relaying of data, and advertisement broadcasting in the streets. The use case of D2D communication of significance is public safety and disaster.

The devices close to, enables higher throughput, lower latency, lower transmission power, higher data rate and higher spectral efficiency and energy efficiency.

D2D communication exists on unlicensed as well as on the licensed frequency spectrum. Majority of the research is on the licensed spectrum (inband D2D) as it provides a higher level of security. Resources of cellular devices reused by the D2D devices in inband D2D communication (underlay inband D2D).



Reusing the resources certainly improves the spectral efficiency, but interference between the D2D user and cellular user introduced nevertheless. The eventual reduction in the spectral efficiency by using part of dedicated licensed spectrum for D2D users, however, provides fairness in provisioning of resources to D2D users and cellular users (overlay inband D2D). There are researchers recommending the use of unlicensed band for D2D users with Wi-Fi direct or Bluetooth (outband D2D) against licensed spectrum. The complexity increases in unlicensed spectrum, on account of interference. Above figure summarizes the D2D communication with respect to the spectrum usage.

For Further Study - <https://doi.org/10.1016/j.jnca.2018.10.012>

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Student's Corner

A poem on Teacher's written by Arman Ghasura (166260311008)

To all The Teachers - By Arman

From Hand Holding to Screen sharing

From chalk to chat

From Blackboard to WhiteBoard

From Real to virtual

The Journey was Difficult
But you Didn't Give up

From offline to online

From Keep Quite to Speak up

From no mobile to Turn On your mobile

From Conventional to Technical

The Journey was Difficult
But you Didn't Give up

From Notebook to Screenshot

From Teacher's Assessment to Self Assessment

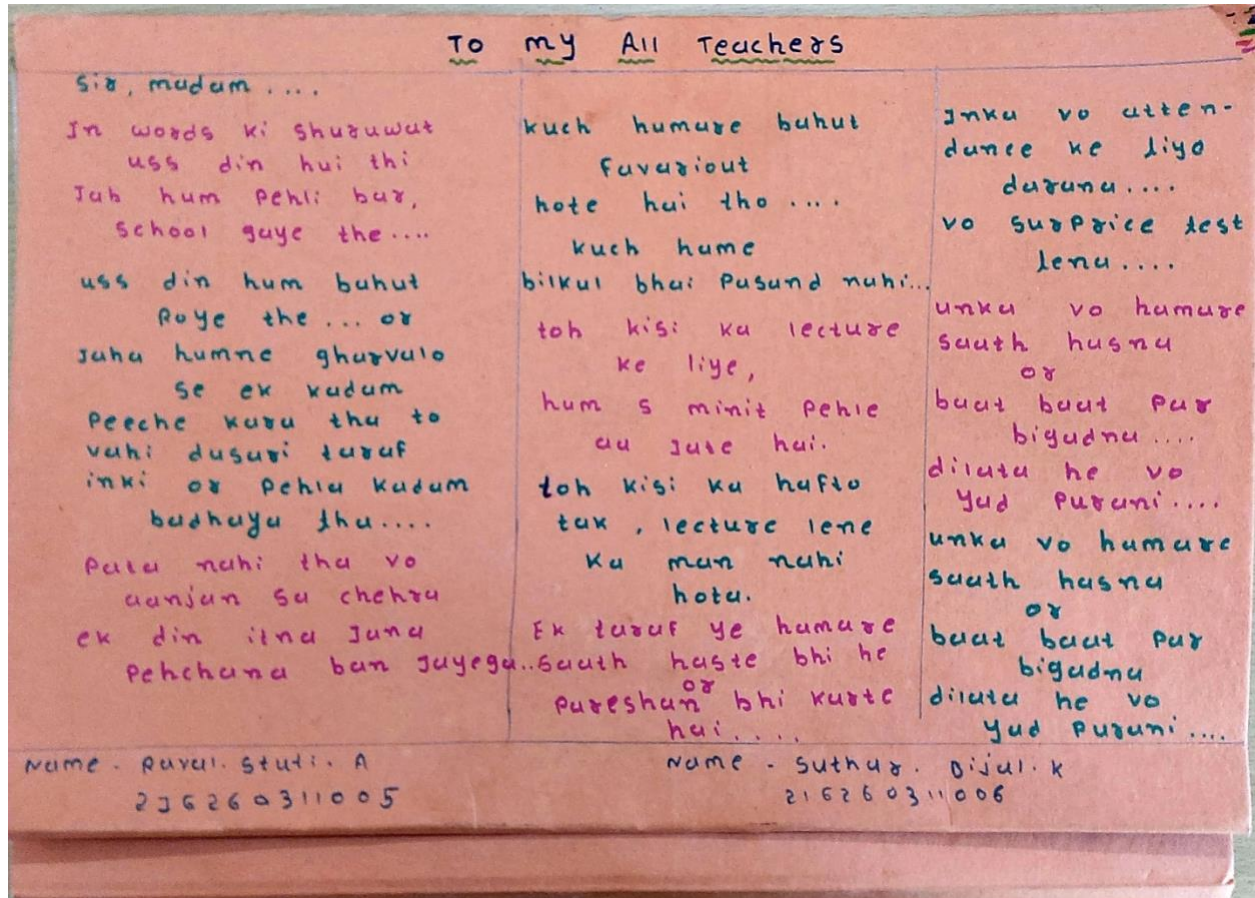
From Classroom to Croglemeet / Zoom / ms Teams

From School to Home

The Journey was Difficult
But you Didn't Give up

Thank you So much

A poem on Teacher's written by Stuti Raval (216260311005) and Bijal Suthar (216260311006)



Editor's Note

It gives us an immense pleasure to release the first band of "Spectrum" a Newsletter of EC Engineering. Continuous motivation and guidance by HoD made the first release of this band a success. We are also thankful to the principal of our institute to provide us a platform. To make upcoming Band's of our Spectrum more informative and innovative feedbacks are welcome from all the stakeholders.

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