Patent Search

Invention Title	IOT ENERGY HARVESTING DEVICE: DESIGN AND IMPLEMENTATION STRATEGIES
Publication Number	19/2024
Publication Date	10/05/2024
Publication Type	INA
Application Number	202421030638
Application Filing Date	16/04/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMPUTER SCIENCE
Classification (IPC)	G06Q0050060000, H02J0050000000, G06Q0010060000, H02N0002180000, H04W0004700000

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Abstract:

The invention relates to a system and method to optimizing energy harvesting for Internet of Things (IoT) applications. By leveraging advanced energy harvesting mechanisms and adaptive control algorithms, the invention dynamically adjusts energy harvesting parameters based on real-time environmental conditions and energy demand profiles. This ensures optimal energy extraction efficiency and reliable power delivery to IoT nodes, minimizing reliance on conventional power sources and enhancing system autonomy. Key features include the integration of multiple energy harvesting technologies, robust power management systems, and seamless integration with IoT communication protocols. The invention offers a versatile and sustainable solution for powering IoT devices, promoting efficiency, reliability, and environmental sustainability in interconnected systems.

Complete Specification

Description:The embodiments of the present invention generally relates to the domain of energy harvesting devices tailored for applications within the Internet of Things (IoT). It addresses the critical need for sustainable power solutions to drive the autonomous operation of IoT nodes. By harnessing ambient energy sources such as solar, thermal, vibrational, and RF energies, the invention aims to optimize the efficiency and longevity of IoT deployments while minimizing reliance on conventional power sources. Through innovative design and implementation strategies, it seeks to advance the capabilities of energy harvesting technologies within the context of IoT, thereby contributing to the evolution of smart, interconnected systems with reduced environmental impact and increased autonomy

BACKGROUND OF THE INVENTION

The following description of related art is intended to provide background information pertaining to the field of the disclosure. This section may include certain aspects of the art that may be related to various features of the present disclosure. However, it should be appreciated that this section be used only to enhance the understanding of the reader with respect to the present disclosure, and not as admissions of prior art.

The Internet of Things (IoT) represents a significant shift in the way devices interact and communicate, offering unprecedented opportunities for automation, data exchange, and connectivity. Central to the realization of the IoT vision is the ability to power devices autonomously, without the constraints of traditional wired power sources or frequent battery replacements. Energy harvesting technologies have emerged as a promising solution to this challenge, enabling the extraction of energy from the surrounding environment and its conversion into electrical power.

View Application Status