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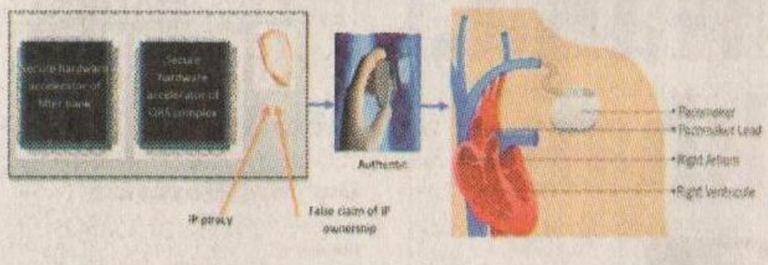
INNOVATIVE TECHNOLOGY| Receives patent from Indian Patent Office

Heartbeat of Innovation: Safer ECG devices developed at IIT Indore

Our Staff Reporter
INDORE

IIT Indore has developed a groundbreaking technology that promises to enhance the safety and reliability of electrocardiogram (ECG) devices and cardiac pacemakers. This innovative technology, which has received a patent from the Indian Patent Office, focuses on the fields of VLSI semiconductors and biomedical engineering.

The research findings have been published in the prestigious journal 'Nature Scientific Reports'. A team at IIT Indore, led by principal investigator Prof Anirban Sengupta and including PhD student Aditya Anshul has achieved this feat.



The new technology developed by the team at IIT Indore is designed to create safe and secure chips for these ECG devices and pacemakers. It includes a crucial feature that distinguishes between genuine and counterfeit ECG detector chips before they are manufactured or integrated into devices.

This capability is vital for ensuring the reliability of ECG devices and cardiac pacemakers, minimising the risks of misdiagnosis and errors that can lead to inadequate treatment. Currently, many ECG devices and pacemakers encounter reliability challenges, which can sometimes lead to errors in medical diagnoses that may go unnoticed, potentially affecting patient outcomes.

Prof. Suhas Joshi, director, IIT Indore said "Nowadays accurate detection of cardiovascular diseases and conditions is more critical than ever. ECG devices, which are fundamental for monitoring heart conditions, function by capturing the heart's electrical signals through electrodes. These signals are then interpreted by healthcare professionals to evaluate heart health. Additionally, ECG detectors are integral components of cardiac pacemakers, which help regulate heart rhythms in patients. Hence, reliability of ECG readings is vital."

Prof. Sengupta said "This technology not only secures the chips used in ECG devices but also guarantees that these devices contain authentic chips marked with a unique fingerprint hallmark.

Such innovations can revolutionise the medical sector by enabling the development of secure and trustworthy ECG devices. Advancements in technology hold the potential to transform cardiovascular health monitoring by delivering more reliable ECG devices and cardiac pacemakers.

The ultimate aim is to address existing limitations in the diagnostic process ensuring patients receive accurate and effective medical care while improving overall outcomes."