World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:10, No:01, 2016

# Artificial Neural Networks Controller for Active Power Filter Connected to a Photovoltaic Array

**Authors :** Rachid Dehini, Brahim Berbaoui

**Abstract :** The main objectives of shunt active power filter (SAPF) is to preserve the power system from unwanted harmonic currents produced by nonlinear loads, as well as to compensate the reactive power. The aim of this paper is to present a (PAPF) supplied by the Photovoltaic cells ,in such a way that the (PAPF) feeds the linear and nonlinear loads by harmonics currents and the excess of the energy is injected into the power system. In order to improve the performances of conventional (PAPF) This paper also proposes artificial neural networks (ANN) for harmonics identification and DC link voltage control. The simulation study results of the new (SAPF) identification technique are found quite satisfactory by assuring good filtering characteristics and high system stability.

**Keywords :** SAPF, harmonics current, photovoltaic cells, MPPT, artificial neural networks (ANN)
**Conference Title :** ICECECE 2016 : International Conference on Electrical, Computer, Electronics and Communication Engineering
**Conference Location :** Jeddah, Saudi Arabia
**Conference Dates :** January 26-27, 2016