IIT-Indore gets patent for cost-effective power devices

Indore: The Indian Institute of Technology (IIT), Indore has received two patents for cost-effective power devices for next-generation electric vehicles and 5G/6G communication and a fingerprint acquisition system for anti-theft fingerprint biometry.

The institute said the recently patented fabrication technique will revolutionize the domain of High Electron Mobility Transistor (HEMTs) based power systems for next-generation electric vehicles, 5G/6G communication and space technology and will give a further boost to India's Make in India initiative towards making the country self-reliant for power transistor technology.

The global market for HEMT is expected to reach $2.8 billion by 2026 by growing at a CAGR of 15.2 per cent from 2021 to 2026, the institute said.

One of the lead inventors of the technology Professor Shaibal Mukherjee, faculty, Department of Electrical Engineering of IIT Indore said, "With a growing market for electric vehicles (EVs), 5G/6G communication, and space missions in India, such an indigenous development

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in technology is promising to make India self-reliant for power transistor technology."

Co-inventors of this technology are Professor Abhinav Kranti and PhD students Md Arif Khan and Rohit Singh from the Department of Electrical Engineering of IIT Indore.

Researchers said in India, the Performance Linked Incentives by the government will catalyze electronic manufacturing and give a push to demand for high-performance semiconductor material while recent chip crunch has also led many electronic companies to expand their manufacturing capabilities.

The patent granted for "A method of fabricating high two-dimensional electron gas density yielding Zinc Oxide heterostructure" by the Patent Office, Government of India is currently under "Tech Marketing Phase" of the commercialization process.

Another patent granted to IIT-I is on "A fingerprint acquisition system for anti-theft Fingerprint biometry and method thereof". The inventors of this method are Dr Amit Chatterjee and Professor Vimal Bhatia from IIT Indore and Professor Shashi Prakash from IET DAVV. Professor Vimal Bhatia from the department of Electrical Engineering at IIT-I said "A fingerprint pattern unique to each individual is registered in the storage device of the authentication system." TNN