

Title : Wireless Power Transfer via Microwaves from Moving Vehicles**Speaker :** Tomohiko Mitani (Associate Professor, RISH Kyoto University)**Related RISH mission :** Mission 2 (Advanced Development of Science and Technology towards a Solar Energy Society)**Abstract :**

Our research group in RISH has been studying on wireless power transfer (WPT) via microwaves (frequency bands: 2.45 GHz or 5.8 GHz). In this type of WPT, electricity is converted into microwave (radiowave) power, transferred from the transmitting system to the receiving system wirelessly, and the microwave power is re-converted into electricity. The WPT via microwaves can transfer the power in long distances, unlike the inductive coupling WPT, which has been already used for wireless charging of mobile phones. It is suitable for long-range WPT applications, such as a space solar power satellite project and long-range terrestrial WPT systems.

One of the promising WPT applications will be the long-range WPT systems from moving vehicles as shown in Fig. 1. These WPT systems can be used as an urgent power supply in serious disaster situations like earthquakes, and as a detection system for the injured. Moreover, it can be used as a power delivery system to the sensors installed in a place, where people cannot approach, such as volcanos. In this seminar, our research activities, the WPT systems via microwaves from an airship or a drone are introduced.

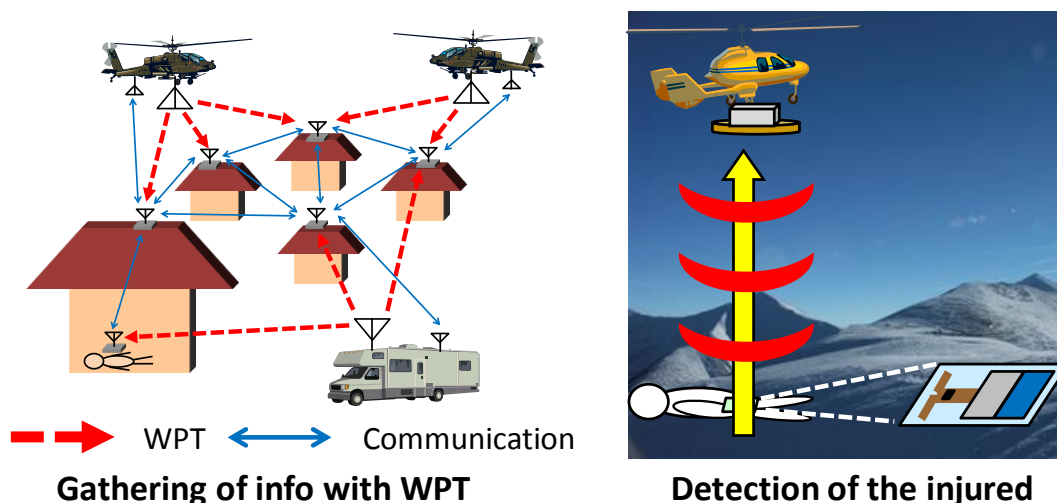


Fig. 1 Application examples of wireless power transfer via microwaves from moving vehicles: long-range wireless power transfer for emergency situations.