

# UTRC-REGION II NEWSWIRE

## UTRC Press Release

Wednesday, March 5, 2014

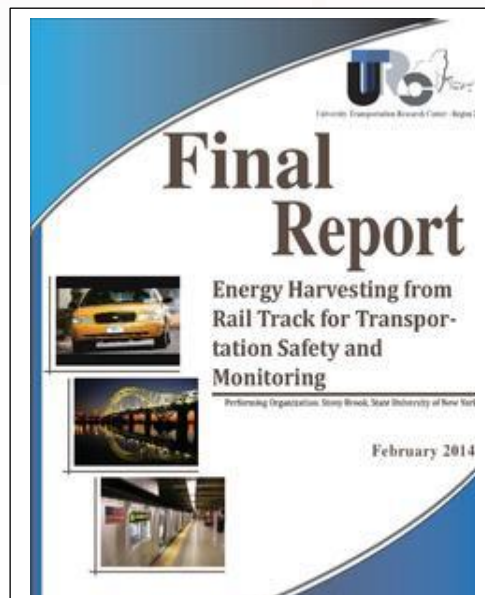
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### The University Transportation Research Center Publishes the Final Report for the Research Project Titled: "Energy Harvesting from Rail Track for Transportation Safety and Monitoring"

UTRC has released a final report for the research titled: "**Energy Harvesting from Rail Track for Transportation Safety and Monitoring**", funded by UTRC. The principal investigator was **Dr. Lei Zuo**, an associate professor of Mechanical Engineering at the Stony Brook University/SUNY.

*"An efficient electromagnetic energy harvester featured with mechanical motion rectifier (MMR) is designed to recover energy from the vibration-like railroad track deflections induced by passing trains. Comparing to typical existing vibration energy harvester technologies can only harvest sub-watts or milliwatts power applications, the proposed harvester is designed to power major track-side accessories and possibly make railroad independent from national grid. Trackside electrical infrastructures for safety and monitoring typically require a power supply of 10-100 Watts, such as warning signals, switches, and health monitoring systems. To achieve such a goal we implement the MMR, a patented motion conversion mechanism which transforms pulse-like bidirectional linear vibration into unidirectional rotational motion at a high efficiency. The single-shaft MMR design further improved our previously developed motion mechanism, increased energy harvester efficiency and expanded power harvesting potential."*

The full report is available for a free download at the UTRC website: <http://www.utrc2.org/publications/final-energy-harvesting-rail-track>



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## About The University Transportation Research Center

The University Transportation Research Center (UTRC) is a USDOT Regional Transportation Center addressing surface transportation operations, management, design economics and planning. The Region 2 University Transportation Research Center is one of ten original National Centers, established in 1987, in recognition that transportation plays a key role in the nation's economy and in the quality of people's lives. Located at the City University of New York, the Center is a Consortium of 17 major Academic Institutions in New York, New Jersey, and Puerto Rico. Through the Grant supporting the Center, the mission incorporates research, education and the transfer of technology in the field of transportation. Academically based, the work of Faculty and Students – graduate and undergraduate provide a critical link in resolving our national and regional transportation problems while training the future and current professionals who address our transportation system and their customers on a daily basis. For more information, visit [www.utrc2.org](http://www.utrc2.org).