

# BUILDERS ENGINEERING COLLEGE



A NEWSLETTER OF

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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### DEPARTMENT - VISION & MISSION

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#### VISION

To be an updated technocrat in the field of Electronics and Communication Engineering.

#### MISSION

Preparing rural students for successful career through creative thinking and knowledge application

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COLLEGE VISION &  
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## **Vision of the Institution**

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To be the most preferred knowledge provider.

## **Mission of the Institution**

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Builders Engineering College endeavors to prepare rural students for successful career through academic and applied research.

## **About the Department**

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Established in 2009, the Department commenced with an initial intake of 60 students. It boasts 10 fully-equipped laboratories, each adhering to university norms and furnished with cutting-edge technology.

The ECE Computer Centre provides students access to special software packages such as MENTOR GRAPHICS, PSPICE, MATLAB, Xilinx ISE, MULTISIM, MODELSIM, and KIEL.

The department stands out with its distinctive offerings, including advanced trainer kits, ARM Processors, Altera development boards, CPLD Trainer kits, and Wireless Sensor Networks trainer kits. These resources empower students to engage in real-time projects and practical learning experiences.

The department actively engages with professional bodies such as IEEE, IETE, and ISTE, providing a valuable platform for both faculty members and students.

## **Programme Specific Outcomes (PSOs)**

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- To design and develop complex systems in the research areas of next generation Communication Systems, RF and Power systems.
- To design and develop systems in the domains of IoT based Embedded Systems, Advanced Signal and Image Processing and latest Semiconductor technologies.

## **Program Educational Objectives (PEOs)**

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- Shall be successful in their professional careers, academic pursuits and research
- Shall study and build abilities on a continual basis in order to deliver high-impact, energy-efficient and futuristic solutions
- Shall demonstrate strong communication skills, a professional mindset and ethics in order to create and build real-world multidisciplinary solutions that are technically sound, economically feasible, and socially acceptable.







## Principal's Message

It is with immense joy and pride that I extend my congratulations on the release of the Department of Electronics and Communication Engineering Newsletter. This newsletter stands as a testament to the tremendous progress made in various realms, encompassing both academic and non-academic spheres, as well as the continuous development of capacities relevant to our esteemed staff and students. I express my heartfelt gratitude to Dr. S. Kumar, HoD/ECE for providing valuable guidance and leadership throughout the process of creating this technical masterpiece.

I extend my warmest congratulations to the dedicated staff members and enthusiastic students who have invested their time and effort into making this newsletter a reality. Your collective contributions have undeniably played a pivotal role in the success of this publication.

With best wishes for continued success in all our future endeavours.

**Dr. S. Gopalakrishnan**

Principal

## Words from Head of the Department

Dear Respected Members of the ECE Department,

I take immense pride and joy in extending my warm greetings to each one of you through the medium of our Electronics and Communication Engineering (ECE) Newsletter.

My heartfelt appreciation goes to the devoted Editorial Board, whose commitment and diligence have brought this newsletter to fruition. Your relentless efforts in ensuring efficiency and timely delivery are truly praiseworthy.

I extend a special note of gratitude to all the faculty members, staff, and students whose valuable time and expertise have contributed to the success of this newsletter. Your evident passion for excellence plays a pivotal role in shaping the positive trajectory of our department.

Thank you all for your unwavering commitment and hard work. Cheers to a brighter future for the ECE Department!

**Dr. S. Kumar**

Head of the Department



# Editor's Desk

Dear Readers,

Welcome to the latest edition of our Electronics and Communication Department Newsletter! As we navigate the dynamic and ever-evolving world of technology, we are thrilled to share with you the latest developments, achievements, and exciting projects from our department.

We are proud to highlight the accomplishments of our students and faculty, who continue to push the boundaries of knowledge and contribute to advancements in the field.

Our commitment to fostering a collaborative and forward-thinking community is evident in the various events and activities featured in this newsletter. From guest lectures by industry experts to workshops and hackathons, we strive to provide our students with opportunities to engage with real-world challenges and enhance their skills.

As we embark on another semester filled with promise and potential, we extend our gratitude to our dedicated faculty, enthusiastic students, and supportive community. Together, we are shaping the future of electronics and communication, and we are excited to have you join us on this journey.

Thank you for your continued interest and support. We hope you enjoy reading this edition of our newsletter and stay tuned for more updates from the Electronics and Communication Department.

Best regards,

**Mr. U. Rajasekaran, AP/ECE**  
Managing Editor

## Editorial Team

### Editor in Chief:

Dr. S. Kumar, HoD/ECE

### Managing Editor:

Mr. U. Rajasekaran, AP/ECE

### Concept & Design:

Ms. V. Manimala, AP/ECE

### Student-Chief Editor:

Mr. S.P. Deva Raja, IV Year

### Associate Editors:

Ms. S. Anjana, IV Year

Ms. S. Dhivya Sri, III Year



# PROGRAMMES ORGANISED

**BUILDERS ENGINEERING COLLEGE**  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  
(No. 02/2002/2008 Certified Institution, Autonomous and B.T. Grade by MAEC)  
Nuthakudiya, Kuppam, Tirupur - 638 108, Tamilnadu  
P : 04257-241935, 241944 | F : 04257-241985 | W : www.builderscollege.edu.in

**Department of Electronics and Communication Engineering**  
The Management, Principal, Head, Faculty Members, Staff and Students cordially invite you for

**How to Crack IBPS Exam**  
Mr.S.D Vijayakumar AP/ECE  
Builders Engineering College,  
Kuppam

**74.01.2020 | 02.00 PM | Venue : DC Hall**

*In the presence of*

Thiru. V Sathyanmoorthy Chairman  
Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer

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**Department of Electronics and Communication Engineering**  
The Management, Principal, Head, Faculty Members, Staff and Students cordially invite you for

**Intra Departmental Symposium**  
**GNAANA-2020**

**14<sup>th</sup> Mar 2020 | 02.00 PM | Venue : DC Hall**

*In the presence of*

Thiru. V Sathyanmoorthy Chairman  
Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer

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**Department of Electronics and Communication Engineering**  
The Management, Principal, Head, Faculty Members, Staff and Students cordially invite you for

**Introduce on to Neural Networks**  
Mrs.G.Soundarya AP/ECE,  
Builders Engineering College,  
Kuppam

**08.02.2020 | 02.00 PM | Venue : DC Hall**

*In the presence of*

Thiru. V Sathyanmoorthy Chairman  
Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer

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**Department of Electronics and Communication Engineering**  
The Management, Principal, Head, Faculty Members, Staff and Students cordially invite you for

**Guest Lecture on "Global Startup Programs"**  
**Mr. Kalirajan Panjalingam (a) Rajan**  
Founder & Senior Software Architect, iGenius Technologies, Malaysia

**04.03.2020 | 02.00 PM | Venue : DC Hall**

*In the presence of*

Thiru. V Sathyanmoorthy Chairman  
Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer



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**Department of Electronics and Communication Engineering**  
The Management, Principal, Head, Faculty Members, Staff and Students cordially invite you for

**Guest Lecture on "ODOO ERP"**  
Ms. Indhu Santha kumar,  
Training Head,  
PPTS Pvt. Ltd,  
Coimbatore.

**27.02.2020 | 02.00 PM | Venue : DC Hall**

*In the presence of*

Thiru. V Sathyanmoorthy Chairman  
Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer

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*In the presence of*

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Thiru. R. P. Selvasundaram Vice Chairman  
Thiru. P. Balasivakumar Secretary & Correspondent  
Thiru. R. Eswaramoorthi Treasurer

# STUDENTS PARTICIPATION

- Builders Engineering College organized a seminar on Digital Marketing on March 11, 2020. R. Revathi, a student, played an active role in participating and contributing to the event.
- On January 25, 2020, V. Manibalan actively participated in a Quiz Competition organized in celebration of National Voters Day.
- On February 10, 2020, V. Manibalan and K. Venkatramanan participated in a Quiz at Jai Shriram Engineering College.
- On March 13, 2020, K. B. Kaviyarasu took part in a Debugging event at V.S.B Engineering College.
- T. Indhumathi attended a Workshop on Debugging at V.S.B Engineering College.
- K. B. Kaviyarasu participated in a Non-technical event at VSB Engineering College.
- On March 14, 2020, J. Yogashree showcased her solo singing skills at Panchamithra 2020 at P.A. Engineering College.
- On May 30, 2020, J. Priyadharshini participated in a Quiz at Mohamed Sathak A J College.





# STUDENT ACHIEVEMENT

## Mr. K. Venkatramanan Department of ECE



- On February 22, 2020, K. Venkatramanan presented an outstanding paper at the Henosis 2K20 event with the theme "Evolution of Technology," organized by Dr. N.G.P. Institute of Technology. His exceptional knowledge and presentation skills earned him the second prize, showcasing a deep understanding of technological advancements and the evolving landscape of technology.
- On October 2, 2020, Venkatramanan clinched the first position in a quiz competition at SIRA2020, hosted by Jai Shriram Engineering College.
- On March 13, 2020, K. B. Kaviyarasu excelled in a non-technical event called TRYONIX'20 at V.S.B Engineering College, securing the first position. These achievements highlight the talent and versatility of Venkatramanan and Kaviyarasu, underscoring their ability to succeed across both technical and non-technical domains, contributing significantly to their academic and personal growth.

# FACULTY PARTICIPATION

- Mrs. G. Vijayakumari "Advanced ATM Theft Control System" 9 International Conference on Advanced Science and Engineering Research – 2020 (ASER – 2020).
- Mr. M. Prakash "Early Detection of Melanoma Skin Cancer Using Hybrid Classifier" 7 National Conference on Emerging Trends in Engineering and Technology 2020.
- Mr. M. Prakash "Early Detection of Melanoma Skin Cancer Using Hybrid Classifier" 9 International Conference on Advanced Science and Engineering Research – 2020 (ASER – 2020)
- Mr. S. D. Vijayakumar "Secure and Efficient Routing for Malicious Node Detection and Prevention in MANET" 9 International Conference on Advanced Science and Engineering Research – 2020 (ASER – 2020).
- Mr. V. Kumar "Automatic Monitoring and Controlling of Water Supply Based on TDS Value" 7 National Conference on Emerging Trends in Engineering and Technology 2020
- Mr. V. Kumar "Automatic Monitoring and Controlling of Water Supply From Source Water to Storage Tank Based on Water TDS Value Using IoT" 9 International Conference on Advanced Science and Engineering Research – 2020 (ASER – 2020)



## PAPERS PUBLISHED

- Mr. N. Agilan, Ms. J. Dhivya, Ms. N. Haripriya, Mrs.G.Vijayakumari"Advanced ATM Theft Control System" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 172-176 (ISSN 2455 – 9288)
- Ms.G.Priyadarshini, Mr.G.Rathna Kumar, Ms.T.Vasanth Lakshmi, Mr.M.Prakash "Early Detecton of Melanoma Skin Cancer Using Hybrid Classifier" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 251-255 (ISSN 2455 – 9288)
- Mr. R. Praveen Kumar, Ms. G. Jeevadarani, Mr. S. MohanaSundaram, Mr. C. V. BojaRajan "Under Ground Water Pipeline Management and Leakage Locator" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 622-625 (ISSN 2455 – 9288)
- Mr.E.SarronYazhini, Ms.B.Varsha, Mr.S.Vignesh, Mr.S.D.Vijayakumar"Secure and Efficient Routing for Malicious Node Detection and Prevention in MANET" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 177-180 (ISSN 2455 – 9288)
- Ms.K.K.Apurvha, Ms.T.Dhivyabharathy, Mr.M.Kevinirudiyaraj, Mr.S.Mahendran "Effective Management of Food Wastage System Using IoT" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 150-153 (ISSN 2455 – 9288)
- Mr.S.Mahendran, Mr.S.Ajith, Mr.S.P.Deva Raja "Smart Grid Energy Management System" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 584-587 (ISSN 2455 – 9288)
- Ms.C.Savitha, Ms.V.Vasuki, Mr.R.Yogesh, Mr.T.Velmurugan "Web Server Based Turmeric Plant Leaf Disease Identification Using Support Vector Machine Classifier Technique" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 237-244 (ISSN 2455 – 9288)
- Ms.A.Dharanya, Ms.S.Indhu, Mr.R.Ponvivek, Mr.U.Rajasekaran "Real Time Implementation of Automatic Irrigation System with Solar Energy Operated Motor Using GSM" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 141-144 (ISSN 2455 – 9288)
- Ms.K.S.Abitha, Mr.P.Suresh Kumar, Mr.P.Deepakkumar, Mr.V.Kumar "Automatic Monitoring and Controlling of Water Supply From Source Water to Storage Tank Based on Water TDS Value Using IoT" International Journal of Advanced Science and Engineering Research (IJASER), Volume No. 05, Issue No. 01, 2020 Page No. 580-583 (ISSN 2455 – 9288)




# FACULTY PARTICIPATION

Date	Name of the Faculty	Title	Institution
06.05.2020	Mr. S.D. Vijayakumar	IIC Webinar Series - Wlan & Security Concepts	Tamilnadu College of Engineering
21.05.2020		Research Scopes In Electronics And Communication Engineering.ar Series - Wlan & Security Concepts	Chennai Institute of Technology
25.05.2020		Electric Vehicle Design	Ramakrishna Institute Of Technology
26.05.2020		"Research Trends In Mitigation Of Voltage Sag And Swell Using Direct Convertors	CMS College of Engineering & Technology, Coimbatore
29.05.2020		Nano Degree In Machine Learning	Knowledge Pound
26.05.2020	Mr. S. Mahendran	"Research Trends In Mitigation Of Voltage Sag And Swell Using Direct Convertors	CMS College of Engineering & Technology, Coimbatore
29.05.2020		Nano Degree In Machine Learning	Knowledge Pound
06.05.2020	Mr. R. Praveenkumar	IIC Webinar Series - Wlan & Security Concepts	Tamilnadu College of Engineering
21.05.2020		Research Scopes In Electronics And Communication Engineering.ar Series - Wlan & Security Concepts	Chennai Institute of Technology
25.05.2020		Electric Vehicle Design	Ramakrishna Institute Of Technology
26.05.2020		"Research Trends In Mitigation Of Voltage Sag And Swell Using Direct Convertors	CMS College of Engineering & Technology, Coimbatore
28.03.20	Ms. G. Vijayakumari	International Conference On Aser 2020	Al Ameen Engineering College
19.05.20		Quiz On Programmable Logic Controller	Paavai Engg College
21.05.2020		Online Workshop On Research Scopes On Electronics And Communication Engineering	Chennai Institute Of Technology
30.05.2020	Mr. M. Shanmugam	Building An Iot Cloud For Health Care Applications.	Pantech Solutions
30.05.2020		Deep Learning With Neural Network.	Pantech Solutions
19.05.2020	Mr. T. Velmurugan	Quiz On Programmable Logic Controllers	Paavai Engineering College
03.05.2020	Mr. M. Prakash	Digital Marketing	Adithya Institute of Tech.
04.05.2020		Job Skills To Succeed In A Post Pandemic World	ICTACT - Sky Campus
04.05.2020		The Power of a Teacher	ICTACT - Sky Campus
09.05.2020		Power System Distribution With Latest Technology	Easwari Engineering College

Date	Name of the Faculty	Title	Institution
04.05.2020	Ms. V. Manimala	Geometry Modelling In Hfss	Entuple Technologies, Bangalore
18.05.2020		3d EM Simulation Involving CST Studio Suite Software	Sri Venkateswara College of Engineering, Chennai
23.05.2020		Design Of Microwave Filter Using Hfss	Entuple Technologies, Bangalore

## NPTEL CERTIFICATIONS

Name of the Faculty	Title of the Paper	Certificate
Ms. V. Manimala	Microwave Integrated Circuits	

## STUDENTS CORNER

### Commercial Space Exploration

by *Ms. C. Hemanandhini, II ECE*

In recent years, the landscape of space exploration has undergone a profound transformation with the active involvement of private companies. SpaceX, founded by Elon Musk, and Blue Origin, led by Jeff Bezos, are at the forefront of this commercial space revolution. This article explores the ambitious projects undertaken by these companies, ranging from commercial space tourism to lunar exploration and the eventual goal of missions to Mars.



SpaceX: Revolutionizing Space Transportation

#### Reusable Rocket Technology:

SpaceX has pioneered the development of reusable rocket technology, significantly reducing the cost of launching payloads into space. The Falcon 9 rocket and Falcon Heavy, both featuring reusable first stages, have become workhorses for delivering satellites, cargo, and even crewed missions to the International Space Station (ISS).

#### Crewed Spaceflights:

In collaboration with NASA, SpaceX has successfully launched crewed missions to the ISS using the Crew Dragon spacecraft. This marks a historic shift, as private companies are now playing a crucial role in human spaceflight.

#### Starship Project:

SpaceX's Starship is an ambitious project aimed at developing a fully reusable spacecraft capable of carrying both crew and cargo on a variety of missions. Elon Musk envisions Starship as the key to enabling human exploration and colonization of Mars.



**Commercial Space Tourism:**

SpaceX is venturing into commercial space tourism, with plans to take private individuals on orbital and lunar missions. The dearMoon project, backed by Japanese entrepreneur Yusaku Maezawa, aims to take artists and creators on a journey around the Moon aboard Starship.

**Blue Origin: Advancing Suborbital and Beyond****New Shepard Suborbital Rocket:**

Blue Origin's New Shepard suborbital rocket is designed to take tourists on brief journeys to the edge of space. The vehicle features a reusable rocket and capsule, allowing passengers to experience a few minutes of weightlessness and see the curvature of the Earth.

**New Glenn Orbital Rocket:**

Blue Origin is developing the New Glenn orbital rocket, intended for a range of missions, including deploying satellites and potentially carrying humans into space. New Glenn is designed to be a powerful and reusable launch vehicle.

**Lunar Exploration:**

Blue Origin is actively involved in NASA's Artemis program, contributing to the development of the Human Landing System (HLS). The HLS aims to land astronauts on the lunar surface and establish a sustainable human presence on the Moon.

**Commercial Space Tourism: A Growing Industry**

Beyond SpaceX and Blue Origin, other companies are entering the commercial space tourism sector:

**Virgin Galactic:**

Virgin Galactic, founded by Sir Richard Branson, is pioneering suborbital space tourism with its spaceplane, VSS Unity. The company aims to offer suborbital flights to space tourists, providing a unique and immersive experience.

**Axiom Space:**

Axiom Space plans to build and operate the world's first commercial space station. In addition to hosting professional astronauts, Axiom aims to offer commercial opportunities for private individuals to visit the space station.

**Challenges and Opportunities**

While the involvement of private companies brings innovation and competition to the space industry, it also raises challenges:

**Regulatory Framework:**

Establishing clear regulatory frameworks for commercial space activities to ensure safety, environmental responsibility, and compliance with international agreements.

**Space Traffic Management:**

Developing effective space traffic management systems to avoid collisions and ensure the sustainability of space activities.

**Cost and Accessibility:**

Addressing the cost of space travel to make it more accessible to a broader range of individuals and businesses.

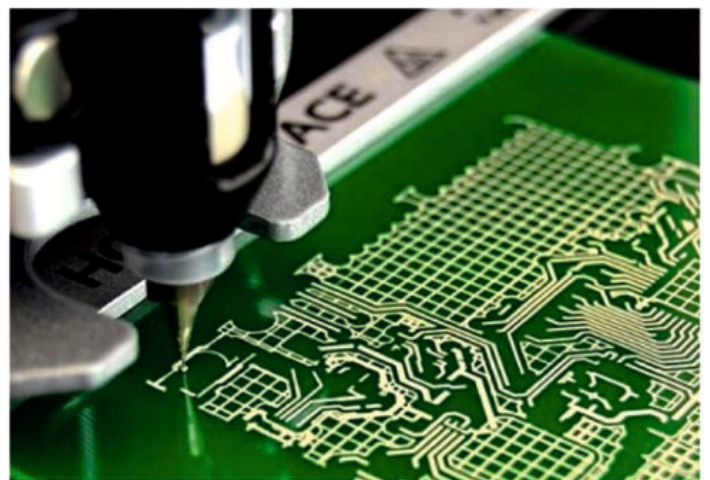
**Conclusion**

Commercial space exploration is no longer confined to the realm of government agencies. Companies like SpaceX and Blue Origin are pushing the boundaries of what is possible, from launching satellites and delivering cargo to the ISS to paving the way for commercial space tourism and ambitious missions to the Moon and Mars. As private ventures continue to collaborate with governmental space agencies and compete with each other, the commercialization of space is becoming a reality, opening up new possibilities and opportunities for humanity beyond our home planet.

**3D Printing**

by *Ms. A. Sridhar, III ECE*

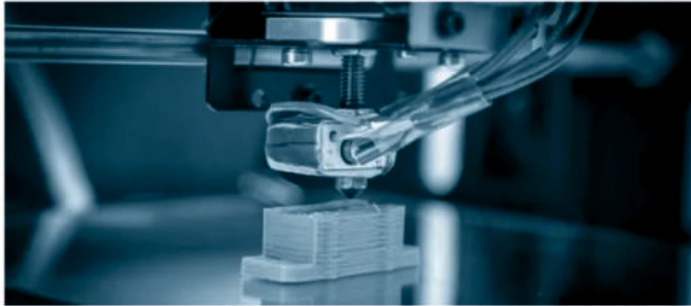
3D printing technology has revolutionized various fields, including Electrical and Electronics Engineering, offering novel solutions and opportunities for innovation. Here are some key aspects and applications of 3D printing in Electrical and Electronics Engineering





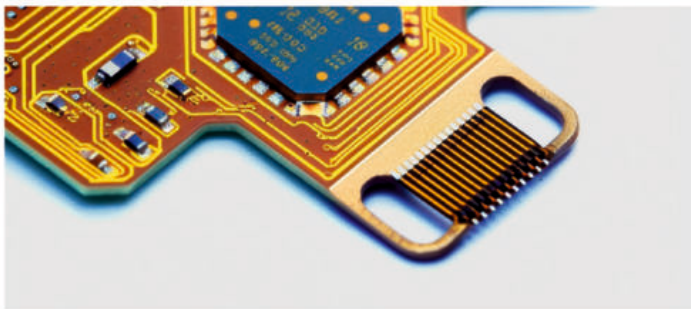
### Prototyping and Rapid Iteration:

3D printing enables engineers to quickly create prototypes of electronic components, circuit enclosures, and housing designs. This rapid prototyping capability allows for faster iteration and refinement of designs, leading to shorter development cycles and reduced time to market for new electronic products.



### Customized Components:

With 3D printing, engineers can design and manufacture custom electronic components tailored to specific requirements. This customization extends to complex geometries, intricate shapes, and precise dimensions, which may be challenging or impossible to achieve using traditional manufacturing methods.



### Printed Circuit Boards (PCBs):

Advances in 3D printing technology have led to the development of techniques for printing conductive traces and insulating layers directly onto substrates, enabling the fabrication of functional PCBs. This approach simplifies the prototyping process and facilitates the creation of bespoke circuit designs.

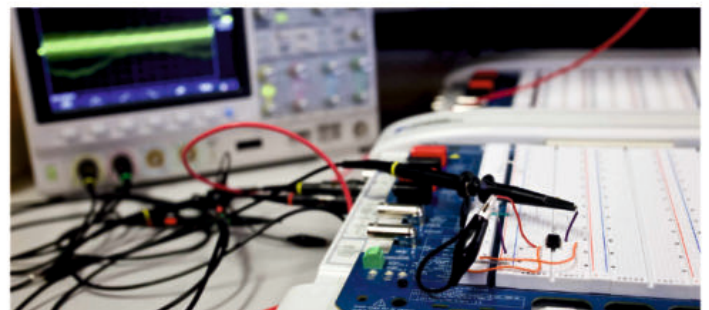


### Embedded Electronics:

3D printing allows for the integration of electronic components directly into printed structures. This capability opens up new possibilities for embedding sensors, actuators, and other electronic devices within complex mechanical assemblies, enabling the creation of smart and interconnected systems.

### Electromechanical Systems:

3D printing enables the fabrication of electromechanical systems and devices in a single manufacturing step. This integration of mechanical and electronic components can lead to more compact, lightweight, and efficient designs for applications such as robotics, mechatronics, and wearable technology.



### Educational and Research Applications:

3D printing provides a valuable tool for hands-on learning and research in Electrical and Electronics Engineering. Students and researchers can use 3D printers to fabricate prototypes, explore design concepts, and experiment with novel electronic architectures and configurations.

### Sustainable Manufacturing:

3D printing offers the potential for more sustainable manufacturing practices in Electrical and Electronics Engineering. By enabling on-demand production, minimizing material waste, and optimizing resource utilization, 3D printing can contribute to reducing the environmental impact of electronic device manufacturing.

Overall, 3D printing technology has emerged as a transformative tool in Electrical and Electronics Engineering, offering unparalleled flexibility, customization, and efficiency in the design, prototyping, and manufacturing of electronic components and systems. As 3D printing continues to evolve, its impact on the field is likely to expand, driving innovation and shaping the future of electronic design and production.