

## **ENHANCEMENT OF POWER QUALITY USING SHUNT ACTIVE POWER FILTER**

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### **ABSTRACT**

This paper represents the technique for enhancement of power quality using Shunt Active Power Filter (SAPF) at load side of utility grid. The major objective of this paper is to introduce a suitable firing pulse generation method to obtain best harmonic compensation technique of shunt active power filter. Due to increasing use nonlinear load, harmonics at the load side of utility grid increased which cause harmonic losses. Proposed method of harmonic compensation using SAPF provides compensation current to the load so that source power factor can be maintained to unity. To achieve this purpose, hysteresis current control technique is used to obtain gate pulses to control voltage source inverter (VSI). The performance has been verified for nonlinear load using MATLAB/SIMULINK platform.

**KEYWORDS:** Power Quality, Instantaneous Reactive Power Theory, P-Q Theory, Shunt Active Power Filter, Hysteresis Current Control, Nonlinear Load, Harmonics