VADDEMANI GURU PRASAD REDDY

Senior Research Assistant, I.I.T Bombay

Mobile: +91-9494881228/7738706906

E-mail: guruprasaddgp@gmail.com

EXPERIENCE

- **Senior Research Assistant at I.I.T Bombay**   **[June-2015 to till date]**
    - Design and Development of PV based submersible BLDC(Brush Less Direct Current) motor controller for water pump application.(2016 July to till)
        - BLDC motor controller implemented with with TMS320F28069 Digital siganal controller.
        - The line voltage difference Back EMF Sensor less control strategy method Implemented.
        - Development of single stage PV fed BLDC Motor with MPPT(Maximum Power Point Tracking).
    - Multi frequency AC-DC grid (2015 June to 2016 June)
        - Literature for super imposed AC-DC Microgrid.
        - Simulation analysis for super imposed AC-DC Microgrid.
- **Project student at I.I.T Bombay**   **[Nov-2014 to May-2015]**
    - Modeling and simulation study of single phase grid connected Inverter.
    - Hardware implementation of grid connected inverter with Islanding detection
    - Hardware implementation of grid connected inverter with harmonic compensation

- **Summer intern at Axiom Energy Conversions Pvt.ltd , Hyderabad**   **[June to July-2012]**
    - R&D: (3 weeks) FLYBACK based SWITCH MODE POWERSUPPLY (SMPS) studied using MATLAB tool.
    - Quality Assurance: (2 weeks) Tested inwards raw material (Diodes, capacitors, etc.) and outwards Products (chargers, converters, etc.)
    - Production :(2 weeks) Technician at various sections (terminals soldering, hi pot test, etc.) for adapters.

ACADEMIC DETAILS

Qualification	Specialization	University	Year	CGPA/%
Master of Technology	Power Electronics & Drives	VIT University,Vellore, India	2015	8.39
Bachelor of Technology	Electrical & Electronics Engineering	JNTU Hyderabad, India	2013	75.13
Diploma	Electrical & Electronics Engineering	SBTET, AP (LOYOLA College)	2010	66.78
Matriculation(SSC)	Maths, Science, Social	State Bord of AP (SVH School,)	2007	72.67

AREAS OF INTEREST

- Grid integration of Renewable energy sources.
- Digital control of power electronics.
- Control of Drives for Electric Vehicles .

TECHNICAL SKILLS

Processors	:	TMS320F28069,TMS320F28335
Software/Tools	:	MATLAB/Simulink/Stateflow, PSCAD, LaTeX, PSIM, Code Composer Studio v5 , OrCAD, Diptrace
Programming Languages	:	Basic C Language
Operating Systems	:	Windows

M.Tech PROJECT

- **A Hybrid Active Islanding Detection Method for Grid Connected Single Phase Inverter**
(Co-Supervisor: **Prof. B.G.Fernandes**, I.I.T Bombay,
Supervisor: **Prof. Umashankar.S**, VIT University, Vellore)   **[M.Tech Dissertation]**

This project analyzes various possibilities of active/reactive power mismatch during grid disconnection and its impact on voltage amplitude and frequency at the Point of Common Coupling (PCC). An inverter based Distributed Generation (DG) system operating in constant power mode, interconnected with local RLC load and grid is considered for analysis. An active islanding detection technique based on the combination of Reactive Power Variation (RPV) and Positive Feedback Frequency Shift (PFFS) is implemented in this project. This technique eliminates Non Detection Zone (NDZ) and accelerates the speed of islanding detection with minimal degradation in inverter power quality. It involves:

- Simulation of grid connected PV Inverter with Islanding detection using MATLAB/Simulink .
- Synthesis of current control with PI and harmonic compensation loop.
- Modeling of single phase inverter in islanding and grid connected modes.
- Development of code for a digital signal controller to validate the above control schemes in a laboratory for grid and islanding connection.

OTHER PROJECTS

- **Autonomous control of interlinking converter for hybrid AC-DC micro grid**   [Jan-2014 to May-2014]
  (SET Conference, VIT University Supervisor: Prof. Kowsalya.M)

  - The PV and Battery are connected to the grid through Bi-directional DC-DC converter and inverter. During day time power is supplied to the grid, local load and energy is stored in battery. During night time power is supplied from the battery. If power is not available in the battery, the grid has to supply. In this control scheme droop control is implemented with MATLAB/Simulink.

- **Power investigation and control of PV-FC micro grid**   [July-2013 to Nov-2013.]
  (SET Conference, VIT University, Supervisor: Prof. Kowsalya.M)

  - PV and Fuel cell are modeled and connected to the grid. The power investigation control strategies are UPC (Unit Power Control) and FFC (Feeder Flow Control) are simulated by using MATLAB/SIMULINK. UPC control mode allows the PV work at its maximum power point, and FC to work within its high efficiency band. The dynamic load is connected as local load which will vary with respect to time. According to power requirement the reference power will be given from UPC control. FFC control mode also gives its reference power with respect to time according to feeder constraints.

- **Speed control of induction motor by using FUZZY plus PID controller**   [Jan-2013 to Apr-2013]
  (B.Tech Main Project, Supervisor: lekha chandran, VSME College, Hyderabad)

  - The speed of an Induction motor is controlled by using Fuzzy plus PID controller. The composite control mode PID controller is designed based on Ziegler-Nichols (Z-N) tuning technique. Fuzzy Logic Controller (FLC) is connected in series with the PID controller for the effective speed control especially for Direct Field-Oriented Induction Motor (DFOIM).

RELEVANT COURSES

- PE Applications in Renewable Energy sources
- Power Electronics Applications in Power Systems
- Micro controller & DSP Processor Applications in PE
- Generalized Machine Theory
- Analysis of converters & Inverters
- Solid State AC & DC Drives
- Modeling and Simulation of Power Electronics
- Special machines and control

WORKSHOPS/ INTERACTION WITH INDUSTRIES

- **AXIOM Energy Conversions Pvt.ltd, Hyderabad**

  - Familiarized with AC-DC and DC-DC Converter Design and Development.
  - Developing of BLDC controller for Electric Vehicles.

- **Nagarjuna Sagar Hydro power plant, AP**

  - Power Generation capacity of 950 MW

References

Prof.B.G.Fernandes,	Prof.Umashankar.S,
Department of Electrical Engineering,	School of Electrical Engineering,
I.I.T Bombay,	VIT University,
Mumbai, India.	Vellore, India.
bgf@ee.iitb.ac.in	shankarums@gmail.com

Personal Details

Date of Birth	:15-07-1992
Marital Status	:Single
Languages	:English, Hindi,Telugu, Tamil
Fathers Name	:VADDEMANI MADDILETI REDDY
Mothers Name	:VADDEMANI MALLAMMA
Permanent Address	:Duggannagari Palli, Vemula (Mandal), Kadapa (Dist), Andhra Pradesh, India, 516350.
Present Address	:Room-145,Hostel-9, IIT Bombay, Mumbai, Maharastra ,India, 400076.