

TITLE:

**STUDIES ON CONTROL ELECTRONIC IMPLEMENTATION OF
ACTIVE POWER FILTER WITH RECTIFIER BOOST TECHNIQUE
USING TL081CP**

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ACTIVE POWER FILTER WITH RECTIFIER BOOST TECHNIQUE
USING TL081CP**

**This thesis is presented in partial fulfillment for the award of the Bachelor of
Electrical engineering (Honors)**

Universiti Teknologi MARA



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ABSTRACT

This paper presents studies on control electronic implementation of active power filter with rectifier boost technique using TL801CP. A current control loop (CCL) using standard proportional integral was used to implement PFC to correct the pulsating nature of the input current to almost unity power factor form with low total harmonic distortion (THD) level well below the acceptable limit that was defined in the standard of IEEE 519. The purpose uses TL081CP because it has a faster time response compare to UA741CN general purpose op amp. This implementation has use a boost technique topology which is could perform correction of input current wave shaping in term of continuous, sinusoidal and in phase with the supply voltage. MATLAB/Simulink (MLS) has used to analyze this Active Power Filter circuit waveform and Total Harmonic Distortion (THD). An experimental test-rig was then constructed to verify the operation: incorporated with control electronics, gate drives and power circuits. Selected simulations and experimental results are presented to verify proposed operation.

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