Abstract

Brushless DC (BLDC) motors are one of the most interesting motors, not only because of their efficiency, and torque characteristics, but also because they have the advantages of being a direct current (DC) supplied, but eliminating the disadvantages of using Brushes. BLDC motors have a very wide range of speed, so speed control is a very important issue for it. There are a lot of parameters which need to be in focus while talking about a speed controller performance like starting current, starting torque, rise time, etc. There are two main methods for controlling the speed, PID Controllers, and Fuzzy PI controllers. Both are different in complexity and performance. In this paper, the PI and Fuzzy PI speed controllers for the BLDC motors will be proposed. A simulation study is conducted to evaluate the efficiency of the proposed speed controllers. Further, a comparative study is performed to validate the system effectiveness.


References

- M. Baszynski, and S. Pirog "A novel speed measurement method for a high-speed BLDC motor based on the signals from the rotor position sensor" IEEE, 30 January 2013 10. 1109/TII. 2013. 2243740.

Index Terms

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BLDC Motor  Speed Control  PI Controller  Fuzzy Controller  Fuzzy PI.