

# **Beehive solar intelligent temperature control system**





## Overview

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Can a self-powered smart beehive monitoring and control system improve honey productivity?

This paper proposes a Self-Powered Smart Beehive Monitoring and Control System (SBMaCS) using IoT to support remote follow-up and control, enhancing bee colonies' security and thus increasing the honey productivity.

What is a smart beehive system?

A Smart Beehive System using Internet of Things (IoT) technology would allow beekeepers to keep track of the amount of honey created in their hives and bee colonies even when they are far from their hives, through mobile phones, which would curtail the challenges currently faced by the beekeepers.

What is a smart beehive monitoring and control system (sbmacs)?

In this paper, we designed a Smart Beehive Monitoring and Control System (SBMaCS) with energy harvesting technologies for self-powering SBMaCS. The developed system allows beekeepers to easily monitor and control the various parameters in their beehives.

How does the Beehive monitoring system work?

Our technology uses sensors to track temperature, humidity, hive weight, and bee count inside beehives in order to overcome these challenges. Beekeepers can take proactive steps to preserve ideal circumstances by monitoring environmental data on a regular basis. The Beehive Monitoring System provides beekeepers remote accessibility.



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Intelligent solar-energy beehive based on automatic temperature control

The beneficial effects of the intelligent solar-energy beehive based on the automatic temperature control system are that the intelligent solar-energy beehive is reasonable in structure, has ...

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Smart Control of Temperature and Audio Monitoring ...

Oct 19, 2023 · In [4], a self-powered smart beehive monitoring and control system (SBMaCS) used different sensors to measure parameters inside and outside a beehive, such as ...

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Intelligent solar-energy beehive based on ...

The beneficial effects of the intelligent solar-energy beehive based on the automatic temperature control system are that the intelligent solar-energy ...

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Self-Powered Smart Beehive Monitoring and Control System (SBMaCS...

May 18, 2021 · This paper proposes a Self-Powered Smart Beehive Monitoring and Control System (SBMaCS) using IoT to support remote follow-up and control, enhancing bee colonies' ...

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Field experimental study on a novel beehive integrated with solar

May 1, 2020 · The system construction of the new solar beehive is shown in Fig. 1, which contains a standard beehive, a solar thermal collector, a solar photovoltaic panel, a connecting pipe ...

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Smart Beehive Monitoring System using IoT

Jul 27, 2024 · Bees are the main source of pollinators for various wild plant species and is the only source of honey production. Beehive management frequently faces challenges such ...

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Smart Control of Temperature and Audio ...

Sep 21, 2023 · In this study, a prototype of a smart control system for temperature management in cold weather and audio monitoring inside a ...

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Smart Beehive Monitoring System

Sep 19, 2025 · A smart beehive monitoring system powered by GOcontrol tracks temperature, humidity, sound, and weight while running efficiently on solar power.

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Adjustable Bee Hive Temperature and Humidity Control With a Solar

Dec 5, 2025 · Overall, the Adjustable Beehive Temperature and Humidity Control with a Solar Exhaust Fan is a valuable tool for beekeepers who are dedicated to maintaining healthy hives, ...

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Self-Powered Smart Beehive Monitoring and Control ...

May 18, 2021 · This paper proposes a Self-Powered Smart Beehive Monitoring and Control



System (SBMaCS) using IoT to support remote follow-up and control, enhancing bee colonies' ...

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Design of intelligent beehive based on single chip ...

Oct 11, 2023 · In the traditional beekeeping mode, there is a problem of not being able to monitor and control the temperature, humidity, and weight inside the beehive in real-time. Therefore, ...

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Smart Beehive Monitoring System

May 21, 2025 · ESP32-based IoT system for real-time beehive monitoring with temperature, humidity, bee activity tracking, weight measurement, and Firebase integration. Complete with ...

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Adjustable Bee Hive Temperature and ...

Dec 5, 2025 · Overall, the Adjustable Beehive Temperature and Humidity Control with a Solar Exhaust Fan is a valuable tool for beekeepers who ...

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Smart Control of Temperature and Audio Monitoring Inside Beehive...

Sep 21, 2023 · In this study, a prototype of a smart control system for temperature management in cold weather and audio monitoring inside a beehive was developed at an affordable price of ...

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