ACTIVE CURRENT HARMONIC COMPENSATION USING FUZZY LOGIC CONTROLLER

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Abstract

This paper proposes a control technique for the mitigation of harmonics and compensation of reactive power using shunt active power filter for nonlinear loads. The proposed method is simple for implementation and enhances the power quality. The active filter for compensation can be connected to one or more nonlinear loads. This filter provides controlled current harmonic injection to eliminate the harmonic from the source side of the electric system and can improve the power factor. The current harmonics is compensated using active power filter and the system has the function of voltage stability and harmonic suppression. In this paper, fuzzy logic controller, one of the soft computing techniques has been proposed for the control scheme to switch the active filter. The advantage of this scheme is that it does not require accurate mathematical model, because it can work with imprecise inputs, and can handle nonlinearity. They are more robust than conventional nonlinear controllers. The control scheme is designed and the model is implemented and simulated using MATLAB-SIMULINK. The simulation results exhibit the performance of the proposed controller in current harmonic compensation.