

Departmental Seminar

Seminar Title : Solar Power Optimizer Design and MPPT Control using Flyback Converter
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Venue : Seminar Room (EE-205)
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Abstract : This paper presents a solar power optimizer (SPO) system to efficiently harvest the maximum amount of energy from each PV panel and integrate it with a DC bus. The proposed SPO employs a flyback converter, which operates with the P&O maximum power point tracking algorithm. The efficacy of these SPO systems is significantly improved, particularly under partial shading conditions, where centralized PV systems incur substantial losses. The performance of the 1 kW SPO system is evaluated in the presence of two different partial shading patterns and compared with the results of the centralized converter system. Simulation results show that the proposed SPO system has a tracking efficiency above 99.5 %, enhancing the overall performance and making it a potentially viable solution for PV applications.