

both simple and practical inverter has been simulated in MATLAB. Its various parameters for PI controller and parasitic has been calculated for Simulink modeling and then simulated. These parameters are varied and the resulting voltage and current graphs has been studied.

8. Future Work

The future work includes improving the stability of the system and also to study various instability in SPWM-VSI with harmonic analysis and ways to eliminate it and to design an actual household SPWM-VSI with a better controller design.

References

- [1] Ming Li, Dong Dai & Xikui Ma, "Slow-Scale and Fast-Scale Instabilities in Voltage- Mode Controlled Full-Bridge Inverter" Journal: Circuits Systems and Signal Processing - CIRC SYST SIGNAL PROCESS , vol. 27, no. 6, pp. 811-831, 2008.
- [2] Maswood. Ali.I& Al-Ammar. Essam "Analysis of a PWM Voltage Source Inverter with PI Controller under Non-ideal conditions" International Power Engineering Conference-IPEC,2010.
- [3] Anand. D & Jeevananthan .S "Modeling and Analysis of Conducted EMI Emissions of a Single-Phase PWM Inverters" Asian Power Electronics Journal, Vol. 4, No.3 December 2010.
- [4] Crowley. Ian. F & Leung. H. F "PWM Techniques: A Pure Sine Wave Inverter" Worcester Polytechnic Institute Major Qualifying Project, 2010.
- [5] Kim. J, Choi. J & Hong. H, "Output LC Filter Design of Voltage Source Inverter Considering the Performance of Controller" IEEE Conference Publications, 2000.
- [6] Lin.W.Song & Huang.I.Bau "Harmonic Reduction in Inverters by Use of Sinusoidal Pulse Width Modulation" IEEE Transactions on Industrial Electronics - IEEE TRANS IND ELECTRON , vol. IECI-27, no. 3, pp. 201-207, 1980
- [7] Gole.A.M "Harmonic Elimination in SPWM Inverter"1994, Halifax, Canada.
- [8] Rashid. M.H, "Power Electronics circuits devices and applications", PHI 3rd edition,2004 edition, New Delhi.
- [9] Bimbhra .P.S "Power Electronics" Khanna Publishers, New Delhi, 2003. 4th Edition
- [10] Mohan.N, Undeland.T&Robbins.W, "Power Electronics Converters applications and design"2nd edition, John Willey & sons, Singapore.

Author Profile



Sandeep Phogat is M.Tech scholar at Mewar University, Department of Electrical and Electronics Engineering, Chittorgarh, Rajasthan, India