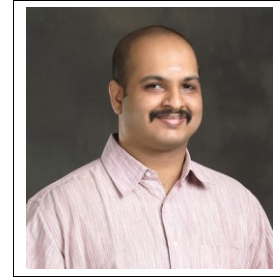




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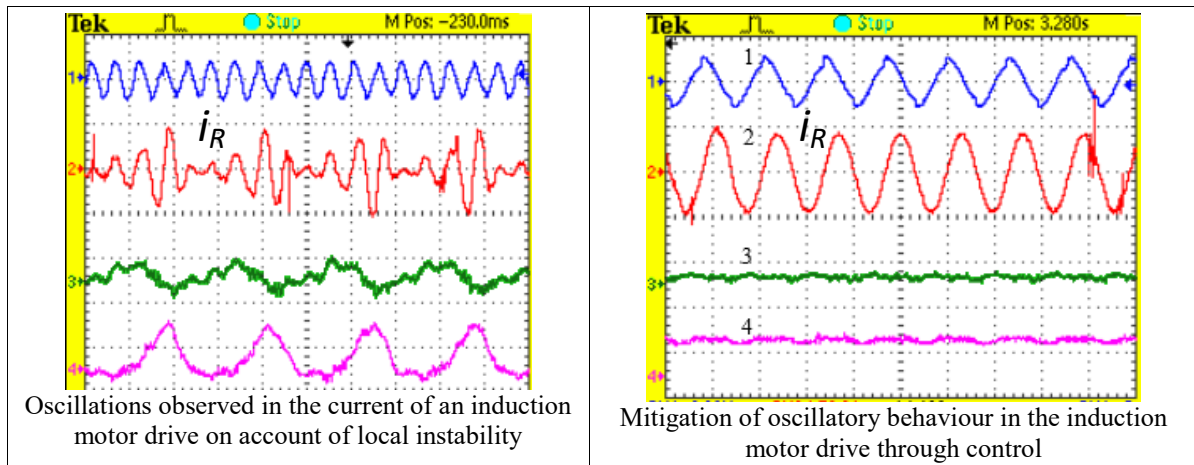
Research Interests

- Power Electronics
- Modulation and Control of Power Electronic Converters and Systems
- Modular Multilevel Converters and Applications
- Power Electronics for Renewable Integration, Power System Applications, Motor Drive Applications including Traction Applications and High Speed Drives

Brief Summary of Research

I work in the area of power electronics, and I am interested in modulation and control of power converters spanning across different applications. I work on issues relating to stability and control of practical induction motor drive systems that are typically used for pump and compressor applications. This requires detailed modelling of power converters including non-ideal effects arising from practical switching characteristics of power semiconductor devices. I have gained experience working on these issues as a research scholar at IISc Bangalore.

I also work with modular multilevel converter topologies and their control. These are converters typically intended for high-power applications such as HVDC and FACTS. I have experience working with modular multilevel converters from my stint as an R&D Engineer with ABB.



Recent Publications

- A. Guha and G. Narayanan, "Impact of under-compensation and over-compensation of dead-time effect on small-signal stability of induction motor drive", *IEEE Trans Ind. Appl.*, vol. 54, no.6, pp.6027- 6041, 2018
- A. Guha and G. Narayanan, "Impact of dead-time on inverter input current, dc-link dynamics and light-load instability in rectifier-inverter-fed induction motor drives," *IEEE Trans. Ind. Appl.*, vol.54, no.2, pp 1414-1424, 2018