

**DEVELOP ALGORITHM FOR INVERSE PARK  
TRANSFORMATION**

**FAIRUZ NADZIRAH BINTI MOHAMAD IBRAHIM**

**SCHOOL OF MICROELECTRONIC ENGINEERING  
UNIVERSITI MALAYSIA PERLIS**

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# DEVELOP ALGORITHM FOR INVERSE PARK TRANSFORMATION

by

FAIRUZ NADZIRAH BINTI MOHAMAD IBRAHIM

Report submitted in partial fulfillment  
of the requirements for the degree  
of Bachelor of Engineering



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## **APPROVAL AND DECLARATION SHEET**

**This project report titled Develop Algorithm for Inverse Park Transformation was prepared and submitted by Fairuz Nadzirah Binti Mohamad Ibrahim (Matrix Number: 081031249) and has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering ( Electronic Engineering ) in Universiti Malaysia Perlis (UniMAP).**

**Checked and Approved by**

---

**(RAZAIDI BIN HUSSIN)  
Project Supervisor**

**School of Microelectronic Engineering  
Universiti Malaysia Perlis**

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## DEVELOP ALGORITHM FOR INVERSE PARK TRANSFORMATION

### ABSTRAK

Park Transformation digunakan untuk mewujudkan perubahan pada nilai arus  $I_{ds}$  dan  $I_q$ . Ianya juga adalah untuk mengawal bahagian persamaan di antara arus vector stator dan arus vector rotor. Inverse Park Transformation digunakan untuk menukar rangka stasioner. Teori CORDIC digunakan untuk mengira nilai modul sinus dan kosinus yang digunakan dalam persamaan matematik bagi Inverse Park Transformation. Nilai ini kemudiannya didarabkan dengan nilai masukan  $V_d$  dan  $V_q$  mengikut persamaan di dalam formula Inverse Park Transformation untuk mendapatkan nilai sudut putaran bagi motor sehingga 360 darjah.

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## DEVELOP ALGORITHM FOR INVERSE PARK TRANSFORMATION

### ABSTRACT

The park transform can be used to realize the transformation of the  $I_{ds}$  and the  $I_{qs}$  current from the stationary to the moving reference frame and control the spatial relationship between the stator vector current and rotor flux vector. The inverse park transform used to transform the rotating frame into the stationary frame. This project aims to develop an algorithm for Inverse Park Transformation by using the selection approach. The theory CORDIC used to calculate the value of sine and cosine module that being used in the Inverse Park Transform mathematical equation. Then by using the formula or mathematical equation for Inverse Park Transformation, the value of sine and cosine are multiply by the input of  $V_d$  and  $V_q$  to get the angle rotation for the motor up to 360 degree.

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