

Microcontroller Based Speed Control of BLDC Motor

Nitin Walade¹ and Dr. K B Porate²

PG Students, Department of Electrical Engineering¹

Professor, Department of Electrical Engineering²

Priyadarshini College of Engineering, Nagpur, Maharashtra, India

Abstract: Brushless DC Motor overcomes many problems of the brushed DC Motor and has been widely carried out in diverse fields. The improvement of BLDCM manage machine calls for reliable operation, first rate performance of manipulate set of rules, low cost and brief improvement cycle. This paper proposes the velocity manipulate of BLDC motor used in variety of application. the power of the force machine is elevated the use of virtual controller. The 3-P inverter is applied the use of clever electricity Module for feeding BLDC motor. The proposed machine accepts hall sensor alerts from the motor and is programmed for preferred velocity. Experimental consequences confirm the powerful evolved drive operation. The Simulink modeling of BLDC the usage of MATLAB/SIMULINK.

Keywords: BLDC Motor, 3 Phase Inverter, Hall Effect Sensor

REFERENCES

- [1]. Shao, L.; Karci, A.E.H.; Tavernini, D.; Sorniotti, A.; Cheng, M. Design approaches and control strategies for energy-efficient electric machines for electric vehicles—A review. IEEE Access 2020, 8, 116900–116913.
- [2]. Nair, R.; Gopalratnam, N. Emulation of wind turbine system using vector controlled induction motor drive. IEEE Trans. Ind. Appl. 2020, 56, 4124–4133.
- [3]. Khatri, P.; Wang, X. Comprehensive review of a linear electrical generator for ocean wave energy conversion. IET Renew. Power Gener. 2020, 14, 949–958.
- [4]. Salem, A.; Narimani, M. A review on multiphase drives for automotive traction applications. IEEE Trans. Transport. Electrification. 2019, 5, 1329–1348.
5. Li, L.; Liu, Q. Research on IPMSM drive system control technology for electric vehicle energy consumption. IEEE Access 2019, 7, 186201–186210.
- [5]. Li, L.; Liu, Q. Research on IPMSM drive system control technology for electric vehicle energy consumption. IEEE Access 2019, 7, 186201–186210.
- [6]. Rafiq, M.S.; Jung, J.-W. A comprehensive review of state-of-the-art parameter estimation techniques for permanent magnet synchronous motors in wide speed range. IEEE Trans. Ind. Inform. 2020, 16, 4747–4758.