



# INSTRUMENTATION & CONTROL DEPARTMENT

ISSUE – IV

JANUARY '21  
TO JUNE

MIND  
*Spark*



## Dr. Sweta P. Dave | Principal, G.E.C. Gandhinagar.

It brings me a great pleasure to share my thoughts in the Instrumentation and Control Department's newsletter, MindSpark. Today's high-demanding environment necessitates innovation, which stems from unusual thinking. So, students should follow their academic studies with great determination and enthusiasm, even though there are many constraints due to pandemic situation.

As the head of this institution, I would like to express my gratitude to the entire team for laying the groundwork for this institute. GEC-Gandhinagar faculties have always done their utmost to nurture students for their overall development. I wish all the students who are nearing the finish of their B.E. journey, to achieve great heights in their career and serve the community for its upliftment.

I hope that this newsletter provides one-of-a-kind platform for students and faculties to express their ideas and accomplishments.



## Prof. Manish R. Jani | Asso. Prof., HOD, I & C, G.E.C. Gandhinagar.

It gives me a great pleasure to present the fourth issue of the Departmental newsletter, MindSpark.

The major strength of the department is a team of well qualified and dedicated faculties who are continuously supporting and encouraging the students for their academic excellence. All the faculties are doing their best to serve the students by using various online means. The students are also learning from distance with great interest and also participating in various online activities. This pandemic has shown many new ways of teaching-learning and our department is very well adapting to this new technology.

Once again, I wish that through this newsletter, all my students and faculties will be encouraged to participate in more activities and contribute to the growth of the department.

# IN THIS ISSUE



## PAGE NO.

**01**

**ABOUT THE INSTITUTION**

**02**

**ABOUT THE DEPARTMENT**

**03**

**ABOUT THE FACULTY**

**06**

**THE RESOURCES**

**07**

**THE PLACEMENT**

**08**

**FACULTY MANEUVER**

**09**

**DEPARTMENTAL ACTIVITIES**

**12**

**STUDENT ACHIEVEMENTS**

**14**

**STUDENT CORNER**



# ABOUT THE INSTITUTION



**Government Engineering College, Gandhinagar is approved by AICTE, administrated by Directorate of Technical Education, Gujarat State and it is affiliated to Gujarat Technological University.**

**Since its establishment in 2004, the college is committed to give best education to its students in a manner that they not only excel in academics but are completely aware of future industrial needs for professional expertise through innovative and flexible curriculum.**




**This trains the students of this campus to reach their highest potential. The highly dedicated faculty members of GEC-Gn are experts in their professional fields.**

**Their professional skills and industry linkages help the students by grooming them to become competent engineers who will contribute to the society and economy in the long run**

## VISION

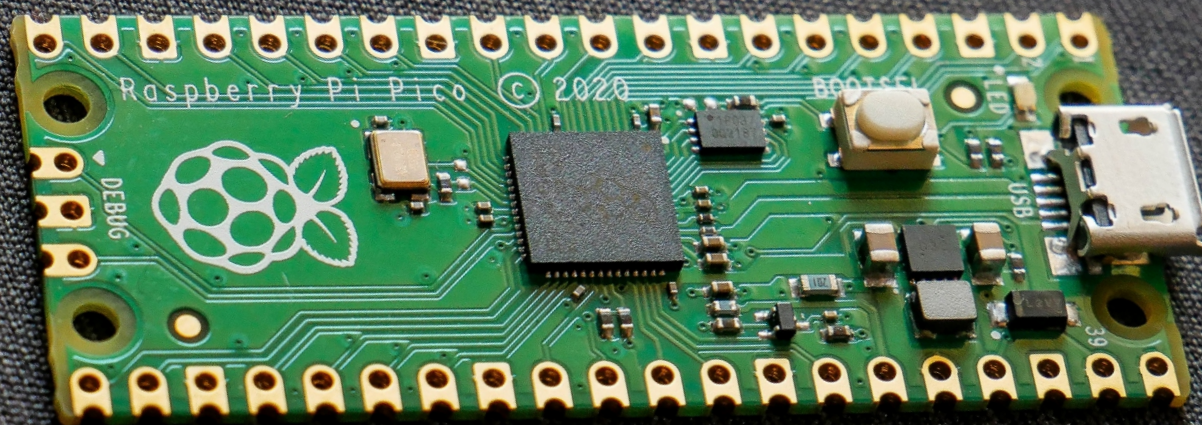
**To be a premier engineering institution, imparting quality education for innovative solutions relevant to society and environment.**

## MISSION

-  **To develop human potential to its fullest extent so that intellectual and innovative engineers can emerge in a wide range of professions.**
-  **To advance knowledge and educate students in engineering and other areas of scholarship that will best serve the nation and the world in future.**
-  **To produce quality engineers, entrepreneurs and leaders to meet the present and future needs of society as well as environment.**



# ABOUT THE DEPARTMENT



The Department of Instrumentation and Control Engineering offers B.E. programme at the Under Graduate level since year 2004. Presently department offers undergraduate course B.E.(Instrumentation & Control), recognized by AICTE (All India Council for Technical Education).

Instrumentation and Control engineering is the science of the measurement that includes study of sensors and transducers to measure and control crucial process variables like pressure, temperature, humidity, flow etc. Automation controllers as PLC, DCS and advance embedded controller are also the part of study to implement control algorithm for automation application. The department is equipped with well-developed laboratories to satisfy the course curriculum and the laboratories are planned to fill in the industry institute gap.

We aim to produce talented instrumentation and control specialists who cater to meet the technological challenges of industries and society with environmental consideration.

<b>VISION</b>	To impart quality education in Instrumentation & Control engineering through innovation to meet technological challenges of industries and society with environmental consideration.
<b>MISSION</b>	<ul style="list-style-type: none"> <li>To impart knowledge about present trends in the field of Instrumentation &amp; Control engineering.</li> <li>To train competent Instrumentation &amp; Control engineers who can design, operate process instrumentation and also manufacturing an automation systems in industries.</li> <li>To encourage students to work on innovative research projects related to Instrumentation &amp; Control engineering considering environmental aspect.</li> </ul>
<b>PROGRAM EDUCATION OBJECTIVE STATEMENTS (PEO)</b>	<p><b>PEO-I</b> To operate and maintain industrial Instrumentation &amp; Control system.</p> <p><b>PEO-II</b> To design Industrial Instrumentation &amp; Control system by innovative approach.</p> <p><b>PEO-III</b> To inculcate professional and ethical attitude, effective communication skills, multidisciplinary approach and an ability to relate Engineering issues in social and environmental context.</p> <p><b>PEO-IV</b> To acquire the ability for life-long learning needed for a successful Professional career.</p>
<b>PROGRAM SPECIFIC OUTCOMES STATEMENTS (PSO)</b>	<p><b>PSO1</b> Design and develop solutions for process control and automation industries and able to pursue career in research, industry, higher studies and adapt to changing technology.</p> <p><b>PSO2</b> Able to understand professional and ethical responsibility with effective communication skills and life-long learning.</p>

# ABOUT THE FACULTY

**Prof. Manish R. Jani**



**Associate Professor (Head of the Department)**  
M.E. / MTech. Qualified  
26 Years of Teaching Experience

**Dr. S. A. Rankawat**



**Associate Professor**  
PHD Qualified  
26 Years of Teaching Experience

**Dr. D. H Shah**



**Associate Professor**  
PHD Qualified  
22 Years of Teaching Experience

**Prof. A. D. Rathod**



**Associate Professor**  
ME (IC) Qualified  
21 Years of Teaching Experience

**Prof. M. B. Hingu**



**Assistant Professor**  
M.Tech., SYSCON - IITB Qualified  
24 Years of Teaching &  
01 Year Industry Experience

**Prof. I. U. Ajmeri**



**Assistant Professor**  
ME (IC) Qualified  
23 Years of Teaching Experience

**Prof. K. C. Dave**



**Assistant Professor**  
M.Tech (E And Tc) Qualified  
12 Years of Teaching Experience



# ABOUT THE FACULTY

**Prof. K. K. Acharya**



**Assistant Professor**

ME (IC) Qualified

21 Years of Teaching &

02 Year Industry Experience

**Dr. K. B. Pathak**



**Assistant Professor**

PHD Qualified

17 Years of Teaching Experience

**Prof. K. S. Vashishtha**



**Assistant Professor**

ME (IC) Qualified

11 Years of Teaching Experience

**Prof. N. V. Patel**



**Assistant Professor**

ME (IC) Qualified

10 Years of Teaching &

05 Year Industry Experience

**Prof. P. N. Patel**



**Assistant Professor**

ME (IC) Qualified

07 Years of Teaching Experience

**Prof. R. S. Rana**



**Assistant Professor**

M.Tech (IC) Qualified

05 Years of Teaching Experience

**Prof. R. L. Zadliya**



**Assistant Professor**

M.Tech (IC) Qualified

11 Years of Teaching Experience

# ABOUT THE FACULTY

## TEACHING STAFF DETAILS

**Prof. A. N. Bokade**



**Assistant Professor**  
ME (IC) Qualified  
16 Years of Teaching Experience

**Prof. J. J. Shah**



**Assistant Professor**  
ME (IC) Qualified  
05 Years of Teaching Experience

**Prof. C. B. Panchal**



**Assistant Professor (Contractual)**  
ME (IC) Qualified  
05 Years of Teaching &  
05 Years Industry Experience

## NON - TEACHING STAFF DETAILS

**Miss N. J. Makwana**



**Lab Assistant**  
BE (IC) Qualified  
06 Years of Experience



# THE RESOURCES

The Department has Spacious and Ventilated Classrooms and state of the Art Laboratories with Research Lab Facility, all that makes an excellent Infrastructure.

Process Control  
Laboratory - II



Embedded System  
Laboratory



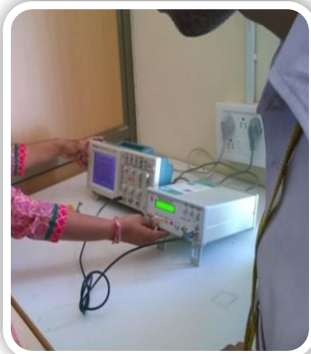
Computer  
Centre 1 & 2



Analog Electronics  
Laboratory



Communication  
Laboratory



Measurement & Process  
Control Laboratory



# THE PLACEMENT

## TRAINING & PLACEMENT CELL, IC DEPARTMENT

The Training and Placement cell continuously explores different areas of opportunities for placement. The Department's T&P team maintains liaison with industries for various training programs for students as per the need of industries as well as for final placement of students. Due to strong liaisoning with industries, our students are placed at many well-known companies.

Some of the major recruiters are:

- ✓ Adaptive Engineering Private Ltd., Ahmedabad, Gujarat
- ✓ Tatvasoft, Ahmedabad, Gujarat
- ✓ Eurotech Power Controls
- ✓ Vodafone India Ltd
- ✓ Axis Solutions Pvt. Ltd., Kathwada, Ahmedabad
- ✓ Gujarat Alkalies And Chemical Limited, Dahej, Bharuch
- ✓ Zydus Cadilla, Bharuch
- ✓ Multispan Control Instruments Pvt. Ltd., Ahmedabad
- ✓ Biolitec India Pvt. Ltd., Baroda
- ✓ Zydus Healthcare Ltd., Ahmedabad





# FACULTY MANEUVER

**Prof. K. K. Acharya**



GOVERNMENT POLYTECHNIC  
GANDHINAGAR

WEBINAR  
Latest Trends In  
Industrial Automation

Expert  
Prof. K.K.Acharya  
Assistant Professor IC  
GEC, Gandhinagar

JOIN US  
28th April, 2021 at 11.30 A.M

Facilitator Mrs. Rupal Merchant Principal, Government Polytechnic, Gandhinagar	Organizer Mrs. Binal P. Gandhi Lecturer IC, Government Polytechnic, Gandhinagar	Organizer Mr. A.K.Bilakhiya Lecturer IC, Government Polytechnic, Gandhinagar
--	---	--

Prof. K. K. Acharya had delivered an expert session on "Latest Trends in Industrial Automation" for students and faculties of Government Polytechnic, Gandhinagar on April 28th, 2021, on MS Teams platform.

**Prof. K. K. Acharya**

Prof. K. K. Acharya had delivered an expert session on "Latest Trends in Industrial Automation" for students and faculties of Government Polytechnic, Palanpur on April 30th, 2021, on MS Teams platform.



GOVERNMENT POLYTECHNIC, PALANPUR,  
INSTRUMENTATION AND CONTROL ENGINEERING DEPARTMENT  
ORGANIZE  
ONLINE EXPERT LECTURE  
ON  
LATEST TRENDS  
IN  
INDUSTRIAL AUTOMATION

Expert Faculty :  
Prof. Ketan Acharya,  
Assistant Professor,  
Instrumentation and Control  
Engineering Department,  
Government Engineering College,  
Gandhinagar.

All 4th and 6th Semester Students must attend

Date : 30th April, 2021,  
Day : Friday  
Time : 4.15PM to 5.15PM

(Link of the online Expert Lecture will be shared in whatsapp group.)

Organized by :  
Training and Placement Officer,  
Mr. M.J. Vadhvaniya,  
Instrumentation and Control Engineering Department,  
Palanpur.

**Dr. K. B. Pathak**

Prof. (Dr.) Kalpesh B. Pathak had participated in online FDP on "Emerging Technologies in Healthcare: IOT, AI, Computational Neuroscience, Wearable Technologies" conducted by ATAL Academy at LD College of Engineering between January 18 to 22, 2021.

**Prof. K. S. Vashishtha**

Prof. Keerti S. Vashishtha had participated in GUJCOST sponsored online FDP on "Tools and Trends in online Education system" organised by Electrical Engineering Department, Government Polytechnic, Palanpur, between March 15 to 19, 2021.

**Prof. N. V. Patel**

Prof. Niyat V. Patel had participated in Three Days Online Faculty Development Program on "Industry 4.0" by KBTCOE, Nashik- MAHARSTRA between May 20 to 22, 2021.

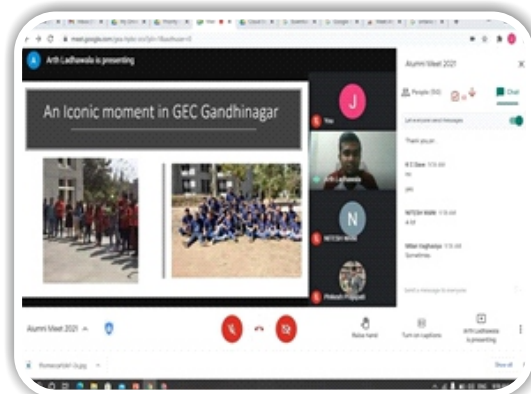
**Prof. M. B. Hingu**

Prof. Mukesh B. Hingu had participated in Three Days Online Faculty Development Program on "Industry 4.0" by KBTCOE, Nashik- MAHARSTRA between May 20 to 22, 2021.

# DEPARTMENTAL ACTIVITIES

## ALUMNI MEET

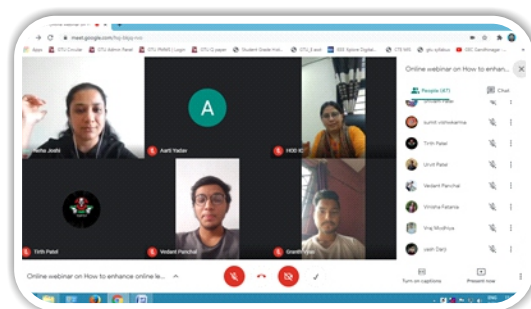
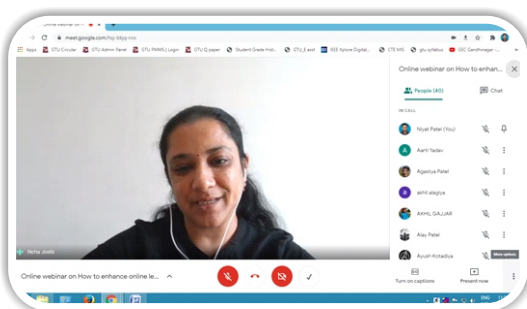
### Alumni Meet



Instrumentation & Control Department organized an online Alumni Meet on **April 11, 2021**. Mr. Vrushank Shah (Alumni student graduated in year 2017 GEC, IC) shared his views on **"Higher Studies and life in Canada"**. Mr. Arth Ladhawala (Alumni student graduated in year 2019 GEC, IC) also shared his view on **"Opportunities in Canada"**.

## WEBINAR SERIES

### "How To Enhance Online Learning"



A webinar on **"HOW TO ENHANCE ONLINE LEARNING"** was organised by IC Department and the session was conducted by Dr. Neha Joshi, Faculty, Communication Skills Department, Kadi Sarva Vishwavidyalaya, Gandhinagar.

The webinar was organised for Semester-4 IC students to enhance their online learning skills during pandemic duration. Several ways to enhance the learning process in online education were discussed during the webinar.

The ways included were effective approach, courses empowered with videos, improves digital proficiency, embrace the power of communication, content creation, flexible lesson plans, a team of competent and skilled teachers, result-oriented assessments etc.

### Swami Vivekanand

The Instrumentation & Control Department celebrated **Swami Vivekanand Birthday** on online platform on **January 12th 2021**.

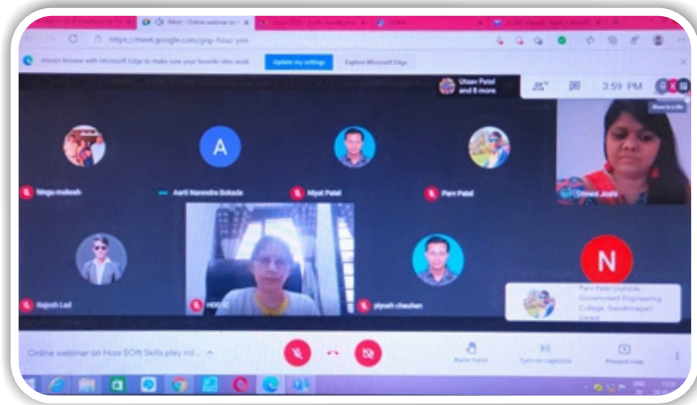
### Mahatma Gandhiji

A **Tribute to Mahatma Gandhiji** was given on Nirvana Divas on **January 30th 2021**, by IC department.



# DEPARTMENTAL ACTIVITIES

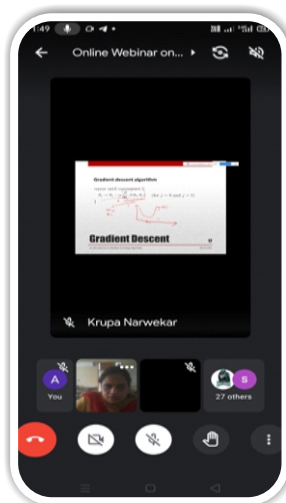
## "How Soft Skills Play Role In Shaping Personality"



A webinar was organised by IC Department on "How soft skills play role in shaping personality", on 28-01-2021 by IC Department and the session was conducted by Prof. Dhvani Pandya, Assistant Prof. (English & Soft Skills) St. Kabir Institute of Professional Studies, Ahmedabad.

The webinar was organised for semester-4 IC students to enhance their soft skills since soft skill is an important aspect in their societal interactions and building their successful career. In the webinar, students were taught about components and basic aspects of soft skills.

## "Machine Learning Algorithms"



A webinar was organised by IC Department on "Machine Learning Algorithms", on 9-2-2021, by IC Department.

The session was conducted by Dr. Krupa Narwekar, Asst. Prof. (I.C.), SVIT, Vasad.

The webinar was organised for semester-6 students under an Elective Subject: Artificial Intelligence & Machine Learning: AIML (3161710).

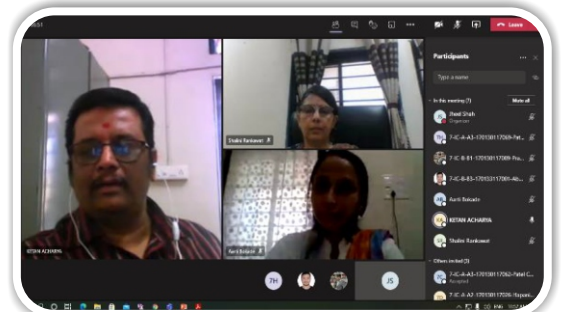
The students were given understanding about basic Machine Learning Algorithms and its implementation on Python.

The expert also highlighted about the various tools that can be used for implementing Machine Learning Algorithms.

## "Improvement in soft skills and personality"

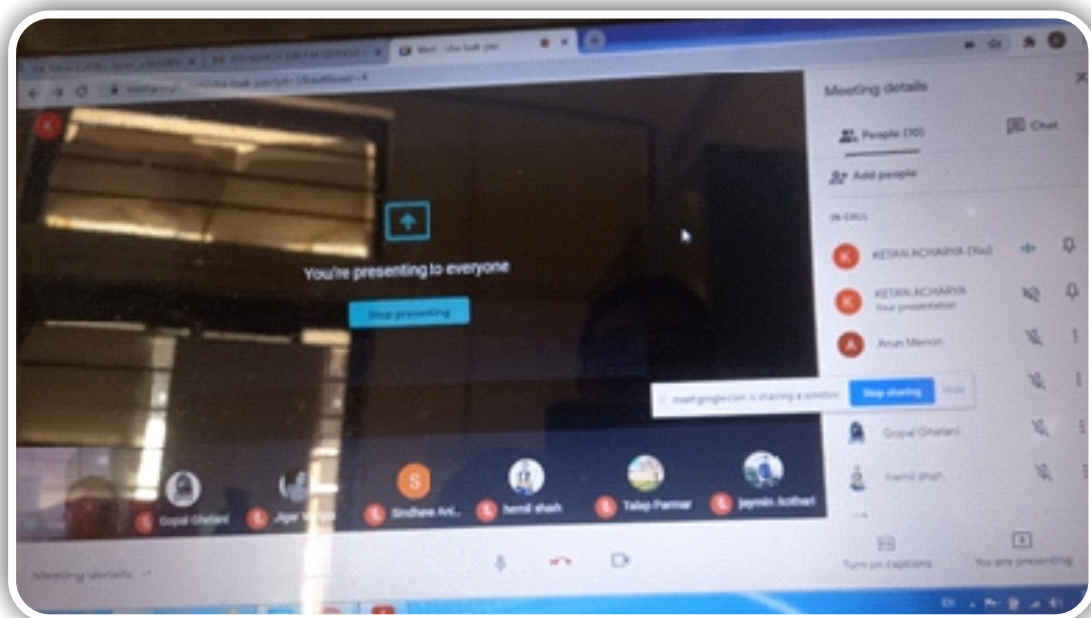
A webinar was organised by IC Department on "Improvement in soft skills and personality" on 20/02/2021. The session was conducted by Prof. K. K. Acharya, Asst. Prof. (I.C.), GEC, Gandhinagar. It gave an opportunity to students of sem-8 (IC) to understand the importance of Job interview.

Various topics such as information about placement fair to be conducted by Govt. of Gujarat, placement opportunities in placement fair, various types of companies in placement fair, brief idea about range of pay packages, tips for interview, dos and don'ts for interview were covered in the webinar.



# DEPARTMENTAL ACTIVITIES

## "Sensitization Lecture On ISA Membership Benefits"



A webinar was organised by IC Department on "Sensitization Lecture on ISA Membership benefits" on 4-03-2021.

The session was conducted by Prof. K. K. Acharya, Asst. Prof. (I.C.), GEC, Gandhinagar. It was organized for semester-IV & VI IC students.

In the webinar the students were briefed about :

- ✂ Dept. ISA students' chapter.
- ✂ Activities carried under Dept. ISA students' chapter.
- ✂ Membership benefits.
- ✂ How to become member of ISA students chapter.

# STUDENT ACHIEVEMENTS

Dhruv Maniya from 1st year in IC department made a Website using python language.

**TO OPEN :-** <https://bit.ly/3DTzrF3>

**Dhruv  
Maniya**

**Bansidhar Mishra from semester-6-IC,  
has done project which is helpful for Parkinson  
patient.**

## Steady Spoon For Parkinson disease

I done this project during 7th semester as a mini project.



Parkinson's disease is one of the most common nervous system disorders after Alzheimer. It is a neurodegenerative disorder. Early detection of Parkinson's disease can be helpful in preventing it but it cannot be completely cured. In Parkinson's Disease when a person try to focus more on his/her specific body part, at that time the body part on which he/she focuses more shakes very vigorously.

The most important problem of Parkinson's patient is tremoring due to this tremor they do not eat properly.

Because my grandfather also suffering from Parkinson Disease, so I know how the condition is going problematic. Due to continuous shaking for their hands they are not able to eat food properly and therefore, their food fall down. So I make a spoon which will stable during tremoring, so the food doesn't fall from spoon, then they can eat properly.

The objective of this project was to keep the spoon always in upward direction so that the food does not fall down while eating. My idea was that when we move our hand in downward direction the spoon goes in the upward direction and vice-versa. Similarly, when our hand goes in right direction the spoon will go in the left direction and vice-versa. Note that the spoon will always remain facing upwards so that the food does not fall down from the spoon.



**Bansidhar  
Mishra**

**JIGAR BHATT from semester-6  
became the Winner of Flying Buzz event  
at Parul University- Baroda for Line of  
Sight (LOS) Drone flying.**

**Jigar  
Bhatt**



**Rajesh Rameshbhai Lad from semester-4 learnt  
about Different types of Arduino and Node MCU.**

**Also learnt to do programming on it and prepared  
drone by using hardware as follows.**

- ✂ Intel Galileo Gen2
- ✂ Raspberry Pi
- ✂ Drone Technology Modification etc.



**Rajesh  
Rameshbhai  
Lad**



# STUDENT ACHIEVEMENTS

SMIT RAMESHBHAI SONI from semester-6, participated in **Gujarat state individual yogasana sports championship 2021** which was held on **12th to 21st March 2021**.

He participated in senior boys group. He achieved **2nd rank(Runner Up)** position & selected for national level championship.



**Smit  
Rameshbhai  
Soni**

Harsh Trivedi, student of semester-4- IC, has participated in a group talk on **"Fuel Conservation: Saksham 2021"** by SPCE, Bakrol, Anand on **09-02-2021**.

**Harsh  
Trivedi**

Nitesh Wani, student of semester-4th IC, completed qualification round of **International Astronomy and Astrophysics Competition of 2021**.

**Nitesh  
Wani**

Bhavik Rajput, student of semester-4th IC, has completed **online course on Cryptocurrency** under Udem.

**Bhavik  
Rajput**

# STUDENT CORNER

## ARTICLES

FPV stands for **First Person View** and is gaining momentum in Drone Industries. It basically consists of **carbon fibre frame** where in all electronics such as Flight Controller, ESC (electronic speed controllers), RX (receiver) and four 3-phase DC motors goes in. Also, as it is **FPV Drone**, it has the analog camera with lowest possible latency. This video feed gets transmitted with a **VTX** (video transmitter works on 5.8GHZ). The transmitted video feed is seen by the pilot through **FPV goggles**, which receive the VTX signals with help of single or in some cases dual antennas. The pilot controls the drone in real time with some considerable latency. The RX-TX connection works on **various protocol like SBUS, IBUS, PPM and CRSF**. In India, legal and free to use channels include 2.4GHZ and 915MHZ. Power source used in **Lithium Polymer** (Li-Po) batteries with high capacity of discharge.

- 🔗 RX-TX Transmitting range considering Line of Sight: **20+kms**.
- 🔗 Video Transmitting range considering Line of Sight: **10-20kms at 1.2W** and **Omni RHCP antennas**.
- 🔗 Flight time under Low Wind Conditions: **6 to 10 mins** depending on thrust to weight ratio.
- 🔗 Various applications of FPV Drones:
  - ♥ Military operations.
  - ♥ Long range search operations.
  - ♥ Surveying and mapping.
- 🔗 Added features that can be used but not mandatory: **"GPS"** in case the RX-TX connection fails to **Return to Home (RTH)** only if adopting long range.



### REFERENCES AND PICTURES :-

<https://bit.ly/3nctLzS>



FPV Drone

~ JIGAR BHATT  
(IC 6th SEM)

# STUDENT CORNER

## CREATIVE CORNER



चाहत हमारी 'दिनकर' बनना  
कौन कहता हूँ मैं अफसर?  
मैं तो 'नुनूवा' बन इतराता हूँ  
रोज शाम मैं नदी किनारे  
यह बात मैं खुद से दोहराता हूँ  
कि कौन लिखेगा सच कलम से?  
सत्ता के आगे झुकना चाहे कौन?  
चाहत हमारी 'दिनकर' बनना  
अब अभियंता बनना चाहे कौन?

बन जाए मेरी कलम धनुष  
स्याही को तीर बनाऊँ मैं  
उठा कलम मैं बार करूँ  
अपने शब्दों से ही प्रहार करूँ  
चाहे अकेले ही कुरुक्षेत्र में  
पर समर को पीठ दिखाएँ कौन?  
चाहत हमारी 'दिनकर' बनना  
अब अभियंता बनना चाहे कौन?

उठा कलम आवाज़ बनू गुंगो की  
लगा मरहम, पट्टी करूँ मैं पीड़ितों की  
बन अक्षर प्रोत्साहित करूँ मैं प्रत्येक संघर्षी को  
बनू मैं आंसू तपती धरती का  
चाहे लाखों कलम बिक जाए हाटों में  
गुरु के ज्ञान को बेचना चाहे कौन?  
चाहत हमारी दिनकर बनना  
अब अभियंता बनना चाहे कौन?

करूँ मैं वर्णन इस सुंदर सृष्टि का  
बनू मैं कवच कुंडल नष्ट होती प्रकृति का  
कर साकार स्वप्न मैं अपना  
खुशी-खुशी अस्त हो जाऊँ मैं  
लिखूँ मैं हिंदुस्तानी भाषा  
हिंदी-उर्दू को अब बाटे कौन?  
चाहत हमारी 'दिनकर' बनना  
अब अभियंता बनना चाहे कौन?  
~ विद्यासागर ओझा

Poem

~VIDHYASAGR OZA  
(IC 8th SEM)



# STUDENT CORNER



A beautiful painting made by Aesha Prajapati from IC-semester-6.A.

**Aesha  
Prajapati**

A beautiful painting made by Vinisha Fatania from IC-semester-4.



**Vinisha  
Fatania**



## CHAIR PERSON

DR. SHWETA P. DAVE,  
PRINCIPAL,  
G.E.C. GANDHINAGAR.

## EDITOR

PROF. M. R. JANI,  
HEAD OF THE DEPARTMENT, I.C  
G.E.C. GANDHINAGAR.



## ASSOCIATE EDITOR

DR. D.H.SHAH  
ASST. PROF. I.C.  
G.E.C. GANDHINAGAR

PROF. K.S.VASHISHTHA  
ASST. PROF. I.C.  
G.E.C. GANDHINAGAR

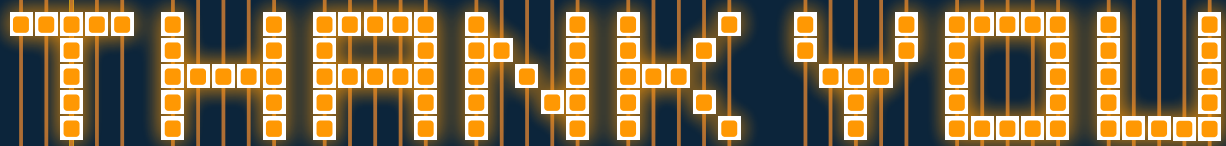
## EDITORIAL TEAMS

### MATERIAL SECTION

Akshaysingh Chaudhary, 6th Sem  
Dhruv Dudhwala, 4th Sem  
Dhruvradsinh Piludariya, 4th Sem  
Dhwanit Patel, 4th Sem  
Yogita Bhimani, 4th Sem

### DESIGNING SECTION

Keval Dharaiya, 6th Sem  
Vedant Panchal, 4th Sem  
Vinisha Fatania, 4th Sem



G.E.C. GANDHINAGAR



GOVERNMENT  
ENGINEERING COLLEGE  
GANDHINAGAR



**CONTACT US**  
Nr. Animal Vaccine Institute,  
Sector-28, Gandhinagar, Gujarat-382028



7923215167



<http://www.gecggh.cteguj.in>