

**A COMPARATIVE OF HARMONIC ANALYSIS WITH AND
WITHOUT ACTIVE POWER FILTER TECHNIQUES
IN THREE-PHASE UTILITY INTERFACE OF POWER
ELECTRONIC LOADS**

Project report is presented in partial fulfillment for award of Bachelor of

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ABSTRACT

Harmonics generation can lead to serious power quality problem if it is not reduced to acceptable level. Electric components content of non-linear loads contribute to serious harmonic injection to the main supply line. This project is proposed to design a simple three-phase industrial networks (power electronic load) for the purposes of studying the harmonic of supply network due to the use of various non-linear load (power electronic load). The results of this study also include the harmonic analysis without filter and the harmonic analysis with filter. Active power filter (APF) proposed is based on three-phase inverter connected in parallel at the AC terminal loads or in point of common coupling (PCC). Current distribution characteristic at the point of common coupling (PCC) is investigated and measurements are taken with various types of load is connected. The results from the basic model without filter are then compared with similar model implemented using Pspice developed to ascertain its accuracy. This work illustrates the use of the power system blockset (PSB), within the MATLAB/simulink V6.1 software. The total harmonic distortion (THD) measurement collected from the harmonic data analysis.

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