Direct Control of Thrust and Normal Forces in Linear Induction Motor Drives

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TECHNOLOGY NEED
Vector control has been intensively utilized in linear induction machines (LIM) to achieve maximum speed acceleration and deceleration for linear induction machines. However, vector control does not provide sufficient functionality for LIM as for other types of machines, e.g., rotary induction machines (“RIM”) due to trailing eddy current effects and magnetic asymmetry effects. Furthermore, vector control schemes are relatively complicated, expensive, and ineffective.

INVENTION DESCRIPTION/SOLUTION
Researchers at UT Arlington have invented a method and system for a control scheme for linear induction machines. This invention can simplify the control scheme, thus reducing the manufacturing cost. Moreover, it can provide robust speed and current control with fast response due to the inclusion of maximum energy conversion ratio and a maximum acceleration and deceleration for linear induction machines.

APPLICATIONS
- Transportation
- Aerospace
- Military

KEY BENEFITS
- Simplified control scheme
- Fast response
- Cost effective

STAGE OF DEVELOPMENT
Prototype
Extensive tests done

PUBLICATIONS

INTELLECTUAL PROPERTY STATUS
US7839101B2