

Abstract

Alaa Eldin Ahmed Khalil

Embedded Control of a Boost Unity Power Factor Supply With a DC Motor Load

This paper presents a proposed setup utilizes a boost converter circuit driving a dc motor load. A pulse width modulation (PWM) technique is assessed to realize a sinusoidal supply line current, hence improving system power factor. Experimental hardware has been constructed and the software control algorithm has been implemented using an embedded C167 micro-controller. System response is demonstrated for two control modes: voltage control mode and speed control mode. Experimental results show simplicity and effectiveness of the proposed setup.