



International Journal on Recent Researches In Science, Engineering & Technology

(Division of Electrical and Electronics Engineering)

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy.

It is an absolutely free (No processing charges, No publishing charges etc) Journal Indexed in JIR, DIIF and SJIF.

Research Paper

Available online at: www.jrrset.com

Chief Editor : Dr. M.Narayana Rao, Ph.D., Rtd. Professor, NIT, Trichy.

ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

Volume 3, Issue 4,
April 2015.

JIR IF : 2.54

DIIF IF : 1.46

SJIF IF : 1.329

A Feedback Control of ZVT Bidirectional Converter With Coupled Inductor For Drives

¹B.RAJAVELU & ²DR.M.SASIKUMAR

¹U.G Student & ²Professor, Electrical and Electronics Engineering
Jeppiaar Engineering College

Rajiv Gandhi Salai, Old Mahabalipuram Road, Semmancheri, Chennai, Tamil Nadu 600119
INDIA

E-Mail:- rajavelubalasubramanian@gmail.com

Abstract: In this project, the design and simulation model of ZVT PWM Bidirectional converter with coupled inductor is introduced. This converter is used for maintaining voltage polarity of both dc sources. Here Soft switching condition is achieved with the help of two auxiliary switches and coupled inductor. Moreover the presence of coupled inductor provides significant reduction in the converter volume, since all the converter inductors are implemented on a single core. No extra voltage and current stresses on the main switches and easy to control all are other properties of this method. In buck and boost mode, the primary and secondary windings of the coupled inductor are operated in series-charge and parallel-discharge to achieve high step-down voltage gain and thus high efficiency is achieved for full line voltage range. Finally, a 50-100 -V prototype circuit is implemented to verify the performance for the efficient drive system.