

Determination of triggering angle through a novel graphical method analysis

ABSTRACT

This paper proposes a new graphical method analysis to determine the triggering angle of the Neutral-Point-Clamped Multilevel Inverter (NPCMI). The proposed graphical method analysis utilised the ideal sinusoidal waveform as the basis of the calculation. Based on the desired sinusoidal output waveform and switching state of Neutral-Point-Clamped Multilevel Inverter, triggering angle of each switching devices are calculated and determined. The triggering angles have been calculated for 3-level, 5-level and 7-level. Total Harmonics Distortion (THD) values of line voltage and phase voltage are calculated and compared and it has been concluded that this method is successfully applied where the low THDs values are obtained.

Keyword: Neutral-Point-Clamped; Multilevel inverter; Total harmonics distortion