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# elektronika times

Issue 01 July - September 2023

# Department of Electronics and Communication Engineering
# School of Engineering

## FROM THE DESK OF DEAN, ACADEMICS – PROF. (DR.) SHRUTI VASHIST

Creativity and innovation are key pillars of education, and the Electronics and Communication Department's newsletter is a wonderful blend of both. This newsletter not only highlights the numerous achievements in the field of Electronics and Communication Engineering, but it also promises to fascinate our readers with its charm.

I'd like to express my heartfelt congratulations to the hardworking editorial team of students and staff, who worked relentlessly to complete this News Letter in such a short period of time. I extend my best wishes to the entire team and am convinced that they will be successful in their future endeavours.

## FROM THE DESK OF DEAN, ENGINEERING – PROF. (DR.) GOLDIE GABRANI

It is with immense pride and gratification that I extend a warm welcome to you, marking the debut of our inaugural Newsletter for the Department of Electronics and Communication Engineering. As we embark on this thrilling journey together, it gives me immense pleasure to share some reflections and thoughts.

The launch of this newsletter signifies a momentous achievement for our School. It underscores our unwavering commitment to fostering open communication, transparency, and active community engagement.

"The function of education is to teach one to think intensively and to think critically. Intelligence plus character – that is the goal of true education." -Martin Luther King, Jr

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# Message from the Head of Department

**PROF. (DR.) CHARU PATHAK**

Dear Colleagues,

I am thrilled to announce the publication of our department's very first newsletter! I want to take this opportunity to congratulate and thank our team for making this possible.

The newsletter is an excellent platform to showcase the achievements of our department. The primary objective of this newsletter is to inform our members about the latest events, research, and initiatives undertaken by the department. I wish, our newsletter is a vital tool for improving communication within the department and for enhancing our collective sense of involvement and engagement.

I invite all members to actively contribute to the newsletter by sharing their achievements, stories, and insights.

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# IETE STUDENT FORUM CHARTERED

On September 29, 2023, an important milestone achieved at Manav Rachna University, Faridabad, with the formal chartering of the IETE Student Forum (ISF) in the Department of Electronics and Communication Engineering (ECE). This significant achievement marked the establishment of a dedicated platform for students to engage in academic and professional activities, discussions, and initiatives related to electronics and communication engineering.

## IETE

The Institution of Electronics and Telecommunication Engineers (IETE) is a professional society in India dedicated to promoting and advancing the field of electronics and telecommunications. It was founded in 1953 and has since played a significant role in the development and dissemination of knowledge in these domains.

The IETE conducts various activities, including educational programs, research, and publications, to support professionals and students in electronics and telecommunications. It also offers membership and certification to individuals in these fields, serving as a platform for networking and knowledge sharing.

## BENEFITS OF ISF MEMBERSHIP

- **Priority Paper Publishing**: ISF members get the advantage of having their research papers or articles published with priority. This means their work may be published more quickly or given special attention in relevant publications.
- **Access to Tech Publications:** Members have access to technical publications, which could include journals, magazines, or other materials related to electronics and telecommunication engineering. This keeps them updated on the latest research and industry trends.
- **Reduced Fees for IETE Events:** Members enjoy discounts or reduced fees for events organized by the IETE (Institution of Electronics and Telecommunication Engineers). These events could include seminars, conferences, workshops, or other professional gatherings.
- **Exclusive ISF Identity Card:** Members receive an exclusive identity card, which can serve as proof of their membership. It may also grant them access to specific member-only benefits or events.

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*21ST SEPTEMBER 2023*

# SEMINAR

## G20 Overview and its focus on SDGs

A student seminar was held on the topic, "**G20 Overview and its Focus on SDGs**" in HT-10 at 2:00 pm onwards. The Seminar proved to be a vital platform for knowledge exchange, empowerment, and dialogue on pressing global issues. By emphasizing the importance of SDGs and encouraging students to participate actively, the event set a positive tone for the future. The seminar's aspiration to create a generation of confident, articulate, and passionate leaders is a step towards a brighter, more sustainable world.

**Key Discussion Topics**

The event featured in-depth discussions on a variety of critical topics:

**1. Digital Public Infrastructure:** Participants explored the role of digital public infrastructure in facilitating access to essential services and promoting economic growth in the digital age.

**2. Trade in Electronics:** The seminar delved into the complexities of electronic trade, considering its impact on global economies, supply chains, and technological innovation.

**3. Women-led Development:** Discussions revolved around the role of women in driving development and the importance of gender equality in achieving sustainable development goals.

**4. Geopolitical Uncertainties:** Participants examined the current geopolitical landscape and its implications for international cooperation and global stability.

**Special thanks to the judges of this event, Dr. Charu Pathak and Dr. Meenakshi Gupta. The event is hosted by Aryan Singh Chauhan( 2nd year student ) and his technical team members.**


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*28TH SEPTEMBER 2023*

# STUDENTS SEMINAR

## on SDG1 and SDG9


**Student Seminar on SDG 1 and SDG 9, Sept 28, 2023, 2:00pm, Swami Vivekanand Library**

Topics discussed in this event are

- SDG 1: No Poverty
- SDG 9: Industry, Innovation, and Infrastructure

In this event, our primary goal is to raise awareness about the United Nations' Sustainable Development Goals (SDGs) and to devise concrete solutions specifically targeting challenges related to SDGs 1 and 9. SDG 1 aims to eradicate extreme poverty, ensuring that no one lives on less than $1.90 per day. Addressing this goal involves strategies such as social safety nets, economic empowerment, and equitable access to resources. Meanwhile, SDG 9 focuses on fostering innovation, infrastructure development, and sustainable industrialization to promote inclusive and sustainable economic growth.

Our event is a platform for individuals, organizations, and experts to come together, sharing knowledge and experiences to develop innovative solutions. By concentrating on these two SDGs, we can hone in on the pressing issues of poverty and inadequate infrastructure, recognizing that they are interlinked challenges that demand coordinated efforts. Through discussions, workshops, and collaborative initiatives, we aim to empower communities, leverage technology, and promote sustainable economic practices. Together, we hope to make significant strides towards achieving these crucial SDGs, building a more equitable and prosperous future for all.

**Special thanks to the judges of this event, Dr. Charu Pathak. The event is hosted by Aryan Singh Chauhan( 2nd year student ) and his technical team members.**


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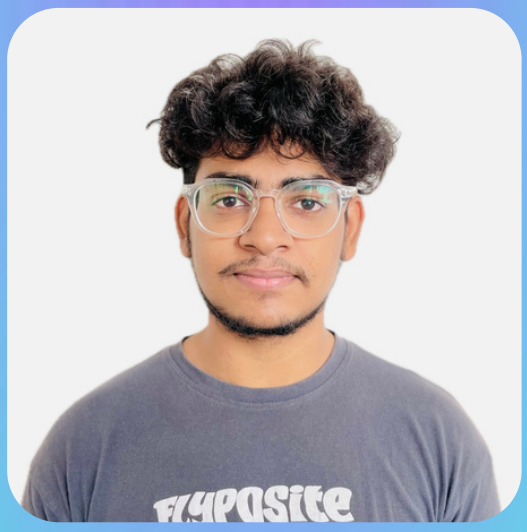
# INTERNSHIP OPPORTUNITIES

## SHINING BRIGHT: INTERNSHIP OPPORTUNITY FOR ECE STUDENTS AT TRISH I PVT LTD.

We are thrilled to share some exciting news from the Department of Electronics and Communication Engineering (ECE) at Manav Rachna University. Two of our bright and talented students, Himanshu Chandel and Mridual Rohilla, both in their third year of B.Tech, have secured an outstanding internship opportunity at Trish I R&D Private Limited.



Himanshu Chandel
B.Tech. ECE 3rd year

Mridul Rohilla
B.Tech. ECE 3rd year

## TOP NEWS

Himanshu and Mridul have been offered a two-month research internship at Trish I Pvt Ltd, an opportunity that may extend beyond two months, depending on the project's progress. What makes this internship remarkable is the nature of the project itself – "Bone Density Assessment using Near-Infrared Spectroscopy (NIR)." This live project is set to be monitored by the Department of Science & Technology, Government of India, and FITT (Foundation for Innovation and Technology Transfer), IIT Delhi.

*10TH JULY, 2023*

# INTERNSHIP AT TRUECHIP

TrueChip Solutions Pvt Ltd.is a renowned company specializing in VLSI design and digital electronics. The company is well-known for its cutting-edge technology and innovative solutions in the semiconductor industry.


**Sample Certificate**

**Objectives :**

- Gain a deeper understanding of digital electronic circuits and systems.
- Learn about the design and verification of VLSI circuits.
- Work on real-world projects and applications.
- Acquire practical skills in using industry-standard design tools and software.

**Report:**

Fourteen students from the department of ECE, 3rd sem had undergone rigorous training on digital design of combinational and sequential circuits, VLSI design, and Verification as part of their summer internship from Truechip in collaboration with their knowledge partners FutureWiz Ltd. from 16th June 23 to 10th July 23.

Scan QR to view the Certificates of Completion of Internships

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# SPORTS CORNER

## BOSM'23


### BITS Open Sports Meet (BOSM)

BOSM is the annual sports fest of BITS Pilani,Pilani Campus, since its inception in 1986,has been a stage for college teams to showcase their supremacy by competing amongst the nation's best talents.

"Sports do not build character. They reveal it." — Heywood Broun

## HIGHLIGHTS

From September 22nd to 26th, 2023, the students of Semester 1st and 3rd from the Department of Electronics and Communication Engineering (ECE) at Manav Rachna University showcased their sportsmanship and basketball skills at the 36th edition of the BITS Open Sports Meet (BOSM) held at BITS Pilani.

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# FACULTY ACCOLADES

## Promotions in the Department

The competent authority was pleased to promote Dr. Niharika Thakur to the post of Associate Professor. Over the years she has done a commendable job and brought laurels to the department of ECE

## Award of Ph.D.

Mr. Lokesh Bhardwaj, Assistant Professor, successfully defended his doctoral thesis titled, "**Performance Estimation of Massive MIMO-NOMA systems in Multi-Cell Wireless Networks**" from the National Institute of Technology, Patna.

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# THE SIGNIFICANCE OF HUMAN-CENTRIC NETWORKS: AN EXPLORATION

## HUMAN-CENTRIC NETWORKS:

Human centric networks are next generation networks that refers to a strategic approach that seeks to place human as center in decision making and innovation. Transformation from a focus on technology to a focus on humans in system design has the potential to enhance the way users can utilize technology for their benefit. This design actually places humans at the center of development for smooth user experiences.

It has the potential to greatly improve the quality and safety of technology whether its commercially or publicly used. How ever the technology isn't new. Apple and Google have integrated it in their devices to make them user friendly for person with disabilities like voice over screen reader, magnifier, Siri etc. These networks can provide student-specific learning experiences by analyzing the student's data like learning style, preferences etc. As institutions are focusing on career readiness it can be used to design programs that actually meet the learner needs. It can also be used to create inclusive learning environment.

Another known application of human design networks is FITBIT, Spotify, battery operated Colgate tooth brush. Spotify incorporates human centered design to enhance the user experience by personalizing the needs like creating plays lists, suggesting podcasts based on users' previous data. Also, Colgate tooth brushes incorporate this design in their recent battery-powered electric brushes that recommend duration and with the right pressure for brushing. In summary human centric networks are simply not a technological concept, they represent a significant change in our approach towards innovation and connectivity. They remind us that technology's ultimate strength resides in its ability to enhance our lives placing human at center of our interconnected world. As we adopt this paradigm shift, we set off on a path where technology becomes a force for individual empowerment diversity, and, most importantly, wellbeing in a quickly evolving digital environment.

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# Research and Development

Patents

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

## Utility Patent

Filed an Indian Utility Patent titled, “IOT DRIVEN SENSOR NETWORK ALERT SYSTEM FOR DETECTION OF HYDROGEN GAS LEAKAGE IN DISTRIBUTION PIPELINES” 1) Dr. Charu Pathak, 2). Dr. Piyush Charan, and 3). Dr. Joginder Singh with application number 202311039870A on date 11th June 2023 and it got published in Issue Number 27/2023 on 07th July 2023.


Design Application Details

Design Number: 390493-001

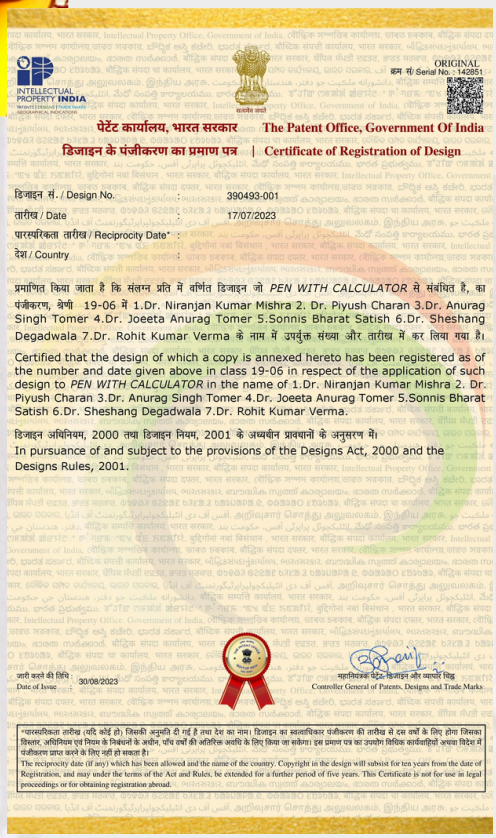
Filing Date: 17/07/2023 21:33:00

Article Name: PEN WITH CALCULATOR

Class: 19-06-MATERIALS AND INSTRUMENTS FOR WRITING BY HAND, FOR DRAWING,FOR PAINTING, FOR SCULPTURE, FOR ENGRAVING AND FOR OTHER ARTISTIC TECHNIQUES

Journal Number: 35/2023

Journal Date: 01/09/2023 00:00:00


INTELLECTUAL PROPERTY INDIA

ORIGINAL

क्रम सं/ Serial No. : 142851

पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 390493-001

तारीख / Date : 17/07/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *PEN WITH CALCULATOR* से संबंधित है, का पंजीकरण, श्रेणी 19-06 में 1.Dr. Niranjan Kumar Mishra 2. Dr. Piyush Charan 3.Dr. Anurag Singh Tomer 4.Dr. Joeeta Anurag Tomer 5.Sonnis Bharat Satish 6.Dr. Sheshang Degadwala 7.Dr. Rohit Kumar Verma के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 19-06 in respect of the application of such design to *PEN WITH CALCULATOR* in the name of 1.Dr. Niranjan Kumar Mishra 2. Dr. Piyush Charan 3.Dr. Anurag Singh Tomer 4.Dr. Joeeta Anurag Tomer 5.Sonnis Bharat Satish 6.Dr. Sheshang Degadwala 7.Dr. Rohit Kumar Verma.

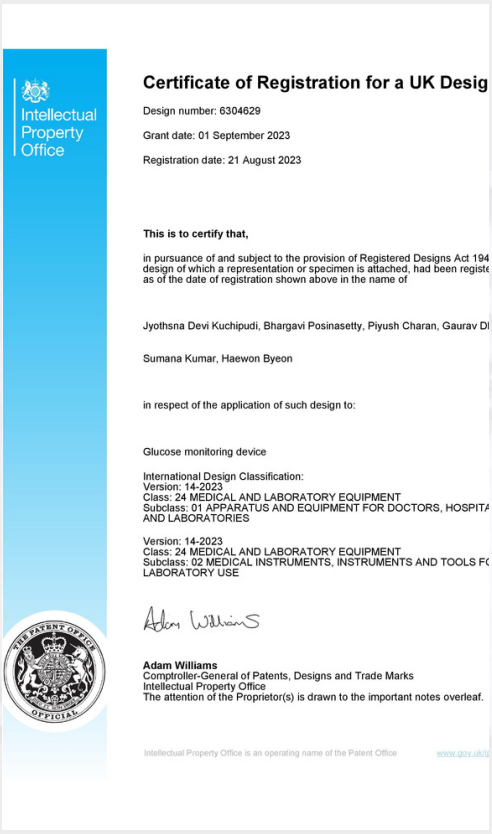
डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि / Date of Issue : 30/08/2023

महानियंत्रक पेटेंट-डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो), जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.


Intellectual Property Office

**Certificate of Registration for a UK Desig**

Design number: 6304629

Grant date: 01 September 2023

Registration date: 21 August 2023

**This is to certify that,**

in pursuance of and subject to the provision of Registered Designs Act 194 design of which a representation or specimen is attached, had been registe as of the date of registration shown above in the name of

Jyothsna Devi Kuchipudi, Bhargavi Posinasetty, Piyush Charan, Gaurav D

Sumana Kumar, Haewon Byeon

in respect of the application of such design to:

Glucose monitoring device

International Design Classification:
Version: 14-2023
Class: 24 MEDICAL AND LABORATORY EQUIPMENT
Subclass: 01 APPARATUS AND EQUIPMENT FOR DOCTORS, HOSPITA AND LABORATORIES

Version: 14-2023
Class: 24 MEDICAL AND LABORATORY EQUIPMENT
Subclass: 02 MEDICAL INSTRUMENTS, INSTRUMENTS AND TOOLS FO LABORATORY USE

Adam Williams

**Adam Williams**
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Intellectual Property Office is an operating name of the Patent Office www.gov.uk/ip

## Design Grant (Indian and UK)

**Dr. Piyush Charan**, Associate Professor published two design grant patents one in India and the other in the UK, the details of which are as follows:

1. The design of “**Pen With Calculator**” was registered with The Patent Office, Government of India got accepted in Journal Number 35/2023 dated 01-09-2023 bearing the design number 390493-001.
2. “**Glucose Monitoring Device”** registered in the United Kingdom with design grant number: 6304629

# Research and Development

Publications

## Conference Publications

[1] S. Kumari, **Charu Pathak**, **Shruti Vashist** and P. K. Mahapatra, "**Contactless Measurement of Error in Lathe Tool Positioning**" 2023 3rd International Conference on Intelligent Technologies (CONIT), Hubli, India, 2023, pp. 1-6, doi: 10.1109/CONIT59222.2023.10205386.

[2] G. Sandhya, **Piyush Charan**, H. F. Ansari, M. N. Kathiravan, D. Suganthi, and N. Nishant, '**Integrating Technology for Sustainable Agriculture: Enhancing Crop Productivity while Minimising Pesticide Usage using Image Processing & IoT**', in 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC), 2023, pp. 462–468. doi: 10.1109/ICESC57686.2023.10193238.

[3] R. P. Daund, D. Kumar, **Piyush Charan**, R. S. K. Ingilela, R. Rastogi, and Others, '**Intrusion Detection in Wireless Sensor Networks using Hybrid Deep Belief Networks and Harris Hawks Optimizer**', in 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC), 2023, pp. 1631–1636. doi: 10.1109/ICESC57686.2023.10193270.

[4] A. P. Yadav, S. K. Davuluri, **Piyush Charan**, I. Keshta, J. C. O. Gavilán, and G. Dhiman, '**Probabilistic Scheme for Intelligent Jammer Localization for Wireless Sensor Networks**', in International Conference on Intelligent Computing and Networking, 2023, pp. 453–463. doi: 10.1007/978-981-99-3177-4_33.

[5] M. A. Gandhi, K. Priya, **Piyush Charan**, R. Sharma, G. N. Rao, and D. Suganthi, '**Smart Electric Vehicle (EVs) Charging Network Management Using Bidirectional GRU-AM Approaches**', in 2023 2nd International Conference on Edge Computing and Applications (ICECAA), 2023, pp. 1509–1514. doi: 10.1109/ICECAA58104.2023.10212236.

## Journal Publications

Z. H. Khan, S. Kumar, D. Balodi, and **Piyush Charan**, '**A 120GHz Down Conversion Mixer Design for improved Linearity, High Conversion-Gain and Low Noise-Figure in 130nm CMOS Technology**', Journal of Theoretical and Applied Information Technology, vol. 101, no. 9, 2023. (Scopus Journal)

# Thank You

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