

Wireless Energy Harvesting System for Real-Time Tire Pressure Monitoring System

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Description

Currently, there is no known technology to harvest energy specifically for tire pressure monitoring systems. On the other hand, few general energy harvesting technologies have been developed for converting a mechanical energy into an electrical energy. Of these technologies, a method to harvest motion/vibration energy is one of the most commonly used. However, this method is associated with potential limitations such as narrow operating frequency range, limited applications, and a low output power (in the range of mW/cm³). **This novel approach enables the development and use of a wireless electromagnetic energy harvesting system for tire pressure monitoring on a real-time basis.**

Value Proposition

The system:

- Generates a constant and steady power
- Generates a higher power density (~1 to 2 W/cm³) as compared to conventional techniques
- Supports power consumption for real-time data transmission
- Operates at a broader frequency range, making it suitable for diverse applications as compared to conventional techniques
- Comprises a magneto-static coupling between a high permeability coil and a hard magnet's array to harvest energy from a tire's rotational motion
- Overcomes the battery limitation of a tire pressure monitoring system
- Is additionally effective for providing power to multiple sensor networks and other electronic devices

Intellectual Property Status

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License Status

Available for license

