

DYNAMIC RESPONSE REGULATIONS OF EXTRUSION MOLDING
MACHINE THROUGH MATHEMATICAL MODELING AND SIMULATIONS

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Plastic production has developed one of the most sustainable production processes until today. Such processes are gradually evolving to ensure higher performances levels and also increase in stability and consistency of products with the most efficient energy cost.

This project focuses on the improvements of the performance of Plastic production using Extrusion Molding Machine. Such improvement is undertaken through a series of simulation using Fuzzy Logic Control and the various combinations of PID Controllers. The simulations are all developed through the features of SIMULINK from MATLAB in which allows users to simulate different control techniques to the subjected machine system.

Following the simulation, there are several data in which is compared to the simulation to verify the accuracy of the mathematical model in which was developed.

Keywords: Extrusion, Stability, Overshoot, PID- Controller, Fuzzy Logic Controller, Resin, Simulation, Theoretical Value, Actual Value, Mathematical Model, Step-Response, Frequency Response (use scientific terms).



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DEDICATION

I dedicate this work to my beloved family and friends



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