IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 2, May 2024

AC PWM Control System in Induction Motor using Microcontroller

Aayush Bahade, Ashish Khonde, Suraj Charduke, Saurabh Wele, Prof. Suyog. S. Dhoke
Department of Electrical Engineering
Rajiv Gandhi college of Engineering Research and Technology, Chandrapur, India

Abstract: *The demand for efficient and precise control of induction motors has led to the development of advanced control systems, among which AC PWM (Pulse Width Modulation) stands out as a prominent technique. This project focuses on the design and implementation of an AC PWM control system for an induction motor utilizing a microcontroller. The system employs a microcontroller to generate PWM signals, controlling the power electronics responsible for modulating the voltage supplied to the motor. The report details the architecture, components, and methodology employed in the project. A comprehensive discussion on the PWM control algorithm, motor drive circuitry, and sensor integration is presented. The microcontroller programming and experimental results showcase the effectiveness of the proposed system in achieving precise control over motor speed and efficiency. The challenges faced during the project are discussed, along with the corresponding solutions implemented. The report concludes with a summary of achievements and suggestions for future enhancements. Overall, this project contributes to the field of motor control systems, offering a reliable and efficient solution for induction motor control through AC PWM with microcontroller integration*

Keywords: PWM

DOI: 10.48175/IJARSCT-18196
ISSN 2581-9429 IJARSCT