

# Solar Powered Autonomous Sanitary Robot with Android Alert System

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**ABSTRACT** - "Solar Powered Autonomous Hygiene Robot with Android Warning System" offers a solution that aims to revolutionize hygiene. This new robot uses solar energy to operate autonomously, requiring no external electricity and reducing its carbon footprint. Equipped with advanced sensors and navigation capabilities, the robot can navigate around the house, work efficiently and disinfect to maintain hygiene standards. Additionally, the integration of the Android Alert system enables remote monitoring and control, allowing users to receive instant updates on the robot's progress and affected impact when needed. In a world where its use is increasing, this technology has great potential to improve hygiene and increase health and safety in many places, from hospitals to workplaces and public spaces.

**Key Words:** Automatic Floor Cleaning, Microcontroller, Gas Detection, Temperature Sensing, Humidity Sensing, Safety Indicator, Bluetooth / IoT Enabled cleaning Robot, Gas Leakage Indicator.

## INTRODUCTION

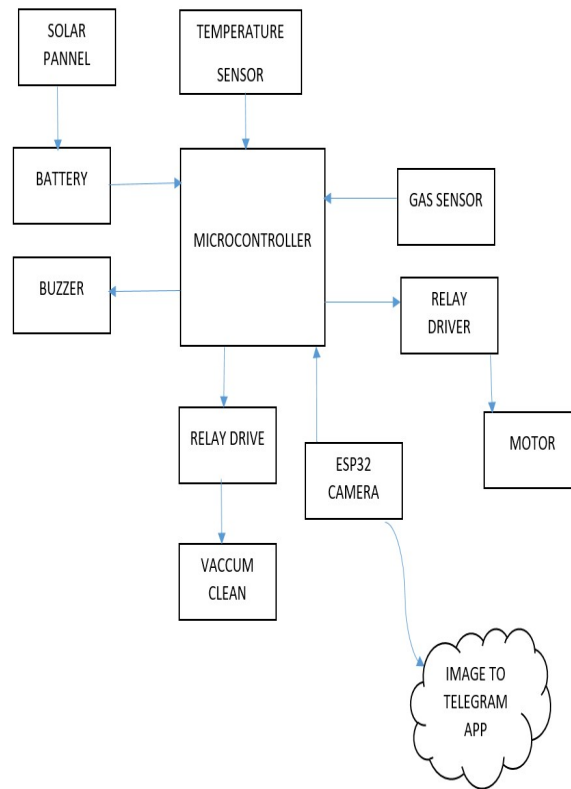
The launch of the "Solar Powered Autonomous Hygiene Robot with Android Alert System" represents an innovation at the intersection of renewable energy, robotics and healthcare technology. As society continues to emphasize cleanliness and hygiene, especially in high-traffic environments such as hospitals, schools and public places, there is an urgent need for solutions that can effectively and reliably maintain hygiene standards. This presentation shows a great idea: a solar-powered robot equipped with advanced sensors and navigation capabilities, combined with an Android alarm system, designed to replace the way Cleaning is done in many indoor spaces. Robotic solutions not only ensure safety and efficiency, but also eliminate dependence on external power sources, providing uninterrupted flexibility and permanent independence. The robot's freedom allows it to go inside, identify and disinfect precisely and efficiently. Additionally, with the addition of the Android Alert system, a remote monitoring and control system is introduced, allowing users to instantly follow the robot's progress and provide the best hygiene by intervening when necessary. This guidance paves the way for exploration of changes designed to improve sanitation standards and create a clean, safe environment for everyone.

## ANALYSIS OF SANITARY ROBOT

The solar-powered autonomous hygiene robot with an Android notification system represents a major advance in healthcare technology. Integration of solar energy leads to a sustainable and efficient operation, reducing dependence on external energy sources and making robots suitable for long-term use in many indoor areas. Additionally, the robot's freedom allows it to walk through the space, identify it, and disinfect it appropriately. This feature not only makes cleaning clean, but also optimizes efficiency and resource usage by reducing the need for manual intervention. Additionally, the integration of the Android alarm system improves the robot's performance by providing real-time monitoring and control. Users can track the robot's progress, receive alerts and intervene when necessary to ensure timely and effective hygiene. This analysis shows that a solar powered solar panel with Android alarm can be used in hospitals, schools, etc. It demonstrates the potential to update the cleaning process in the indoor environment and ultimately improve the health and safety of all residents.

## SYSTEM DESCRIPTION

The system has many important features to ensure control and clean operation. As a constant power source, the solar panel uses solar energy to charge batteries, ensuring continuous operation even in areas without direct electricity. Microcontrollers serve as central functions in coordinating various sensors and actuators. Temperature sensors provide environmental information to ensure performance and safety, while fuel sensors detect pollutants that may pose a risk to vehicle occupants. The relay driver controls the operation of the vacuum cleaner and other actuators clearly and cleanly. Additionally, the audio alert provides an alarm to indicate the status of the system or alert the user to detected problems. Integration of the ESP32 camera module improves performance by providing feedback, allowing users to remotely monitor the progress of the job and analyse the results in the Telegram application.



In addition, the addition of a vacuum cleaner and motor allows the body to clean itself. This battery-operated vacuum cleaner effectively removes indoor dust, debris, and other contaminants, keeping the environment clean and tidy. Motors controlled by microcontrollers drive the power of the cleaning equipment, allowing the body to move according to the environment and cleaning purpose. In addition, the ESP32 camera module collects photos and videos of the cleaning process, providing a clear view of the work done and allowing users to monitor the work remotely. Overall, this combination provides the best solutions that use renewable energy and improve the ability to monitor the home in a way that is efficient and effective.

#### COMPARISON OF SANITARY ROBOT

Of course, here is a comparison of the two views on robotic hygiene in tabular form: This tabular comparison provides a quick overview of the main features and differences between the two hygiene technologies, allowing for easy evaluation and decision-making based on specific needs and preferences

#### CONCLUSION

In summary, solar-powered autonomous hygiene robots with Android notification systems represent an important step in the field of health technology. By using renewable solar energy and integrating robotics and technology, this new solution offers a sustainable and effective way to keep the interior clean and tidy. With their ability to manage space, identify locations, and disinfect effectively, robots streamline the cleaning process while reducing the need for human intervention. Additionally, adding an alarm system to Android increases functionality, enables remote monitoring and control, and ensures timely intervention regarding hygiene. Overall, this advanced robotic development holds great promise in revolutionizing hygiene and promoting health and safety in many indoor environments.

#### FUTURE SCOPE

Looking to the future, the solar-powered cleaning robot with Android alarm system has great potential for further development and application. One avenue for future development is to enhance the capabilities of robots through the combination of artificial intelligence (AI) and machine learning algorithms. Thanks to the use of artificial intelligence, robots can learn and adapt to their environment, making the journey more comfortable and improving their ability to analyse and disinfect with greater accuracy. In addition, there is room to expand the robot's capabilities to include a variety of hygiene tasks such as disinfection and diagnostics, strengthening its effectiveness in ensuring health and safety. Additionally, the future of this technology will extend into indoor

spaces, including outdoor applications such as public spaces and transportation. By expanding the robot's capabilities and adapting it for outdoor use, it can help maintain hygiene standards in large areas, reduce the spread of diseases and improve health. In addition, ongoing R&D efforts may focus on optimizing the performance and durability of the robot, making it reliable and cost-effective in long-term use. Overall, the future of solar-powered hygiene robots with Android notification systems holds great promise in promoting hygiene and creating a healthy environment. Clean and safe drinking for everyone.

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