

Abstract:

The project "Extraction of water from atmosphere using Peltier module and detection of a high-humid area using land rovers" aims to leverage the Internet of Things (IoT) technology to address the pressing issue of water scarcity. This innovative project combines the utilization of Peltier modules for water extraction from the atmosphere and the deployment of IoT-enabled land rovers for the detection of high-humidity regions. By integrating these technologies, the project envisions a sustainable solution for water resource management in areas with varying humidity levels. The IoT-based approach ensures real-time data collection, analysis, and decision-making, contributing to efficient water conservation and distribution strategies.

Problem Statement:

Water scarcity is a critical global concern, impacting both urban and rural communities. Many regions face challenges in sourcing adequate fresh water due to irregular rainfall patterns and inadequate water management systems. Moreover, identifying areas with high humidity levels, which could potentially serve as water sources, remains a complex task. This project aims to tackle these issues through the integration of IoT technologies. By extracting water from the atmosphere using Peltier modules and employing IoT-enabled land rovers to detect high-humid areas, the project seeks to provide a sustainable solution to water scarcity. After implementation, this project will offer a more reliable and efficient method of augmenting water supplies in regions facing water shortages.

Literature Survey:

Several studies have explored the potential of IoT in addressing environmental and water-related challenges. IoT-enabled sensors and devices have been utilized for remote monitoring, data collection, and analysis in various applications, including agriculture and environmental monitoring. Peltier modules have been investigated for their ability to generate condensation by cooling surfaces below dew point

temperatures. Additionally, the concept of using autonomous land rovers equipped with humidity sensors and GPS technology to map humid regions aligns with advancements in robotics and IoT. These existing research efforts lay the foundation for the integration of Peltier modules and IoT-enabled land rovers for water extraction and high-humidity area detection.

Problems Solved After Implementation:

Upon successful implementation, this project addresses several crucial problems related to water scarcity and resource management. Firstly, it offers an innovative method of water extraction from the atmosphere using Peltier modules, contributing to increased water availability in areas with low rainfall. Secondly, the deployment of IoT-enabled land rovers equipped with humidity sensors allows for accurate identification of high-humid regions, potentially unlocking untapped water sources. Ultimately, the project aims to alleviate the challenges associated with water scarcity by providing an IoT-based solution that enhances water conservation, distribution, and management strategies.