The Office of Technology Management

UNIVERSITY OF TEXAS ARLINGTON

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

Tech ID: UTA 07-28

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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

H. Yu, B. Fahimi, IEEE IEMDC 2007, May 3-5, 2007

INTELLECTUAL PROPERTY STATUS

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