**Abstract:**

This paper deals with direct torque control of an induction motor (IM) with constant switching frequency. The desired torque is obtained from the speed controller which is designed using the IP controller. Decoupling control of torque and flux is developed based on the energy model of IM using the IP controller strategies. The desired d-axis and q-axis stator voltage components are obtained from the designed controller, which decouples torque and flux. The constant switching frequency can be applied using space-vector pulse width modulation, since the desired stator voltage can be known from the decoupling torque and flux controllers. In order to achieve stable operation of the proposed IP controllers, the gains of the controllers are chosen by setting the poles in negative (left) half of s-plane and by choosing the rising time for the response of the step function. The proposed controller was verified in simulations using Matlab/Simulink and results have proven excellent performance. It was found that the proposed IP controllers can provide excellent performance to track the desired torque and speed and to reject the disturbance of load.

**Keywords**: Direct-torque control; Speed control; Energy model; Induction motor; IP controller; Space-vector pulse-width modulation