Wireless Power Transfer to Running Electric Vehicles and Drone

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Illustration

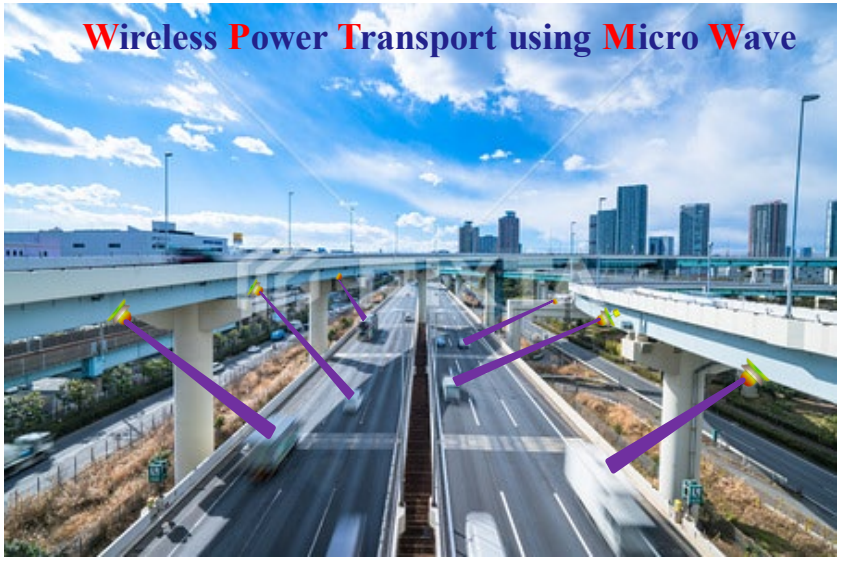

Fig. 1 Image of remote charging of running electric vehicle

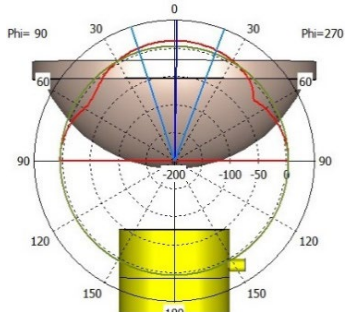

Fig. 2 Electromagnetic field analysis of transmitting antenna

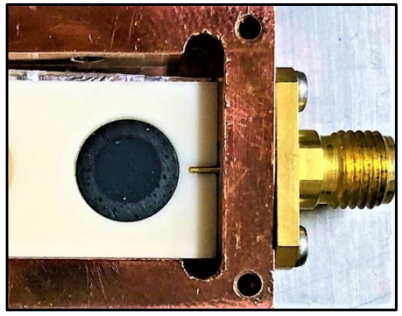

Fig. 3 Antenna using superconducting bulk resonator

Content:

This research is a basic research on wireless power transmission aiming at remote charging of running electric vehicles and drones (Fig. 1). In order to transmit a large amount of power with high efficiency to the power supply target, we are choosing to the microwave radiating wireless power transmission system, and we are conducting research on the most important transmission device in that system. Fig. 2 is an example of the electromagnetic field analysis result of the transmitting antenna, and the transmission efficiency can be estimated from the radiation characteristics of power. Fig. 3 is a photograph of a prototype device for a superconducting bulk resonator antenna, which emphasizes not only simulation but also experimental verification. We will continue to work on becoming the next-generation technology for the automobile industry that supports the Japanese economy.

Appealing point:

We will actively engage in industry-university collaboration regardless of the research content. My strengths are low temperature and superconducting physical properties, microwave device design, and precision measurement.

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