

Third Laureate Invention



◆ **Project title:** Efficiency Maximization Control and Variable Speed Drive of Single Phase Induction Motors

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Abstract:

The recent rising of oil prices and global warming crises increasingly support the ongoing practice of loss minimization control of electric motors including single-phase induction, as the most used motors. Therefore, the tendency toward using variable-speed drives (VSDs) to save energy by adjusting motor speed is seen, but on account of increasing motor loss in nonrated conditions, an efficiency control system can improve energy saving even more. In this project, an appropriate method for motor efficiency maximization control, combined with a VSD, is presented and implemented. The method results in substantial energy savings over wide ranges of motor load and speed. It can be used in heating and cooling systems, home appliances and other applications of single phase induction motors in homes and many Industries.

