

Karun Kokkonda

Electrical Engineer, [Ph.D.,]

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I have submitted my Ph.D. Thesis, at Visvesvaraya National Institute of Technology. I have working experience in research and hardware design. I have developed and analyzed laboratory prototypes of high gain DC-DC converters for grid-tied solar Photovoltaic systems

Career Objective

Seeking a challenging position in a reputed organization where I can avail my technical skills, enhance my knowledge, and leverage my learnings for the growth of organization.

Education

2018-2023: **Visvesvaraya National Institute of Technology (VNIT), [Ph.D., Submitted Thesis],** Electrical Engineering, *Design and Analysis of High gain DC-DC Converters for Grid-tied Solar Photovoltaic Systems.*

2012-2014: **Jawaharlal Nehru Technological University, Hyderabad (JNTUH), Vaagdevi College of Engineering, M. Tech., Power Electronics.**

2006-2010: **Jawaharlal Nehru Technological University, Hyderabad (JNTUH), Vaagdevi College of Engineering,**
B.Tech., Electrical and Electronics Engineering.

Experience

2018-2023: **Research Scholar,** Visvesvaraya National Institute of Technology, Nagpur, Maharashtra

2016-2018: **Ad hoc Lecturer,** Jawaharlal Nehru Technological University, Jagtial, Telangana State

2015-2016: **Assistant Professor,** Balaji Institute of Technology and Science, Warangal, Telangana state

2014-2015: **Assistant Professor,** Pathfinder Engineering College, Warangal, Telangana State

2011-2012: **Lecturer,** V.M.R Polytechnic College, Warangal, Telangana state

Projects

2018–2023: **Research Scholar (VNIT)**

Design and Analysis of High Gain DC-DC Converters for Grid-tied Solar Photovoltaic Systems.

- ✓ A high-gain soft-switching active clamped coupled-inductor-based converter for grid-tied PV system applications. This converter achieves high gain with a reduction in voltage stresses across the switches as well as diodes. Here, the coupled-inductor leakage energy is utilized.
- ✓ Further, a non-isolated high gain DC-DC converter based on Coupled inductor and built-in transformer with voltage multiplier module. In this circuit, the built-in transformer is employed in addition to the coupled inductor. This improves the design flexibility and enhances the voltage gain. Further, this converter provides both ZVS and ZCS soft switching operations. The performance of the proposed converters is verified through the laboratory prototypes.
- ✓ For battery storage application, a high gain step-up/ step-down bidirectional DC-DC converter has been designed and developed hardware prototype.
- ✓ The dynamic performance of the grid connected PV system with variation of PV input has been verified

wjth the proposed high gain converter through the OPAL-RT. The work is going on the high gain DC-DC converters to improve the performance of the PV system

2013-2014: **Master Student (VAGE),**

A High Step-Up Converter with a Voltage Multiplier Module for DG System

- ✓ The main idea of this project is to obtain high step-up gain by using a voltage multiplier module without extreme duty cycle. This converter is characterized with low input current ripple and reduced voltage stresses on MOSFET's.

2009-2010: **Graduation Student (VAGE),**

SVPWM Techniques and Application in HTS PMSM Machine Control

- ✓ The main idea of this project is to control a PMSM machine by controlling the output of an inverter by using SVPWM techniques. SVPWM is very efficient technique when compared to all other PWM techniques of an inverter. This project presents the MATLAB/SIMULINK-based simulation model by adopting the classical double closed loops

Computer Skills

- MATLAB
- Simulink
- Embedded coder (MATLAB)
- PSIM
- PVsyst
- Proteus (PCB)
- MS Visio
- Latex
- MS Office
- Adobe Illustrator

Hardware Skills

- Converters design
- Voltage and current sensors design
- Integrating sensors and converters for closed loop operation
- TI F28379D DSP controller coding using Embedded coder

Languages Known

English, Hindi and Telugu

Activities

- ✓ Awarded and appreciated for services rendered in organizing the activities during the 2019-2020 hosted by Visvesvaraya National Institute of technology, Nagpur, under, Rashtriya Avishkar Abhiyaan of MHRD, New Delhi.
- ✓ Awarded certification for learning to make own solar study lamp in the **Student Solar Ambassadors Workshop** organized globally on 2nd October 2019 to commemorate the 150th Birth Anniversary of Mahatma Gandhi.
- ✓ Participated in Five Days short Term Course on **“Resonant Converters and Applications”** held during 2nd – 6th July, 2018, in the department of Electrical Engineering, National Institute of Technology, Warangal. Telangana State, India.
- ✓ Presented a paper and bagged second prize on Energy storage Devices in Critical Power system in Technotrendzs'09 held at SR Engineering College & Technology, Warangal on 13th March 2009.
- ✓ Participated in The Regional Students Professional Awareness Congress-08 held at SR Engineering College on 27th & 28th December 2008.
- ✓ Participated in IEEE Zonal Student Congress presents UTSANG at Vaagdevi college of Engineering held on 13th & 14th December 2008.

Address

Door no: 4-52/27, Vinayaka Nagar, Dharoor Camp, Jagtial, Jagtial district, Telangana State.

Statement of Declaration

All the information provided above is true to the best of my knowledge.

Dt. 15/07/2023

Kaun Kokkonda