

Neutral-point-clamped multilevel inverter using space vector modulation

ABSTRACT

Multilevel inverters offer several advantages compared to the conventional 3-phase bridge inverter in terms of lower dv/dt stresses, lower electromagnetic compatibility, smaller rating and better output features. This paper presents a 3-level Neutral-Point-Clamped inverter using Space Vector Modulation techniques as the control strategies. A simulation model has been designed and developed. The results obtained from the simulation model have been compared with the small-scale laboratory model that has been constructed to verify the simulation model. A good agreement between the simulation and laboratory model has been achieved and a comparison with several types of multilevel inverters of various control strategies has been made.

Keyword: Neutral-Point-Clamped, Space Vector Modulation; Multilevel Inverter