

Development of Android App for Designing of Stepper Motor Using Kodular Software

Adwait Malashe¹ Rahul Abhyankar² Prathmesh Kubal³ Affan Mukadam⁴

^{1,2,3}BE Student ⁴Associate Professor

^{1,2,3,4}Department of Electrical Engineering

^{1,2,3,4}VIVA Institute of Technology, Virar (E), Maharashtra, India

Abstract— A step motor or stepping motor is also known as a stepper motor, may be a brushless DC electric motor of a full rotation divided into a number of equal steps. During this project, we aim to propose GUI software specifically designed for this application. Implementing a system that has GUI for designing Stepper Motor dependent variables supported given parameters. Designing techniques were developed for both typologies of static magnet stepper motors, respectively bipolar stepper motor and unipolar stepper motor.

Keywords: Java Language, Program Stepper Motor, Robotics

I. INTRODUCTION

In this review paper, we are visiting introduce the easiest way to calculate important parameters required for designing a stepper motor. A step motor or stepping motor is also known as a stepper motor, may be a brushless DC electric motor of a full rotation divided into a number of equal steps. The motor's position are often commanded to move and hold at one of these steps without any position sensor for feedback Stepper motors are a particular class of motors that fall in the category of motors. they need multiple poles which allow accurate positioning, and division of an entire rotation of the motor to a uniform number of steps. Most stepper motors have 200 steps per revolution and supply a repeatable relative positioning without feedback. Stepper motors are used for several applications i.e., security systems medical devices, antennas, telescopes, robots, fluid pumps, hard disc drives, electronics, and plenty of industrial applications. A stepper motor is a mechanical device it converts electrical power into mechanical power. Also, it's a brushless, synchronous motor that can divide a full rotation into an expansive number of steps. The motor's position can be controlled accurately without any feedback mechanism, as long because the motor is carefully sized to the application. Stepper motors are like switched reluctance motors.

The stepper motor uses the theory of operation for magnets to make the motor shaft turn at a precise distance when a pulse of electricity is provided.

II. LANGUAGE USED FOR DEVELOPING

A. Software:

Java may be a widely used object-oriented programming language and package platform to form applications that run on billions of devices, as well as notebook computers, mobile devices, diversion consoles, medical devices, and plenty of others. The foundation and syntax of Java are supported the C and C++ languages. One major advantage of developing package with Java is its portability. Once you have got written code for a Java program on a personal computer, its terribly straight forward to move the code to a mobile device

III. COMPARISON BETWEEN STEPPER MOTORS

Motor type	features
Stepper motors	<ol style="list-style-type: none"> 1) Can be driven openloop without feedback 2) No accumulative position errors 3) Responds directly to digital control signals
Variable reluctance stepper motor	<ol style="list-style-type: none"> 1) High torque to inertia ratio 2) Low rotor inertia 3) Ability to freewheel 4) Capable of high stepping rate.
Permanent magnet hybrid motors	<ol style="list-style-type: none"> 1) Higher holding torque capability 2) High efficiency, high stepping rate. 3) Better damping due to the rotor magnet.
Electro- hydraulic motor	<ol style="list-style-type: none"> 1) Very high holding torque capability. 2) High torque-to-inertia ratio. 3) Capable of high stepping rates. 4) Less tendency to oscillate and resonate.

Table 1: Comparison Table of Different Types of Stepper Motors

IV. CONCLUSIONS

The system provides an easy-to-use interface for designing of stepper motors. The user only has got to provide the required parameters to get a properly modeled stepper motor. during this project, an android app has been developed for modeling all types of stepper motors

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