

# **Abstract**

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## **Fuzzy logic controlled shunt active power filter for three phase four wire systems with balanced and unbalanced loads**

This paper presents a fuzzy logic controlled shunt active power filter used to compensate for harmonic distortion in three-phase four-wire systems. The shunt active filter employs a simple method for the calculation of the reference compensation current based on Fast Fourier Transform. This presented filter is able to operate in both balanced and unbalanced load conditions. A fuzzy logic based current controller strategy is used to regulate the filter current; hence ensure harmonic free supply current. The validity of the presented approach in harmonic mitigation is verified via simulation results of the proposed test system under different loading conditions