CASCADE FUZZY SLIDING MODE CONTROL – PID FOR CONTROLLING POSITION OF BRUSHLESS DC MOTOR

Name : Alfin Hidayat
Advisor : 1. Dr. Ir. Mochammad Rameli
2. Ir. Rusdhianto Effendie AK, MT.

ABSTRACT

DC motor as one of electrical machine using in industrial is substituted by BLDCM. One of the application of BLDCM is for controlling the position of lift. Position control of lift using BLDM with cascade FSMC-PID procedure has applied on the system to get high performance of velocity and position as architech want. Applying this controller we get response of BLDCM was better than without cascade procedure obtained $t_{s} (\pm 5%) = 0.69$ second, $t_{r} = 0.5053$ second, $t_{d} = 0.159$ second, and chosen gradient of sliding surface $\lambda = 0.2$ has cleared the chattering effect on the response of system.

Keywords : FSMC, BLDCM, CASCADE
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