

# Observatory case study on total harmonic distortion in current at laboratory and office building

## **Abstract**

This paper discusses the level of harmonic distortion in current power distribution system for laboratory and office building. These two places often house a significant number of equipment such as computers, air conditioners, etc which are significant nonlinear loads. The high number of these nonlinear loads affects the quality of the power system and energy at the linked grid. This is due to harmonics components in current that is resulted by the conversion and switching processes by the nonlinear loads. This case study is located at main operation buildings at School of Electrical System Engineering, Universiti Malaysia Perlis at Pauh Putra Campus. This case study is intended to study the severance level of harmonics in current distortions at the said power distribution system. The tool used for data mining and analysis is the Fluke 1750, which records the data for 30 days. The analysis includes the level of harmonics in current at the point of common coupling at the power distribution system. It is benchmarked against relevant standards related to harmonics in current and power quality in grid. It is found that the harmonic distortion level exceeded the maximum value set by standards. This highlighted that the quality of power at this grid is low and results in losses of energy.