

## C115672 : MAJOR ELECTRICAL ENGINEERING

KEY WORD : INVERTER/PULSE-WIDTH MODULATION/CURRENT BANG-BANG

CHUCHEEP CHAOSIRIKUL : A CURRENT FEEDBACK INVERTER FOR 1.5  
kW INDUCTION MOTOR DRIVE. THESIS ADVISOR : ASSO. PROF GOTHOM  
ARYA, Dr.-Ing. 112 pp. ISBN 974-581-491-1

This thesis present the design, construction and testing of a current feedback inverter. The feedback of output current produces an almost sinusoidal current waveform and allows inverter output current to be regulated. When the inverter is used for motor drive, its output current is regulated so as to follow a specific function of mechanical load, resulting in a constant value of airgap flux which becomes independent of DC supply voltage and the stator resistance. The inverter can drive a 3-phase, 1.5-kW induction motor whose speed can be continuously adjusted from 150 to 1500 rpm. Moreover, the DC supply voltage can be regulated by using a switchmode rectifier whose input current waveform is almost a sine wave. The power factor of the rectifier is close to unity. The rectifier can feed excess power, resulting from motor braking, back to the ac source.