

# Advanced Techniques in Harmonic Suppression via Active Power Filter: A Review

**Ekhlas Mhawi, Hamdan Daniyal, Mohd Herwan Sulaiman**

Sustainable Energy & Power Electronics Research Cluster (SuPER), FKEE, Universiti Malaysia Pahang

**Abstract** This paper intends to present the recent development of artificial intelligence (AI) applications in active power filter (APF). As a result of the development in power electronic technology, (APF) continues to attract ample attention. Compared with the traditional reactive LC filter, active power filter is considered to be more effective in compensating harmonic current generated by nonlinear loads. APF, can correct the power quality and improve the reliability and stability on power utility. A brief explanation of some important areas in AI and a comprehensive survey of the literature along the main categories of AI is presented to introduce the readers into the wide-ranging topics that AI encompasses. Plenty of relevant literatures have been selected in the review, mostly emphasized on better accuracy, robustness, efficiency, stability and tracking ability of the system.

**Keywords:** Active power filter, Artificial Intelligence, Harmonic distortion, Non-linear load, PWM