

ABSTRACT

DC MOTOR SPEED AND BREAKING CONTROL WITH VOICE COMMAND DESIGN USING SPEECH RECOGNITION FEATURE ON ANDROID OPERATING SYSTEM

By

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Dc motors is widely used for various applications. In some applications of dc motor speed control plays an important role. Dc motor speed control can be performed in various ways, one of which is to regulate the input voltage to the dc motor. Dc motor speed control remotely and wirelessly is more attractive and easier for users applications with dc motors. Telecommunications technology can support the needs of a remote control. One form of communication technologies that can be used for this purpose is sound technology.

This research proposes a rotational speed control and braking dc motor system using voice commands. Voice-controller application on android operating system is used to control the speed and braking dc motor by using voice commands. By using speech recognition and Bluetooth technology, control can be done from a distance of between 10 to 15 meters. Control of dc input voltage to the motor is done by using a series of open-loop buck converter. Dc motor braking is done by using a combination of H-bridge and cascade series resistors.

The results showed that motor speed control using the words that have been designed for different values can control the speed of dc motor speed is almost equal to the predetermined value. Differences speed control results due to the voltage drop on the microcontroller circuit and open-loop buck converter. The test results also showed that plugging the dc motor braking can be done well, with a combination of H-bridge circuit and cascade resistors to control inrush current due to braking. With the addition of these resistors current that occur in the braking process can be reduced by up to 0.5 Ampere.

Keyword: Speech Recognition, Speed, Breaking, DC Motor.