

52. Title: A solar PV-battery based hybrid water pumping system for rural areas

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Keywords: Water pumping, Irrigation, PV-Battery, Grid

Domain: Motors & Machines

Summary: A solar PV-Battery based hybrid water pumping system (driven by a synchronous reluctance motor drive) is provided to allow uninterrupted water pumping for irrigation in areas without access to grid. The size of PV panel is reduced due to usage of highly efficient synchronous reluctance motor. The mechanical sensors are eliminated. It allows improved energy utilization as compared to existing water pumping solutions.

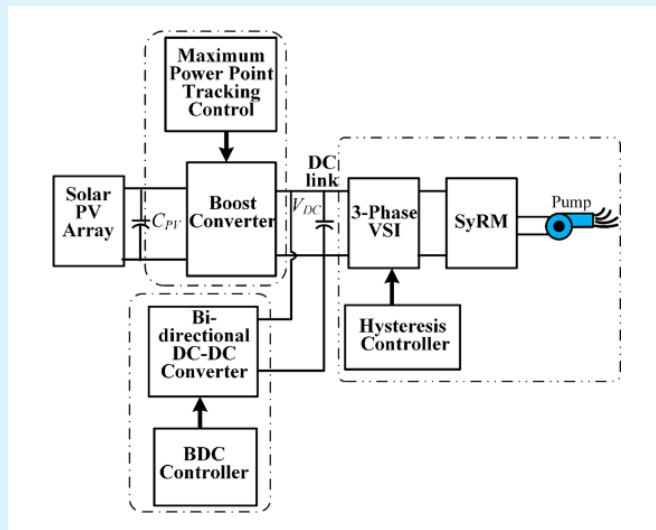


Diagram: Solar PV-Battery based hybrid water pumping system

Advantages:

- » The overall cost is less due to reduction in size of PV panel
- » Hybrid system favorable for rural areas inaccessible to the grid.

Applications: Domestic and irrigation, in rural areas, or areas inaccessible to grid

Scale of development: Functional prototype developed and performance validated in Laboratory environment.

Technology Readiness Level: 5

IP status: Indian Patent Application 202111042545