

High-Frequency X-Ray Power Source

Problem Statement: The X-ray units manufactured in India rely on imported components. Hence the process of manufacturing them ends up being an assembly process. Only selected manufacturers around the globe make the power source required for X-Ray units. The current project entails developing a power source from the conceptualisation to the testing phase and eventual preparation for production, thereby increasing X-ray power sources available in India. These X-ray power sources can also be leveraged for use in the industrial sector for electrostatic precipitators, as well as high-frequency arc generation. Industrial requirements for DC fast chargers with EVs can also be addressed with the development. The project's genesis is rooted in industry interactions and requirements provided by the medical equipment manufacturers in India.

Uniqueness of the Solution: The solution proposed by the team is one-of-its-kind with respect to a combination of high

voltage and high-frequency outputs. The multi-functional design can be easily customised and scaled for different industrial and defence applications. This solution can compete with the medical segment products manufactured by leading multinational companies like Spellman, X-Power, Siemens, and Philips.

Current Status of Technology: The current project is in the component and/or breadboard validation stage in the relevant environment.

Societal Impact: Developing a high-frequency X-ray power source can help provide effective solutions at a reasonable cost and aid in establishing medical facilities in the primary healthcare sector. The possibilities for customisation allows for providing solutions to varied sectors, especially pollution reduction, environment and clean energy, and transportation. The market potential for the technology is significant.



Patent(s): Under progress

Relevant Industries: Biomedical Engineering, Defence, Security, Manufacturing, Power Plants, Refineries, Medical Equipment Manufacturers.

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