

DESIGN OF A SINGLE SIDED LINEAR INDUCTION MOTOR (SLIM) USING A USER INTERACTIVE COMPUTER PROGRAM

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ABSTRACT

This project studies the design of Single sided linear induction motor (SLIM) using a user interactive computer program, which can be used to power capsules in a pneumatic capsule pipeline (PCP) system. A SLIM of specified parameters is designed using a user-interactive MATLAB program, and then compared to a similar tubular linear induction motor (TLIM). The SLIM equations and design procedures are developed and its performance is predicted using equivalent circuit models. End effects and edge effects are neglected in this study.

Optimum design parameters are obtained by the iterative procedure of the design algorithm. The performance curves of the SLIM i.e., thrust and efficiency, are drawn and then analyzed for different target thrust values and rated slip. Finally the SLIM design parameters are compared with those of a similar TLIM design of similar specifications.