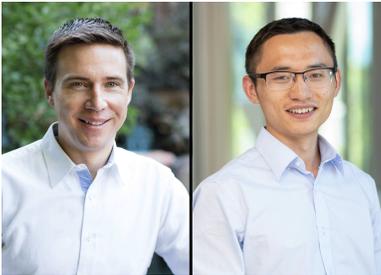


Electrical Engineering Faculty Granted Patent

10/04/2023

Utah State University Electrical Engineering faculty were awarded a new patent for their research in roadway electrification at ASPIRE.



ASPIRE Center Director Regan Zane and Assistant Professor Hongjie Wang created a method for transmitting wireless power dynamically with a power converter that converts three-phase power into regulated DC output current.

ASPIRE Center Director Regan Zane and Assistant Professor Hongjie Wang created a method for transmitting wireless power dynamically with a power converter that converts three-phase power into regulated DC output current and a configuration of connecting the inputs of multiple power transmitter modules in series. This creates a more stable and controllable flow of power for wireless power systems and ensures that wireless power is consistent and adaptable with reduced construction complexity.

The method was created to feed power to the inputs of hundreds of in-road wireless power charging transmitters more cost-effectively and efficiently on electrified roadways.

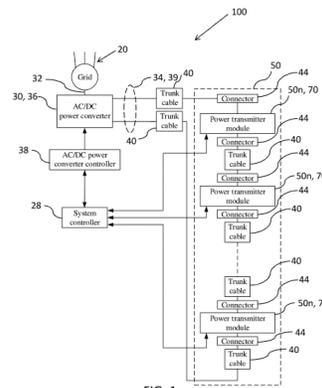


FIG. 1

A visualization of the method created by Zane and Wang in motion. This creates a more stable flow of power for wireless power systems and ensures that wireless power is consistent and adaptable.

“Having a patent issued in our name is a great achievement and the culmination of innovative and substantive work,” Wang said. “This will help us to continue to achieve great strides in roadway electrification and wireless charging.”

U.S. Patent No. 11,745,594, issued on Sept. 5, is one eight issued to the USU Office of Research in 2023. The ASPIRE NSF Engineering Research Center is dedicated to the widespread electrification of all vehicle classes, improved air quality and public infrastructure that provides an inexpensive, seamless charging experience. The patent on Zane and Wang’s intellectual property will ensure a quicker and more efficient way of achieving the center’s vision.

ASPIRE currently has three ongoing pilot projects in Utah, Florida and Michigan to test electrified roadways in the real world.

More information about ASPIRE’s research and vision can be found at aspire.usu.edu.

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