World Academy of Science, Engineering and Technology
International Journal of Mechanical and Mechatronics Engineering
Vol:9, No:09, 2015

Direct Torque Control of Induction Motor Employing Teaching Learning Based Optimization

Authors : Anam Gopi

Abstract : The undesired torque and flux ripple may occur in conventional direct torque control (DTC) induction motor drive. DTC can improve the system performance at low speeds by continuously tuning the regulator by adjusting the Kp, Ki values. In this Teaching Learning Based Optimization (TLBO) is proposed to adjust the parameters (Kp, Ki) of the speed controller in order to minimize torque ripple, flux ripple, and stator current distortion. The TLBO based PI controller has resulted is maintaining a constant speed of the motor irrespective of the load torque fluctuations.

Keywords : teaching learning based optimization, direct torque control, PI controller
Conference Title : ICEME 2015 : International Conference on Electrical and Mechatronics Engineering
Conference Location : Los Angeles, United States
Conference Dates : September 28-29, 2015