

**UNIVERSITI TEKNOLOGI MARA
CAWANGAN PULAU PINANG**

**A STUDY AN EFFECT OF
HARMONIC IN COMPUTER
LABORATORY OF UITM PULAU
PINANG**

MUHAMMAD 'AIZAT BIN NASIR

**BACHELOR OF ENGINEERING
(HONS) ELECTRICAL AND
ELECTRONIC ENGINEERING**

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

The research of this project is to study an effect of harmonic in computer laboratory at UiTM Pulau Pinang. Basically, the harmonic distortion either current or voltage is known as the changes of amplitude in the waveform of voltage source from the ideal sinusoidal waveform. This is because of non-linear loads such as computers generate the harmonic to the supply. The levels of harmonic distortion at the DB of computer laboratory in UiTM Pulau Pinang will be measured by Fluke 1750 power equipment. An analysis will be made based on harmonic data that was taken. The purpose is to develop analytical method in designing the passive filter that will mitigate the harmonic currents caused by computer loads. For this project, MATLAB /SIMULINK was used to design the proposed model of passive filter circuit to mitigate the harmonic. The simulation circuit of equivalent SMPS for the computer laboratory have 3 different phase which is phase A, phase B and phase C. Simulation results from the proposed circuit model will show the difference result of harmonic levels which have higher THD_I before installation of passive filter while after passive filter installation, the THD_I levels was reduced.

ACKNOWLEDGEMENT

Firstly, I wish to thank Allah S.W.T. for giving me the opportunity to embark on my Bachelor Degree and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Madam Nurul Huda Ishak.

My appreciation goes to the Mr. Asri who is Assistant Engineer at facility of UiTM Pulau Pinang for his assist in helping my project goes well Special thanks to my colleagues and friends for supporting me with this project.

Finally, this thesis is dedicated to the loving of my very dear father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah.