



USU Technology Highlight:

WIRELESSLY CHARGED ELECTRIC WHEELCHAIR

A novel technology for wireless charging of electric wheelchairs or other electric mobility devices has been developed by researchers at USU. The technology eliminates accessibility problems associated with traditionally charged wheelchairs, making it useful in both public locations and at home.

PROBLEM

Traditional charging of electric wheelchairs can be difficult for users who have limited range of motion and can require the additional help of a caregiver. The locations of electric outlets can also result in limited accessibility for traditional charging. Additionally, exposed connectors and power cords can pose safety hazards and reliability flaws.

SOLUTION

Wireless charging of electric wheelchairs is achieved through use of a wireless power transfer system consisting of a receiver and power regulator located on the wheelchair and charging modules mounted under the floor. The modules are physically separated from each other, but are functionally connected through smart communication and sensing functions. A built-in smart central monitoring system informs the user and a supervisory organization of any malfunctions, facilitating maintenance.

By implementing a wireless power transfer system for electric wheelchairs and other similar devices, end users who have limited range of motion can charge their device without relying on a caretaker. By recharging their wheelchair on their own, users become more independent and reduce caregiver expenses. The charging process is simplified and the charger more easily accessible than in traditional charging systems. The absence of exposed connectors and power cords contributes to the system's reliability and safety.

BENEFITS

This technology facilitates charging of wheelchairs and similar devices, and ensures maintenance and reliability of the device. Users of this technology will be able to recharge their own devices, increasing their independence.

APPLICATIONS

This technology is specifically beneficial in assisted living facilities, and for use in homes of EPMD users.

CONTACT

Questions about this technology including licensing availability can be directed to:

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DEVELOPMENT STAGE

TRL 3

PATENT STATUS

Patents applied for.

WEBSITE

[rgs.usu.edu/techtransfer/
resonant-switch-power-converter](https://rgs.usu.edu/techtransfer/resonant-switch-power-converter)

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