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Solar Powered Grass Cutter

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Abstract: *A solar-powered grass cutter is an eco-friendly alternative to conventional grass-cutting machines, which typically depend on fossil fuels. This project explores various factors like design, working principle, and advantages of a solar grass cutter, highlighting its environmental benefits, cost-effectiveness, and sustainability. The solar grass cutter operates using photovoltaic (PV) panels that convert sunlight into electrical energy. This electrical energy is stored in a rechargeable battery, which provides the power to a motor connected to rotating blades for cutting the grass. The system is manually controlled. Unlike conventional lawnmowers, this system produces no harmful emissions, reduces noise pollution, and lowers operational costs. Key components of the solar grass cutter include the solar panel, battery, DC motor, and cutting mechanism. The efficiency of the system depends on factors such as solar panel capacity, battery storage, and blade design. Additionally, integrating automation features like obstacle detection and remote control operation and grass collection can improve performance and user convenience. By reducing dependency on fuel sources, it promotes environmental conservation and supports green energy initiatives. This study concludes that solar grass cutters are a viable solution for small- to medium-scale lawn maintenance, particularly in regions with ample sunlight. Future improvements could include enhanced battery technology, AI-based navigation, and self-charging mechanisms for increased efficiency and autonomy.*

Keywords: Solar grass-cutter, lawn-mower, eco-friendly, cost-effective

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