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GLA UNIVERSITY MATHURA
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Monthly Updates

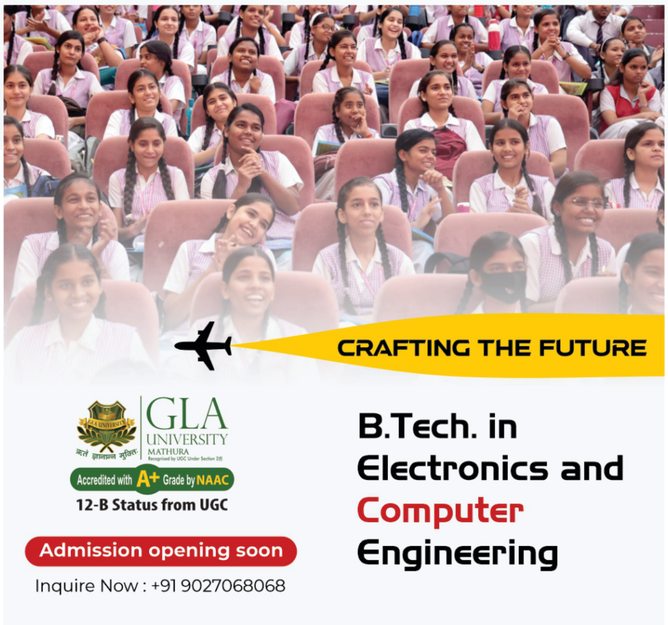
The Bulletin

A Newsletter from
Electronics & Communication Engineering Department.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Monthly Newsletter - December, 2023

RESEARCH | INNOVATION | NEW IDEAS | PLACEMENTS | GOALS | EVENTS | WORKSHOPS



Introducing Our Advanced B.Tech. Course in Electronics and Computer Engineering.

We are pleased to offer an advanced B.Tech. Course in Electronics and Computer Engineering at GLA University , Mathura. This program is designed in syncrhonisation with recent technology advancement and job opportunities. Electronics and Computer Engineering is the integration of Electronics Engineering and Computer Science to develop computer systems. This program is unique example of interdisciplinary education that empower the new minds for their carrier goals by solving the future problems, and developing products & systems.

The Electronics and Computer Engineering comprises not only the software aspect of computations but also includes the electronics engineering for example digital engineering, embedded systems and micro-controller design operation. Combining these two engineering showcase a path to understand the complete process of writing a software program to the communicating with the hardware. Knowledge of combining a hardware with a software, enables you as an engineer who can write the software programs to communicate and control with desired hardware.The inter-displinary course of Electronics and Computer engineering will prepare you as a multi-skilled professional Engineer with a deep understanding of present and future digital era.

This course not limit your career with the boundary of traditional engineering but gives you a platform to integrate digital electronics, advanced programming and artificial intelligence. The Atm-Nirbhar Bharat is solely looking for future Electronics and Computer Engineers those can build secure and safe Digital India and software based advanced electronic equipment for the betterment of society.

Course Coordinator :
Dr. Manish Kumar
Associate Professor, ECE

Course Co-coordinator :
Mr. Dheeraj Kalra
Assistant Professor, ECE

HAPPY PLACEMENTS

RESHAPING THE FUTURE: THE FUTURISTIC APPLICATIONS OF RESISTIVE MEMORY

News Article By :
Dr. Ajit Debnath
Assistant Professor, ECE

As technology continues to advance at an unprecedented pace, resistive memory, with its unique characteristics, emerges as a key player in shaping the future of computing. Also known as Resistive Random-Access Memory (ReRAM), this innovative technology holds the potential for ground-breaking applications that could redefine the way we store, process, and access information.

Quantum Computing Enhancements: In the realm of quantum computing, where the manipulation of quantum bits (qubits) is paramount, resistive memory could play a transformative role. The ability of ReRAM to retain its state even without power makes it a suitable candidate for storing the complex quantum states that form the basis of quantum computation. This futuristic application may contribute to the development of more stable and scalable quantum computers, unlocking unprecedented processing power for solving complex problems in fields such as cryptography, optimization, and materials science.

Edge Computing for Smart Cities: As the world becomes increasingly interconnected through the Internet of Things (IoT), the demand for efficient edge computing solutions rises. Resistive memory's low power consumption and high-speed data access make it well-suited for edge devices in smart cities. Future urban landscapes could benefit from the deployment of resistive memory in sensors, enabling real-time data processing at the edge. This application could enhance the responsiveness and intelligence of urban infrastructure, ranging from traffic management to environmental monitoring.

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Bioelectronics Medicine and Neural Interfaces: In the realm of healthcare, resistive memory holds promise for futuristic applications in bioelectronics medicine and neural interfaces. Its ability to mimic synaptic plasticity, the ability of neural connections to strengthen or weaken over time, makes it suitable for creating brain-machine interfaces that can adapt to the changing needs of patients. Resistive memory could be integrated into neuro-prosthetic devices, allowing for more natural and adaptive interactions between electronic implants and the human nervous system.

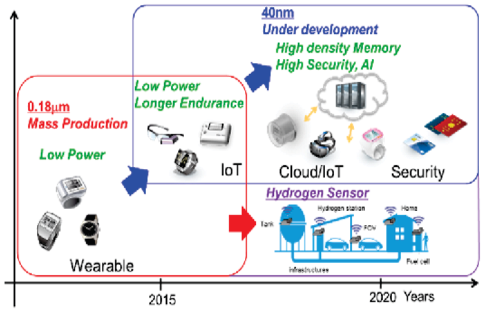
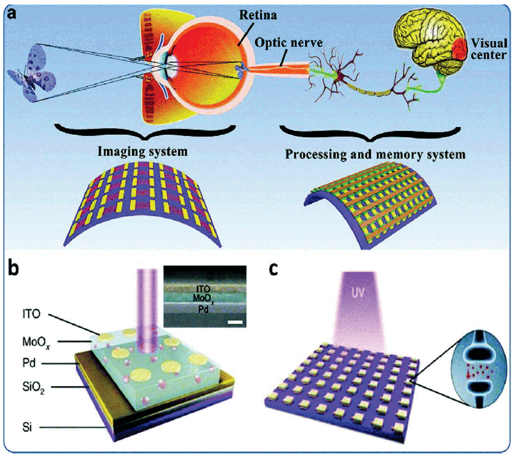


Fig.1. Panasonic ReRAM development and its applications.

Energy-Efficient AI Accelerators: Resistive memory's non-volatile nature and high-speed operation make it an ideal candidate for use in energy-efficient artificial intelligence (AI) accelerators. As AI applications become more prevalent, the demand for hardware that balances performance and energy efficiency grows. Resistive memory could serve as a foundation for neuromorphic computing and AI accelerators, enabling faster and more energy-efficient training and inference processes.



Sustainable Data Centres: In the era of big data, data centres are central to the digital infrastructure. Resistive memory's potential for high-density storage and reduced power consumption could contribute to the development of sustainable data centres. By minimizing the energy footprint of memory storage and improving overall efficiency, resistive memory could help address the environmental challenges associated with the exponential growth of data storage and processing.

In conclusion, the futuristic applications of resistive memory span diverse fields, from quantum computing to healthcare and sustainable technologies. As research and development in resistive memory technologies progress, we can anticipate a future where this innovative memory technology becomes an integral part of the technological landscape, driving advancements and pushing the boundaries of what is possible in computing and data storage.

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