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A Electrical Network Connected Fuel Cell Based On (MLFFN) Multilayer Feed Forward Neural Network

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Electrical Power utility should continually provide the flow of energy at their customers, with maintaining sinusoidal and symmetrical voltage at the constant frequency and rms value of supply voltage. But due to power system variations under normal operation and to unwanted events like short-circuit faults, the Power utility never assure these requirements. The aim of this paper is to present a shunt active compensator supplied by the Fuel cells, in shunt active compensator feeds the linear and nonlinear loads by harmonics and reactive currents and the overload energy is released to the power system.

In order to reach multifunctions as harmonic mitigation, reactive and active power control, this paper uses the (MLFFN) Multilayer Feed Forward Neural Network as a control system; the plan is made up of fuel cells, linked to a shunt active compensator. The simulation results prove the efficiency of this plan with the mentioned method for release the fuel cell energy to the power system and power quality improvement.

Keywords: PEMFC, MLFFN, Power-Factor, active compensator, harmonics current