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## **DESIGN OF EFFECTIVE CONTROLLER FOR GRID CONNECTED PV SYSTEM USING AN ADAPTIVE MPPT TECHNIQUES**

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### **Abstract**

This work presents an adaptive method for monitoring maximum power of a grid connected PV system. The Neuro Fuzzy Controller (NFC) with Shuffled Shepherd Optimization (SSO) is incorporated as an adaptive method to control the grid connected PV system. Using SSO, the parameters of the MPPT based on the NFC controller are optimally chosen. A 100-kW PV system connected to a medium distribution utility is used as a test system to examine the performance of the proposed system. Then, to enhance the output of the PV, a novel enhanced boost converter with high gain is formulated. Further to analyze the performance of the proposed system in real time application, experimental set up have been proposed. Additionally, a comparison of the performance is made with the other controllers. From the results, it is found that the designed controller enhances the MPPT control performance and successfully raises the tracking sensitivity and accuracy of a PV power generation system.

*Key words:* boost converter and neuro fuzzy controller (NFC), PV array, MPPT technique, SSO algorithm

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