

## **Dynamic performance Analysis of DC Motor Driven by Thyristor Converter Using Matlab/Simulink Pacakge<sup>1</sup>**

**Wasif Al Saluos<sup>2</sup>      Mazouz Salahat<sup>3</sup>  
Ali Al Jazi<sup>4</sup>**

### **Abstract**

The present paper discusses the dynamic performance of fully controlled three phase thyristorized converter to drive 5hp DC motor. Matlab/Simulink built-in blocks have been used for modeling the global speed control of the DC motor Drives. Two DC motor drive systems were investigated , these systems include:

- a) DC motor drives with single PID speed control loop.
  - b) DC motor drives with two nested control loops (current and speed loops).
- It has been demonstrated that the dynamic performance of the DC motor drive system with two control loops exhibits higher dynamic response and faster transient response compared to its counterpart of single speed control loop.

**Key words:** DC Motors ;DC Motors drives; PID Controller, Feedback control Loop, Control Systems , Power System Blockset.

<sup>1</sup> For the paper in Arabic see pages (127- 145).

<sup>2</sup> Electrical Power Engineering Dep.-Mechanical Electrical Engineering College-Damascus University.

<sup>3</sup> Mechatronics Engineering Dep. Faculty of Engineering Technology –Al-Balqa University- Jordan.

<sup>4</sup> Electrical Power Engineering Dep.-Mechanical Electrical Engineering College-Damascus University.