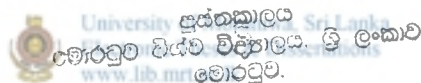


**DEVELOPMENT OF A MODEL FOR DETERMINING THE  
OPTIMUM CONTROL PARAMETERS ON A PLASTICS  
INJECTION MOULDING MACHINE.**

**BY  
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## ABSTRACT:

Production of plastic items using the injection molding process has become technologically advanced with the advent of both newer technology and newer materials. Setting of machine control parameters play a major role in the ultimate product quality and the machine efficiency. Control of machine and mould parameters is complex task, because behavior of the material inside the machine and the mold, is effected by a range of contributing factors. This results in machine control becoming very difficult and one has to overcome this problem either by trial and error procedures, which cost time and material, or employ advanced microprocessor controlled programming methods and advanced automated machines with very high capital costs.



In Sri Lanka, injection molding machines with highly advanced features are not very common. Conventional methods are used to determine the appropriate machine settings such as clamping force, charging stroke, barrel and injection pressure. Adjustment of these parameters to correct a fault in the product or to achieve maximum output rates, while manufacturing product quality is done experimentally, often relying on operator experience. This project was aimed at building up some simple mathematical models to determine the optimum settings taking into consideration the basic rheological equations and experimental data that are readily available in the literature. The correctness of these models was checked for validity on a medium scale injection molding machine and very

encouraging results have been obtained. The applicability of this method for further investigation is critically assessed.



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