



Simulation of a Novel Shunt Active Filter to Reduce the Harmonics Due to Non Linear Loads in Distribution System

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Abstract: The active power filter has been proved to be an effective method to mitigate harmonic currents generated by nonlinear loads and to compensate reactive power present in the system. However the Active Power Filters for harmonic current compensation do not show significant moderations for harmonic voltage problems and filters for harmonic voltage compensation do not provide reliable solution for harmonic current problems. Also the Active Power Filters performance for low frequency problems is very poor. The methods of harmonic current detection play a crucial part in the performance of active power filter (APF). This paper presents a new control strategy in which shunt active power filter configuration is developed using adaptive fuzzy control in order to define simple control algorithm which requires minimum number of current measurements. The effectiveness of the proposed control strategies are demonstrated through results. The proposed systems are implemented with MATLAB/SIMULINK.

Keywords: Active Power Filter, Harmonic voltage, Shunt Active Power Filter, Fuzzy Control.