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| **Author(s) Name:** | Arnob Chandra Dafader, Md. Rifat Hazari, Shameem Ahmad and Mohammad Abdul Mannan | | |
| **Contact Email(s):** | rifat@aiub.edu | | |
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| **Abstract:** |  |
| Perturb and observe (P&O) is a well-known maximum power point tracking (MPPT) algorithm that is used in solar photovoltaic (PV) systems to increase its efficiency. However, as the PV system uses solar irradiance and temperature for making electric power, the fast change of these two affects the performance of P&O and the efficiency of the PV system. Thus, the P&O algorithm fails to detect maximum power point (MPP) if temperature and irradiance change quickly. Therefore, this paper presents an adaptive neuro-fuzzy inference system (ANFIS) based P&O algorithm of MPPT controller for a solar PV system to solve the issues mentioned earlier. The utilization of the proposed ANFIS in the P&O algorithm can track the fast changes in solar irradiance and temperature to extract the maximum power from the solar PV panel. Comparative analysis has been done on MATLAB/Simulink software for both the traditional P&O and the proposed ANFIS-based P&O algorithm to show the effectiveness of the proposed MPPT controller. | |