

## عنوان مقاله:

A Closed Loop Speed Control of Induction Motor Fed by a Quasi Z-Source Inverter Based on V/F Control

## محل انتشار:

دومین کنفرانس ملی مهندسی برق و کامپیوتر سیستمهای توزیع شده و شبکه های هوشمند (سال: 1394)

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## خلاصه مقاله:

This paper proposes a new closed loop speed control of an induction motor fed by a quasi Z-source inverter (qZSI), the speed control is based on V/F control. Quasi Z-source inverter is a recently developed topology derived from Z-source inverter (ZSI). qZSI is a one-stage power conditioner that employs a capacitor-inductor network for connecting inverter to the DC source. In this paper, through addressing detailed dynamic modeling of qZSI, qZSI is used for connecting the DC source to a induction motor. A closed loop controller is designed to control the peak dc link voltage of the qZSI, where the peak dc-link voltage is estimated by measuring the input and the capacitor voltages. By using the dynamic model of qZSI, the proper controller for the DC side is designed. The proposed speed control system compared with the standard adjustable speed drives (ASD), are able to change the motor speed from zero to the rated speed with the rated load torque. Also the qZSI inverter system provides ride-through capability during voltage sags, reduces line harmonics, improves power factor and reliability, and extends output voltage range. Simulation results are provided to demonstrate the competence of the system.

## کلمات کلیدی:

component; Quasi Z-source Inverter, Shoot through state, V/F control, Induction motor

## لینک ثابت مقاله در پایگاه سیویلیکا:

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