

IIT-Indore develops low-cost metal 3D printing technology

Indore: In a development that could reduce healthcare costs for millions, the Indian Institute of Technology (IIT) Indore has developed a new metal 3D printing technology that makes the manufacturing of implants and other metal parts significantly cheaper.

The technology, called Micro-Plasma Metal Additive Manufacturing (MP-MAM), can produce high-quality metal components at a fraction of the cost of tradi-

Apart from healthcare, the technology is expected to boost sectors like aerospace, defence, and tooling, with advantages of lower electricity consumption, zero harmful gas emissions, and faster production cycles.

IIT Indore director Professor Suhas Joshi said, "This breakthrough reflects IIT Indore's commitment to innovation that benefits society and industry. MP-MAM positions India as a leader in advanced, eco-friendly metal 3D printing."

"This means cheaper implants, reduced pollution, and faster availability of critical metal parts — ultimately lightening the burden on ordinary people's pockets," said Prof. Jain.

"Our new technology cuts down on energy use and pollution while making it easier and cheaper to create complex metal parts. This means faster production, lower costs, and less harm to the environment. In future, we are planning to develop a digital twin of the process, preparing it for widespread commercial use in coatings, cladding, and aeronautical manufacturing," said Professor Jain. TNN

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tional methods. It works with a range of materials, from titanium alloys used in aircraft to special metals for medical implants and superalloys for heavy-duty tools.

Led by Professor Neelesh Kumar Jain, along with researchers Dr Mayur Sudhakar Sawant and Dr Pankaj Kumar, the team already secured an Indian patent and won IIT Indore's Best Technology Award. Officials said the innovation will directly benefit the common man by reducing the cost of medical implants, lowering treatment expenses, and making healthcare more affordable.