

From the setup mentioned in Table 1, the data variables are collected over nearly more than 500 days. The data collected consist of hourly mean ambient temperature ( $T_a$ ), hourly mean module temperature ( $T_m$ ), hourly mean solar irradiance measured at two different tilts ( $I_3$  and  $I_{15}$ ), and hourly mean PV power []. Data that is collected is measured at a specific ...

This paper introduces the novel yokeless mover permanent magnet linear generator (YMPMLG) to reduce mover mass, increase power density, increase thrust and decrease the normal force on the mover, which can make this generator a more suitable structure for operating in solar cogeneration systems.

In this study, a new  $3/2$  slot/pole three-phase tube-type linear generator was designed and evaluated for performance and manufacturability. Objective functions were defined for power and efficiency increase to reduce generator power ripple, and the results of Mixed-Integer Sequential Quadratic Programming, Multi-Objective Genetic Algorithm ...

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Linear stepper motors are now being incorporated into solar trackers to further enhance their movements. These motors provide precise control over the positioning of solar panels, which is essential for optimizing energy capture. Unlike traditional motors, linear stepper motors move in incremental steps, allowing for fine adjustments ...

4 ???&#0183; Beyond wind and solar, linear motors are also instrumental in emerging technologies, such as wave energy converters. As oceanic energy technologies advance, linear electric motors can efficiently convert the oscillating movements of sea waves into electrical energy--a vital form of renewable energy that has yet to reach its full potential. In these instances, linear motors ...

Solar cogeneration systems convert the thermal energy of solar radiation into mechanical energy (by means of a free-piston Stirling engine) and then into electrical energy (by means of a linear generator). This paper ...

Linear Generator technology can complement intermittent renewable wind and solar with firm, dispatchable clean power from renewable fuels. When electric vehicle recharging from the grid is not available, not practical or not economic, ...

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