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Research Interests

- Advanced Motor drives, Power converter control for renewable energy,
- Multilevel power converters and PWM techniques for power converters

Brief Summary of Research

I like to explore more in the area of multilevel converters for grid connected applications medium voltage motor drives. Currently I am working on various methods to reduce the inverter current ripple and switching loss by interleaved operation of converters, applying the new control techniques like model predictive control to improve the dynamics and operational aspects of motor drives and grid connected converters, analysing and designing hybrid pulse width modulation (PWM) techniques for reducing the switching loss etc.

<p>Open end winding induction motor drive topology</p>	<p>Open end winding induction motor drive implementation block diagram</p>	<p>Open end winding induction motor drive experimental setup</p>
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Recent Publications

- “Hybrid Space Vector Modulation Scheme for Dual Inverter Fed Open End Winding Induction Motor Drive for Improved Harmonic Distortion” Greeshma Nadh, Durga Nair S, Arun Rahul S, 8th IEEE India International conference on Power Electronics (IICPE- 2018) (December 2018)
- “Evaluation of Modulation Methods on Switching Loss, Common Mode Voltage and Current Ripple for an Open End Winding Induction Motor Drive” Greeshma Nadh, Durga Nair S, Arun Rahul S, IEEE International Conference on Sustainable Energy Technologies and Systems (ICSETS 2019) (Feb 2019)
- “Extending the Linear Modulation Range to the Full Base Speed Using a Single DC-Link Multilevel Inverter With Capacitor-Fed H-Bridges for IM Drives”, Arun Rahul. S, S. Pramanick, R. S. Kaarthik, K. Gopakumar, F. Blaabjerg, IEEE Transactions on Power Electronics 32 (7) 5450 - 5458 (2017)
- A Low-Order Harmonic Elimination Scheme for Induction Motor Drives Using a Multilevel Octadecagonal Space Vector Structure With a Single DC Source”, Mathews Boby, Arun Rahul S, K. Gopakumar, L. Umanand, Frede Blaabjerg, and Subhashish Bhattacharya, IEEE Transactions on Power Electronics 33 (3) 2430 - 2437 (2017)
- “Novel Symmetric 6-Phase Induction Motor Drive Using Stacked Multilevel Inverters with a Single DC Link and Neutral Point Voltage Balancing”, Viju Nair R, Arun Rahul S, S. Pramanick, K. Gopakumar; L. Franquelo, IEEE Transactions on Industrial Electronics 64 (4) 2663 - 2670 (2017)