

## Resume

1. Name and Designation: **DR. PRAMOD AGARWAL,  
Professor**
2. Date of Birth: **June 20, 1963**
3. Institution: **Indian Institute of Technology Roorkee,  
Roorkee**
4. Department: **Department of Electrical Engineering**
5. Field of Specialization: **Electrical Machines, Power Electronics,  
Microprocessors and Embedded Systems,  
Microcomputer Controlled AC/DC Drives,  
Computer Based Stability Analysis & Synthesis of  
Electric Drives, Active Filters, High Power Factor  
Converters, Multi Level Converters, UPQC,  
STATCOM, DC-DC Converters**
6. Academic Qualifications (High School onwards):

Sl. No.	Degree	University/ Institute	Division/ Equivalent	Year	Specialisation/ Subjects
1.	<b>High School</b>	<b>U.P. Board, Allahabad</b>	<b>I Div. 78.4%</b>	<b>1977</b>	<b>Hindi, English, Maths, Science, Geo. Drawing</b>
2.	<b>Intermediate</b>	<b>U.P. Board, Allahabad</b>	<b>I Div. 74.2%</b>	<b>1979</b>	<b>Hindi, English, Maths, Physics, Chemistry</b>
3.	<b>B.E.</b>	<b>University of Roorkee, Roorkee</b>	<b>I Div./ II Pos. C.G.P.A. = 3.85/4.00 (= 94.47%)</b>	<b>1983</b>	<b>Electrical Engineering</b>
4.	<b>M.E.</b>	<b>University of Roorkee, Roorkee</b>	<b>I Div./ I Pos. 85.8%</b>	<b>1985</b>	<b>Power Apparatus and Electric Drives</b>
5.	<b>Ph.D</b>	<b>University of Roorkee, Roorkee</b>	<b>---</b>	<b>1995</b>	<b>Electrical Engineering</b>
6.	<b>Post Doctoral Fellow</b>	<b>Ecole de technologie superieure, Department de genie electrique, Universite du Quebec, Montreal, Canada</b>	<b>---</b>	<b>1999 - 2000</b>	<b>Active Filters, High Power Factor Converters</b>

Title of B.E. Project:

**“Design, Fabrication and Testing of Single-phase Capacitor Start Variable Speed Induction Motor with Solid state Speed controller”**

Title of M.E. Dissertation:

**“Design, Fabrication and Performance Investigation of a Dual Converter Fed Variable Speed D.C. Drive System”**

Title of Ph.D Dissertation:

**“Microprocessor Controlled Current Source Inverter Fed Induction Motor Drive”**

#### **7. Industrial experience, if any:**

- (i) Undergone six week training at B.H.E.L., Bhopal during B.E. in 1982
- (ii) Visited various industries during teaching, some of them are:
  - (a) L&T, Bombay
  - (b) ABB, Bombay
  - (c) Crompton Greaves, Bombay,
  - (d) Wipro, Mysore and Bangalore
  - (e) Kirloskar, Bangalore
  - (e) B.H.E.L., Hardwar

#### **8. Award / Prize / Certificates etc.**

1. **Thomason Prize** for standing Second in B.E. (Electrical).
2. **University Gold Medal** for standing First in M.E. (Power Apparatus & Electric Drives).
3. **J.C. Mukhopadhyaya Silver Medal** for Best Student in M.E. (Electrical).
4. **Merit Scholarship** during 1977-79.
5. **University Merit Scholarship** during 1979-83.
6. **University Fellowship** during 1983-85.
7. **Certificate of Merit** award on a paper published in the Journal of Institution of Engineers (India) in 1994.
8. **“The Union Ministry of Energy: Department of Power Medal”** award on a paper entitled “Investigations of Static Slip Energy Recovery System Operated in Generating Mode” in the Journal of Institution of Engineers (India).
9. **“Pandit Madan Mohan Malviya Memorial Prize”** on a paper “Parameter Plane Synthesis of a Current Source Inverter Fed Induction Motor Drive” in the Journal of Institution of Engineers (India), March 2001.
10. Selected as one of the **Star Performer** by IIT Roorkee for the years 2001-2002 and 2002-2003.

11. Selected as one of the **Star Performer** by IIT Roorkee for the year 2003-2004.
12. Received '**Outstanding Teacher**' Award for the year 2003-2004 from IIT Roorkee.
13. Selected as one of the **Star Performer** by IIT Roorkee for the year 2004-2005.
14. Selected as one of the **Star Performer** by IIT Roorkee for the year 2005-2006.
15. Received '**Outstanding Teacher**' Award for the year 2007-2008 from IIT Roorkee.
16. "**The Railway Board Prize**" on a paper "Parameter Coordination of Microcomputer Controlled CSI Fed Induction Motor Drive" in the Journal of Institution of Engineers (India), December 2008.
17. Selected Fellow, Institution of Engineers, India in 2010.

## 9. Publications:

### (A) Number of Reports published: Two

- 1) "Survey of Harmonics" by Shailendra Jain, Pramod Agarwal, Hari Om Gupta, 2003.
- 2) "Design of Shunt Active Power Filter for Harmonics and Reactive Power Compensation", Shailendra Jain, Pramod Agarwal, Hari Om Gupta, 2003.

### (B) Books authored, if any:

- 1) A monograph on "**Power Electronics**" under Quality Improvement Programme during 1992-1993.
- 2) Web based lecture series developed for the following courses under **National Project on Technology Enhanced Learning (NPTEL)**:
  - A) **Basic Electronics**
  - B) **Analog Electronics**
- 3) Web based lecture series being developed for the following courses under **National Project on Technology Enhanced Learning (NPTEL)**:
  - A) **Power Electronics**
  - B) **Microprocessors**

### **(C) Research Papers published in National/ International Journals:**

#### **1987**

- 1) Agarwal Pramod, Verma V.K., "Parameter Plane Synthesis of a Dual Converter Fed Variable Speed D.C. Drive System", Electric Machines and Power Systems, Vol.12, No.1, 1987, pp 57-68.

#### **1988**

- 2) Singh Bhim, Naik K.B., Agarwal Pramod, Goyal Alok, "A Firing Circuit for Three-Phase Variable Frequency Thyristor Bridge Inverter", Institution of Engineers (India), Vol.68, Pt.EI.4, February, 1988, pp 111-115.

#### **1992**

- 3) Agarwal Pramod, Verma V.K., "Synthesis and Performance of a Digitally Controlled Current Source", Electric Machines and Power Systems, Vol.12, No.1, 1992, pp 149-160.
- 4) Agarwal Pramod, Verma V.K., "Performance Evaluation of Current Source Inverter Fed Induction Motor Drive", Institution of Engineers (India), Vol.72 Pt.EI.4, February, 1992, pp 209-217.
- 5) Agarwal Pramod, Verma V.K., "Microprocessor Based Firing Pulse Generator for PWM Current Source Inverter", Institution of Engineers (India), Vol.72 Pt.EI.4, February, 1992, pp 218-224.
- 6) Agarwal Pramod, Verma V.K., "Generalized Analysis of PWM CSI fed Induction Motor Drive", Institution of Engineers (India), Vol.73 Pt.EI.4, October, 1992, pp 205-217.

#### **1998**

- 7) Gupta S.P., Agarwal Pramod, Shanker Bhawani, "Investigations on Static Slip Energy Drive System Operated in Regenerative Mode", Institution of Engineers (India), Vol.79 Pt.EI.6, August, 1998, pp 98-102.

#### **2001**

- 8) Agarwal Pramod, Verma V.K., "Parameter Plane Synthesis of a Current Source Inverter Fed Induction Motor Drive", Institution of Engineers (India), Vol.81 Pt.EI.6, March, 2001, pp 211-219.

#### **2002**

- 9) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "A Fuzzy Logic Controlled Shunt Active Filter for Power Quality Improvement", IEE Proceedings, Electric Power Applications, Vol.149, No.5, September 2002, pp.317-328.

- 10) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "Simulation and Experimental Investigations on a Shunt Active Power Filter for Harmonics and Reactive Power Compensation", Journal of IETE Technical Review, New Delhi, Vol.19, No.3, May-June 2002.
- 11) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "Signal Conditioning for Harmonics and Reactive Power Compensation of Non-Linear Loads", Journal of Instrumentation Society of India, Vol.32, No.1, 2002, pp.24-32.

### **2003**

- 12) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "Design, Simulation and Experimental Investigations on a Shunt Active Power Filter for Harmonics and Reactive Power Compensation", Electric Power Components and Systems, Vol.31, No.7, July 2003, pp 671-692.
- 13) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "Simulation and Experimental Investigations on a Shunt Active Power Filter for Harmonics and Reactive Power Compensation", Journal of IETE Technical Review, New Delhi, Vol.20, No.6, Nov-Dec 2003.
- 14) Tiwari Amar Nath, Agarwal Pramod, Srivastava S.P., "Modified Hysteresis Controlled PWM Rectifier", IEE Proceedings, Electric Power Applications, Vol.150, No.4, July 2003, pp.389-396.

### **2004**

- 15) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "A Control Algorithm for Compensation of Customer Generated Harmonics and Reactive Power" IEEE Transactions on Power Delivery, Vol.19, No.1, January 2004, pp.357-366.

### **2005**

- 16) Jain Shailendra Kumar, Agarwal Pramod, Gupta H.O., "A Dedicated Microcontroller Based Fuzzy Logic Controlled Shunt Active Power Filter for Power Quality Improvement", Special Issue on 'Fuzzy Logic Control' of Intelligent Automation & Soft Computing, Vol.11, No.1, 2005, pp-31-43.

### **2007**

- 17) Dubey Rahul, Agarwal Pramod, Vasantha M.K., "Programmable Logic Devices for Motion Control-A Review", IEEE Transaction on Industrial Electronics, Vol.54, No.1, February 2007, pp 559-566.
- 18) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Indian Standard IS 325: A Review", Engineering Advances Magazine, Vol.19, No.4, April 2007, pp 24-32.

- 19) Agarwal Pramod, Srivastava S.P., "Implementation of Multilevel Inverter Using PC", Institution of Engineers (India), Vol.88, September, 2007, pp 52-77.
- 20) Agarwal, Pramod, Verma, V.K., "Parameter Coordination of Microcomputer Controlled CSI fed Induction Motor Drive", Institution of Engineers (India), Vol.88, December, 2007, pp 25-34.

## **2008**

- 21) Thanga Raj C, Srivastava S.P., Agarwal Pramod, "Deviations in the Performance of a Three-phase Induction Motor Under Different Unbalanced Phase Voltages with Same Unbalance Factor", i-Manager's Journal of Electrical Engineering, Vol.1, No.3, January-March 2008, pp 7-12.
- 22) Thanga Raj C, Srivastava S.P., Agarwal Pramod, "Industrial Applications for Induction Motors-Situation Analysis", Electrical India Magazine (India), Vol.48, No.3, March 2008, pp 70-73.
- 23) Bhalodi Kalpesh, Pramod Agrawal, "Modified Space Vector Modulation for DC-Link Voltage Balancing of Three-Level Inverter", International Journal of Power Electronics, Vol.1, No.1, 2008, pp 1-17.
- 24) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Differential Evolution Based Optimal Control of Induction Motor Serving to Textile Industry", IAENG International Journal of Computer Science, Vol.35, Issue 2, June 2008, pp 201-208.
- 25) Bhat Abdul Hamid, Kumar T.V.V.S. Ravi, Agarwal Pramod, "Direct Power Modulation Control of Three-Phase Four Switch Bidirectional Interface", IETE Journal of Research, Vol.54, Issue 5, Sept-Oct 2008, pp 328-333.
- 26) Bhat Abdul Hamid, Reddy D. Amarnath, Agarwal Pramod, "Implementation of Space Vector Based Hysteresis Current Control for a Three-Phase High Power Rectifier", IETE Journal of Research, Vol.54, Issue 5, Sept-Oct 2008, pp 337-345.
- 27) Thanga Raj C, Srivastava S.P., Agarwal Pramod, "Optimal Design of Poly-Phase Induction Motor Using Particle Swarm Optimization", i-manager Journal of Electrical Engineering (India), Vol.1, No.4, April 2008, pp 45-50.
- 28) Parthiban, P., Agarwal, Pramod, Srivastava, S.P., "Duty Ratio Based Space Vector Modulation for Current Source Inverter Fed Induction Motor Drive", i-Manager's Journal of Electrical Engineering, Vol.1, No.4, April-June 2008, pp 51-56 .
- 29) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Particle Swarm Optimized Design of Poly-Phase Induction Motor with the Consideration of Unbalanced Supply Voltages", International Journal of Mathematical Modeling, Simulation and Applications (India), Vol.1, No.3, 2008, pp. 339-350.
- 30) Vadirajacharya. K, Agarwal Pramod and Gupta. H.O, "Performance Evaluation of CSI Based Unified Power Quality Conditioner Using Artificial Neural Network", International Journal of Power Electronics, Inderscience Publishing House, Vol. No.1, 2008, pp 17-32.
- 31) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Induction Motor Design with Limited Harmonic Currents using Particle Swarm Optimization",

International Journal of Electrical Systems, science and Engineering, Vol1., No.3, 2008, pp 201-207.

- 32) Agarwal Pramod, Pandey A.K., Verma V.K., "Performance Evaluation of Self-Commutated CSI-fed Induction Motor Drive for Different Operating Conditions", Journal of Institution of Electronics and Telecommunication Engineers (IETE), Vol54, Issue 4, July-August 2008, pp 229-238.
- 33) Bhat Abdul Hamid, Agarwal Pramod, "Three-Phase Power Quality Improvement AC/DC Converters: A Review", International Journal of Electric Power System Research (EPSR)-Elsevier, Vol.78, issue 2, February 2008, pp276-289.
- 34) Chaturvedi Pradyumn Kumar, Jain Shailendra K, Agarwal Pramod, Nema R.K., Sao K.K., "Switching Losses and Harmonic Investigations in Multilevel Inverters", Institution of Electronics and Telecommunication Engineers (IETE) Journal of Research, Vol.54, Issue 4, July-August 2008, pp 297-307.
- 35) Parthiban, P., Agarwal, Pramod, Srivastava, S.P., "Control of Current Source Converter Using Space Vector Modulation", International Engineering and Technology (IETECH) Journal of Electrical Analysis, Vol.2, No.2, 2008, pp 83-86.

## **2009**

- 36) Raja A.Thilak, Agarwal Pramod, Choudhuri S. G., "Vector Controlled Induction Motor Drive and Direct Torque Controlled Induction Motor Drive: A Comparative Study", The Icfaci University Journal of Electrical and Electronics Engineering, Vol.II, No.2, April 2009, pp 28-46.
- 37) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Realization on Particle Swarm Optimized Design of Induction Motor via SPEED/PC-IMD", Engineering Letters, Vol.16, No.4, 2008, pp 486-492.
- 38) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Particle Swarm and Fuzzy Logic Based Optimal Energy Control of Induction Motor for a Mine-Hoist Load Diagram", IAENG Int, Journal of Computer Science, Vol.36, No.1, 2009, pp 17-25.
- 39) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Energy Efficient Control of Three-Phase Induction Motor: A Review", International Journal of Computer and Electrical Engineering, Vol.1, No.1, 2009, pp 61-70.
- 40) Kumar Jagdish, Das B., Agarwal Pramod, "Harmonic Reduction Technique for a Cascade Multilevel Inverter", International Journal of Recent Trends in Engineering, ACEEE, Vol.1, No.3, May 2009, pp-181-185.
- 41) Agarwal Pramod, Pandey A.K., Verma V.K., "Performance Investigation of Modified Self-Commutated CSI-fed Induction Motor Drive", Asian Power Electronics Journal, Vol3., No.1, September 2009, pp. 21-29.
- 42) Kumar Jagdish, Das B., Agarwal Pramod, "Modeling of 11-level Cascade STATCOM", International Journal of Recent Trends in Engineering, ACEEE, Vol.2, No.5, November 2009, pp-352-356.
- 43) Agarwal Pramod, Pandey A.K., Verma V.K., "Implementation of SVM Technique in Modified Self-Commutating CSI-Fed Induction Motor Drive", Journal of Institution of Engineers (India), Vol.90, December 2009, pp11-17.

- 44) Bhat Abdul Hamid, Agarwal Pramod, "Implementation of a Neural-Network Based Space Vector PWM for a Three-Phase Neutral-Point Clamped High Power-Factor Converter", *Electric Power Components and Systems*, Vol.37, Issue 2, February 2009, pp 210-233.
- 45) Bhat Abdul Hamid, Agarwal Pramod, "DSP Based Implementation of Space Vector Modulated Three-Phase Neutral Point Clamped Power Factor Correction Rectifier", *IET Power Electronics*, Vol.2, issue 4, 2009, pp 375-386.
- 46) Bhalodi Kalpesh, Pramod Agrawal, "Space Vector Modulation with DC-Link Voltage Balancing for Three-Level Inverter", *International Journal of Recent Trends in Engineering*, ACEEE, Academy Press, Vol.1, No.3, May 2009, pp 229-233.
- 47) Bhat Abdul Hamid, Agarwal Pramod, "A Fuzzy Logic Controlled Three-Phase Neutral-Point Clamped Bidirectional PFC Rectifier", *IETECH Journal of Electrical Analysis*, Vol.3., No.1, 2009, pp 001-007.

## **2010**

- 48) Kumar Jagdish, Das B., Agarwal Pramod, "Optimized Switching Scheme of a Cascade Multilevel Inverter", *Electrical Power Components and Systems*, Vol.38, issue 4, January 2010, pp-445-464.
- 49) Kumar Jagdish, Agarwal Pramod, Das B., "Implementation of Cascade Multilevel Inverter Based STATCOM", *IETE Journal of Research*, Vol.56, Issue 2, March-April 2010, pp-119-128.
- 50) Tiwari, Amar Nath, Agarwal, Pramod, Srivastava, S.P., "Performance Investigation of Modified Hysteresis Controller with Permanent Magnet Synchronous Motor Drive", *IET Electrical Power Applications*, Vol.4, issue 2, 2010, pp.101-108.
- 51) Sreenivasarao D, Agarwal P, and Das B, "A Carrier-Transposed Modulation Technique for Multilevel Inverters," in *proc. PEDES and 2010 Power India*, Dec. 2010, pp.1-7.
- 52) Banerjee P., Das B., Agarwal Pramod, "Distribution Grid Voltage Control using Cascaded Multilevel Inverter based STATCOM", *Electric Power Components and Systems*, Vol.38, Issue 12, October 2010, pp.1389-1405.

## **2011**

- 53) Waware Madukar, Agarwal Pramod, "A Review of Multilevel Inverter Based Active Power Filter", *International Journal of Computer and Electrical Engineering*, Vol.3, No.2, April 2011, pp.196-205.
- 54) Waware Madukar, Agarwal Pramod, "Application of Seven Level Multilevel Inverter for Harmonic Suppression in High Power Systems", *IST Transactions of Electrical and Electronic Systems-Theory and Applications*, IST Press, Canada, Vol.1, No.1, July 2011, pp. 21-27.
- 55) Subhash Kumar Joshi, Hari Om Gupta, Pramod Agarwal; "Modeling of Multi-Phase Transformer – Equivalent Circuit"; *International Review on Modeling and Simulation*, *International Review on Modelling and Simulation (IREMOS)*; Vol 4, No 5; Oct'2011; pp. 2164-2171.



- 56) Subhash Chander, Pramod Agarwal, and Indra Gupta, "Tightly Regulated Single Input, Triple-Output (SITO) Synchronous DC-DC Converter for Low Voltage Applications" International Review on Modelling and Simulations (IREMOS), Vol. 4, No. 3, June 2011, pp. 1024-1034.
- 57) Subhash Chander, Pramod Agarwal, and Indra Gupta, "Sliding Mode Control of Buck Converter for Low Voltage Applications," International Review of Automatic Control (IREACO), Vol.4, No.5, September 2011.
- 58) Agarwal Pramod, Pandey A.K., Verma V.K., "Parameter Plane Synthesis of Modified Self-Commutating CSI fed Induction Motor Drive", International Journal of Power Electronics, Vol.3, No.4, 2011, pp.345-373.
- 59) Chaturvedi Pradyumn Kumar, Jain Shailendra K, Agarwal Pramod, Nema R.K., Sao K.K., "A Simple Carrier Based Neutral Point Potential Regulator for 3-level Diode Clamped Inverter", International Journal of Power Electronics, Vol.3, No.1, 2011, pp.1-25.
- 60) Jain Shailendra K, Agarwal Pramod, Chaturvedi Pradyumn Kumar, "Reduced Switching Loss Pulse Width Modulation Technique for Three-Level Diode Clamped Inverter", IET, Power Electronics, Vol.4, Issue.4, April 2011, pp.393-399.
- 61) Vadirajacharya. K, Agarwal Pramod and Gupta. H.O, "Performance Investigation of Neural Network Based Unified Power Quality Conditioner", IEEE PES Transactions on Power Delivery, Vol.26, No.1, January 2011, pp.431-437.
- 62) Waware Madukar, Agarwal Pramod, "Artificial Neural Network Controlled Multilevel Inverter Based Active Power Filter for High Voltage Systems", UTM-Elektrika, Journal of Electrical Engineering, Vol.13, No.2, pp.21-23.
- 63) Maurya Rakesh, Srivastava S.P., Agarwal Pramod, "Design and Implementation of Transformer –less Multi Output DC Power Supply. International Review of Electrical Engineering, Vol.6, No.7, November-December 2011, pp. 2910-2918.

## **2012**

- 64) Subhash Kumar Joshi. Pramod Agarwal,. Hari Om Gupta; "Operational Adversities of Transformers"; W&E Digest (Energy Section), Water International, Jan'2012; pp 44-48.
- 65) Subhash Chander, Pramod Agarwal, and Indra Gupta, "Design and implementation of Field Programmable Gate Array based DPWM for synchronous buck converter," Journal of Low Power Electronics, vol.8, April 2012, pp.158-169.
- 66) Ambarisha Mishra , Pramod Agarwal, S.P.Srivastava "Brief Analysis and Field Oriented Control of Permanent Magnet Synchronous Motor Drive," Vivechan International Journal of Research vol.3, pp. 53-69, 2012.
- 67) J. A. Makwana, Ambarish Mishra, Pramod Agarwal and S.P. Srivastava, " Implementation of Low Cost Switched Reluctance Motor Drive using RT Lab", International Journal of Engineering Science & Advanced Technology, Vol-02 ISS-04,pp- 772-780, Jul-Aug 2012.

- 68) D. Sreenivasarao, Pramod Agarwal, Biswarup Das, "Neutral current compensation in three-phase, four-wire systems: A review," Electric Power Systems Research, vol. 86 pp. 170–180, May 2012.

### **Accepted Papers**

1. Madhukar Waware and Pramod Agarwal, "Hardware Realization of Multilevel Inverter based APF", Accepted for publication in IETE Journal of Research.
2. Ambarisha Mishra, Pramod Agarwal and S.P.Srivastava "A Comprehensive Analysis and Implementation of Vector Control of Permanent Magnet Synchronous Motor," Accepted for publication in International Journal of Power and Energy Conversion.
3. Jignesh A. Makwana, Pramod Agarwal and S.P Srivastava, "Design and Development of openloop CGSM for SR motor", Accepted for publication in Journal of Scientific and Industrial Research.
4. Bhat Abdul Hamid and Agarwal Pramod, "Synthesis and Performance Investigation of a Digitally Controlled Three-phase Neutral Point Clamped Rectifier" Accepted for publication in IET-Power Electronics.
5. Chaturvedi Pradyumn Kumar, Jain Shailendra K and Agarwal Pramod, "Opportunities of Common Mode Voltage Control Using Carrier Based Techniques in Three-Level Diode Clamped Inverter", Accepted for publication in The Journal of Advances in Power Electronics.

### **(D) Research Papers Communicated for Publications:**

- 1) Tiwari, Amar Nath, Agarwal, Pramod, Srivastava, S.P., "Performance comparison of PMSM drive with optimized PI gains and Fuzzy-PI input scale factors using Genetic Algorithm" IEE Proceedings, Electric Power Applications.
- 2) Tiwari, Amar Nath, Agarwal, Pramod, Srivastava, S.P., "Controller Design and Simulation of PMSM Drive" IETE Journal of Research, India.
- 3) Kumar Jagdish, Das B., Agarwal Pramod, "System Identification Based Direct Voltage Control in Distribution System Using Cascade Multilevel Inverter Based STATCOM", IEEE Transactions on Power Delivery.
- 4) Bhalodi Kalpesh, Pramod Agrawal, "Modified Three-Level Inverter Based Space Vector Modulation Scheme with DC-Link Voltage Balancing and Extended Operation in Overmodulation for Induction Motor Drive", IEEE proceedings on Industrial Electronics.
- 5) Bhalodi Kalpesh, Pramod Agrawal, "Generalized n-level Space Vector Modulation with Extended Operation in Overmodulation", IET proceedings on Power Electronics.
- 6) Parthiban, P., Agarwal, Pramod, Srivastava, S.P., "Steady State Analysis of SVPWM CSI fed IM Drive", International Journal on Power Electronics, Inderscience.
- 7) Parthiban, P., Agarwal, Pramod, Srivastava, S.P., "Simulation of Direct Vector Controlled CSI fed IM Drive", Asian Power Electronics Journal.

- 8) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Performance Based Optimal Design of Induction Motor using SPEED/PC-IMD and PSO", *International Journal of Optimization and Engineering*.
- 9) Thanga Raj C, Agarwal Pramod, Srivastava S.P., "Induction Motor Design with Ideal and Non-Ideal Power Supply using Particle Swarm Optimization", *IEEE Transaction on Magnetics*..
- 10) Chatterjee Abir, Agarwal Pramod, "Comparative Analysis of FOC and Direct Torque Controlled Matrix Converter fed Induction Motor Drive", *Journal of Institution of Electronics and Telecommunication Engineers (IETE)*.
- 11) Waware Madukar, Agarwal Pramod, "Multilevel Inverter Based Active Power Filter for High Voltage Systems", *International Journal of Power Electronics (IJPELEC)*.
- 12) Chandra Subhash, Agarwal Pramod, Gupta Indra, "FPGA and ASIC based DPWM Architectures for DC-DC Converter: A Review", *IET Power Electronics*.
- 13) Joshi Subhash, Agarwal Pramod, Gupta H.O., "Energy Efficient Grading for Distribution Transformers", *Electric Power Components & Systems*, Taylor-Francis.
- 14) Subhash Chander, Pramod Agarwal, and Indra Gupta, "ASIC and FPGA based DPWM architectures for single-phase DC-DC converter: A Review," under review, *Central European Journal of Engineering*.
- 15) Madhukar Waware and Pramod Agarwal, "Performance investigation of Multilevel Inverter based APF using Space vector Modulation" communicated to *IEEE Transactions on Industry Applications*.
- 16) Waware M.M, Pramod Agarwal, "Multilevel Inverter Based Active Power Filter Using Space Vector Modulation", communicated to *IECON 2012*,
- 17) Jignesh A. Makwana, Ambarish Mishra, Pramod Agarwal and S.P. Srivastava, "Performance Investigation and Analysis of Low Cost Low power SRM drive", *International Journal of Electrical Power and Energy*.
- 18) Jignesh A. Makwana, Pramod Agarwal and S.P. Srivastava, "Real Time Speed Control of Switched Reluctance Motor Drive using RT-Lab", *International Review of Electrical Engineering*.
- 19) Madhukar Waware and Pramod Agarwal, "Application of Seven Level Multilevel Inverter for harmonic Suppression in High Power Systems", in *IST Transactions of Electrical and Electronic Systems-Theory and Applications*, IST Press, Canada.
- 20) Rakesh Maurya, S.P. Srivastava, and Pramod Agarwal, " Design and Analysis of 12- Pulse Converter for Low Voltage High Current Applications", communicated to *International Journal of Power and Energy Systems*
- 21) Subhash Chander, Pramod Agarwal, and Indra Gupta, "ASIC and FPGA based DPWM architectures for single-phase DC-DC converter: A Review," under review, *Central European Journal of Engineering*.
- 22) Trivedi Tapan, and Agarwal Pramod, "FPGA Based Implementation of Simplified SVPWM Algorithm for Multilevel Inverter Fed Open Loop Variable Frequency Drive", *IET Transaction on Power Electronics*.
- 23) Wilson Vineeth, Agarwal Pramod and Srivastava S.P., "A Study on DSP Based Control of PMSM Drive", *IET Transaction on Power Electronics*.

**(E) Research Papers published/presented in National/ International conference/ conference proceeding:**

**1986**

- 1) Agarwal, Pramod, Verma, V.K., "A Novel Firing Scheme for Thyristor Dual Converter", Conference of IAS Annual Meeting 1986.

**1995**

- 2) Gupta, S.P., Agarwal, Pramod, Shanker, Bhawani, "Development of an Experimental Static Slip Power Recovery Drive", All India Seminar on Electronics-Industrial Applications, April 1995.

**1997**

- 3) Agarwal, Pramod, Verma, V.K., "A New Approach for Reduction of Torque Pulsations in CSI Fed Induction Motor Drive", Conference on Computer Applications in Electrical Engineering, (CERA-97), September 8-11, 1997 held at University of Roorkee, Roorkee, pp.71-76.
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- 108) Subhash Chander, Pramod Agarwal, and Indra Gupta,"Design, Modeling and Simulation of DC-DC Converter for Low voltage Applications," The 2<sup>nd</sup> IEEE International Conference on Sustainable Energy Technology ICSET-2010, SriLanka, December, 2010.
- 109) Subhash Chander, Pramod Agarwal, and Indra Gupta,"FPGA-based PID Controller for DC-DC Converter," The 7<sup>th</sup> International Conference PEDES-2010, New Delhi-INDIA, December, 2010.
- 110) Subhash Chander, Pramod Agarwal, and Indra Gupta," Auto-tuned, Discrete PID Controller for DC-DC Converter for fast transient response," International Conference on Power Electronics IICPE-2010, New Delhi-INDIA, January, 2011.
- 111) Waware Madukar, Agarwal Pramod, "Comparison of Control Strategies for Multilevel Inverter Based Active Power Filter Used in High Voltage Systems", in Joint International Conference on Power Electronics, Drives and Energy Systems & Power India, New Delhi, December 2010, pp.1-6.
- 112) Waware Madukar, Agarwal Pramod, "Performance Investigation of Multilevel Inverter Based Active Power Filter in Distorted High Voltage Supply System", in Proc. of 2<sup>nd</sup> International Conference on IEEE Sustainable Energy Technologies (ICEST), Sri Lanka, December, 2010, pp.1-6.
- 113) Sreenivasarao D, Agarwal P, and Das B, "A Carrier-Transposed Modulation Technique for Multilevel Inverters," in proc. PEDES and 2010 Power India, Dec. 2010, pp.1-7.

## **2011**

- 114) Subhash Kumar Joshi, Hari Om Gupta, Pramod Agarwal; Modelling of Three Transformers – Equivalent Circuit"; TRAFOSEM 2011; International Workshop on Transformers; New Delhi, 21<sup>st</sup> and 22<sup>nd</sup> Nov'11; Misc. pp.83-88.
- 115) Subhash Kumar Joshi, Hari Om Gupta, Pramod Agarwal, Ganesh Kumbhar; "Field Investigations On Harmonic Pollution Affecting Transformers"; 2<sup>nd</sup> International Colloquium –Transformer Research and Asset Management, Cigre, SC-A2 ;Dubrovnik, Croatia, May 16-18,2012. Paper No TML09, pp. 1-10.
- 116) Subhash Kumar Joshi, Pramod Agarwal, Hari Om Gupta; "Investigation Into Operation of Transformers"; Technology Trends in Power Transformer, CBIP-Cigre Workshop on Transformer, New Delhi; 11-12<sup>th</sup>, Nov'2011; pp 13-50.

- 117) Subhash Chander, Pramod Agarwal, and Indra Gupta, "Auto-tuned, discrete PID controller for DC-DC converter for fast transient response," Proceeding of International Conference on Power Electronics (IICPE), pp. 1-7, New Delhi, INDIA, Jan 2011.
- 118) Jignesh A. Makwana, Pramod Agarwal, Member, IEEE and S.P. Srivastava, "Novel simulation approach to analyses the performance of in-wheel SRM for an electrical vehicle" Energy, Automation, and Signal (ICEAS), 2011 IEEE International Conference on, pp; 187 – 191, 2011.
- 119) Jignesh A. Makwana, Pramod Agarwal and S.P. Srivastava, "ANN Based Sensorless Rotor Position Estimation for the Switched Reluctance Motor", 2nd IEEE International Conference on Current Trends in Technology, Dec 2011.
- 120) Rakesh Maurya, Pramod Agarwal and S.P.Srivastava," Performance Investigation of Multipulse Converter for Low Voltage High Current Applications ", accepted for publication in proceedings of IEEE International Conference on Computer Science and Automation Engineering (CSAE 2011) at Shanghai June 10-12, 2011.

## **2012**

- 121) Vasundhara Mahajan, Pramod Agrawal and Hari Om Gupta, "Simulation of Instantaneous Power Theory for Active Power Filter", ICPCES 2012, MNIT Allahabad, India.
- 122) A. Mishra, J. A. Makwana, P. Agarwal, and S. P. Srivastava, "Modeling and implementation of vector control for PM synchronous motor drive," in IEEE-International Conference on Advances in Engineering, Science and Management (ICAESM), 2012, pp. 582-585.
- 123) Ambarisha Mishra, Jignesh A. Makwana, Pramod Agarwal, and S.P. Srivastava "Mathematical Modeling and Fuzzy Based Speed Control of Permanent Magnet Synchronous Motor Drive," The 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA 2012) Singapore, 2012 (accepted and presented).
- 124) Ambarisha Mishra , Pramod Agarwal, S.P.Srivastava, "Fuzzy Logic Based Speed and Current Control of Vector Controlled PMSM Drive," 2<sup>nd</sup> International Conference on Power, Control and Embedded Systems (ICPCES-2012), MNIT Allahabad, 2012 (accepted).
- 125) Jignesh A. Makwana, Ambarish Mishra, Pramod Agarwal and S.P. Srivastava, "Sensorless Control of Switched Reluctance Motor Drive: An Analytical Method", IEEE – International Conference on Advances in Engineering, Science and Management March 2012.
- 126) Waware M.M, Pramod Agarwal, "Multilevel Inverter Based Active Power Filter Using Space Vector Modulation", IECON 2012.
- 127) Wilson Vineeth, Agarwal Pramod and Srivastava S.P., "Performance Investigation of DSP Based Self-Controlled PMSM Drive", International Conference on Power Engineering and Renewable Energy (ICPERE), IEEE, July 3-5, 2012.

#### **(F) Research Papers Communicated to Conference:**

- 128) Sunil Kumar, Srivastava S.P., Agarwal Pramod, "Voltage Regulation of Self-Excited Induction Generator Using STATCOM", 3<sup>rd</sup> IEEE International Conference on Sustainable Energy Technologies.
- 129) Ahuja Pallavi and Agarwal Pramod, "Comparative Analysis of Single-Phase Multilevel AC/DC Converter", International Conference on Advances in Electronics, Electrical and Computer Science Engineering (EEC 2012).
- 130) Srivatsav C.N., Agarwal Pramod and Das Sharmili, "Comparative Analysis of Hybrid Power Filter Topologies with Distorted Source Voltage", IEEE 5<sup>th</sup> India International Conference on Power Electronics (ICPE 2012), Delhi, December 2012.
- 131) Wilson Vineeth, Agarwal Pramod and Srivastava S.P., "A Study on DSP Based Control of PMSM Drive", International Conference on Power Electronics, Drives and Energy Systems (PEDES), IEEE, December 16-19, 2012.

#### **10. List of Projects Guided:**

1. "Microprocessor Based Current Source Inverter Fed Induction Motor Drive", 1986.
2. "Microprocessor Based Chopper Controlled D.C. Drive System". 1986.
3. "Microprocessor Based Speed Control of Single-phase Induction Motor", 1986.
4. "Microprocessor Based Single-phase Dual Converter Fed D.C. Drive", 1987.
5. "Microprocessor Based Transistorized Chopper Controlled D.C. Drive", 1987. **(Won Best B.E. Project Award).**
6. "Fourth Leg Commutated CSI Fed Induction Motor Drive", 1987.
7. "Microprocessor Based Chopper Commutated Current Source Inverter Fed Induction Motor Drive", 1988.
8. "Microprocessor Based Kramer Speed Control of Induction Motor", 1988.
9. "Development of Various Configurations of Converters for D.C. Motor speed Control", 1988.
10. "Microprocessor Based Voltage Source Inverter Fed Induction Motor Drive", 1988.
11. "Microprocessor Based Current Commutated Multi-phase Chopper Fed D.C. Motor Drive", 1988.
12. "Design, Development and Testing of 8085 Based Chopper Fed Variable Speed D.C. Motor Drive", 1989.
13. "Design, Development and Testing of 8086 Based Current Source Inverter Fed Induction Motor Drive", 1989.
14. "Design, Development and Testing of Microprocessor Based Dual Converter Fed D.C. Motor drive", 1989.
15. "Design, Development and Testing of 8085 Based Current Source Inverter Fed Induction Motor Drive", 1989.
16. "Microprocessor Based Slip Energy Recovery Induction Motor Drive with Controlled Fly wheeling", 1989.



17. "P.C. Based Speed Control of D.C. Motor Drive", 1990  
**(Won Second Prize in STEP BE Project Awards).**
18. "Microprocessor Based Dedicated System for Speed Control of D.C. Motor with Improved Input Power Factor", 1990.
19. "Design and Fabrication of a Movable Robot Arm", 1990.
20. "Development of Software for P.C. Based Robot Arm Control (Vehicle and Gripper)", 1991.
21. "Design and Fabrication of Microprocessor Based Dedicated System for an Induction Motor Drive", 1991.
22. "Design and Fabrication of Microprocessor Based Dedicated System for Speed Control of D.C. Motor", 1991.
23. "Design and Fabrication of Single-chip Microprocessor Based Current Source Inverter", 1991.
24. "Design and Fabrication of a Dedicated Microcontroller Based Single-phase Converter Fed D.C. Motor Speed Controller", 1993.
25. "Design and Fabrication of a Motorola 68000 Based Single-phase PWM Converter", 1993.
26. "Design and Development of Motorola 68000 Based Two-quadrant Chopper Fed D.C. Drive", 1994.
27. "Design and Fabrication of Single-chip Microcontroller Based Three-phase PWM Converter Fed D.C. Motor Drive", 1994.
28. "Design, Fabrication and Development of Dedicated 8085 Based Generalized Converter", 1994.
29. "Design and Fabrication of Dedicated 8085 Based Current Source Inverter Fed Induction Motor Drive", 1995.
30. "Design and Development of Motorola 68000 Based Four-quadrant Chopper Fed D.C. Drive", 1995.
31. "Design and Fabrication of Dedicated 8088 Based Three-phase A.C Regulator Fed Induction Motor Drive", 1995.
32. "Design and Fabrication of Dedicated Microcontroller 8031 Based Single-phase PWM Dual converter Fed D.C. Drive", 1996.
33. "Design and Fabrication of Dedicated 8085 Based Single & Poly Phase Chopper Fed D.C. Motor drive", 1996.
34. "Design, Fabrication and Simulation of Dedicated 8031 Based Generalized Converter", 1996.
35. "Design and Fabrication of Dedicated 8088 Based 12 Pulse Converter Fed D.C. Motor Drive", 1996.
36. "Design & Development of Dedicated 8031 Based Single Phase AC Regulator Employing Sequence Control", 1996.
37. "Design & Development of Motorola 68000 Based Generalized Single-phase Inverter", 1996.
38. "Design and Fabrication of Dedicated Z-80 Based Chopper Fed D.C. Drive", 1997. **(Won Certificate of Merit Prize in STEP B.E. Project Awards).**
39. "Design and Fabrication of Motorola 68000 Based Generalized Inverter", 1997.
40. "Design & Development of Dedicated 8031 Three Phase AC Regulator Fed Induction Motor Drive", 1997. **(Won Second Prize in STEP B.E. Project Awards).**

41. "Design and Control of PC Based Multi-quadrant Robotic Arm", 1997.
42. "Design and Development of Dedicated 8031 Based Generalized Current Source Inverter Fed I.M. Drive", 1997.
43. "Design and Development of Dedicated 8085 Based Generalized Chopper Fed D.C. Drive", 1997.
44. "Simulation and Development of 8031 Based Generalized Chopper Fed D.C. Drive", 1998.
45. "Design and Development of Z-80 Based Multi-mode Single-phase Dual Converter", 1998.
46. "Design and Development of Motorola-68000 Based PWM Inverter Fed Induction Motor Drive", 1998.
47. "Design and Development of Fuzzy Logic Controlled Battery Charger", 1998.
48. "Design and Development of PC Based Three-phase to Single-phase Cycloconverter", 1998.
49. "Design and Development of Microcontroller Based Remote Control of Mobile Robot", 1998.
50. "Simulation and Development of Dedicated 8031 Based m-phase Chopper", 1999.
51. "Design and Development of Dedicated 8085 Based 3-phase Generalized Converter with Improved Power Factor", 1999.
52. "Design and Development of Dedicated 8031 Based 1-phase Switch Mode Power Supply", 1999.
53. "Design and Development of 8031 Based LC-CSI fed induction motor Drive", 1999.
54. "Design and Development of PC Based PWM Rectifier with Controlled Power Factor", 1999.
55. "Design and Development of 8097 Based Closed Loop Controller for Chopper fed D.C. Motor Drive", 1999.
56. "Development of Simulation Software for Experiments in Electrical Engineering for Distance Education", 2001.
57. "Development of 8031 Microcontroller Based Current Source PWM Inverter with Improved Input Power Factor", 2001.
58. "Development of 8031 Microcontroller Based PWM Scheme for Single-Phase Three Level PF Correction Circuit", 2001.
59. "Development of Messaging Server for Office Interconnection", 2002.
60. "Development of 8088 Based Improved Power Factor Converter", 2002.
61. "Development of 8031 Based Programmable DC Motor Drive", 2002.
62. "Development of PC Based Active Filter", 2002.
63. "Development of 8031 Based Fuzzy Logic Controlled dc Drive", 2003.
64. "Development of 8088 Based Slip Energy Recovery Drive", 2003.
65. "Development of a Control Scheme for a Single-phase PWM Multilevel Rectifier", 2003.
66. "Design and Development of Robotic Arm and Its Control through Network", 2003. (**Won Best B.Tech. Project Award**).
67. "Development of Unified Power Quality Conditioner (UPQC)", 2004.
68. "Design and Development of Multilevel Converter", 2004.
69. "Development of Variable Frequency Current Controlled PWM Inverter of I.M. Drive", 2004.

70. "Performance Investigation of Current Source Inverter Based STATCOM", 2004.
71. "Design and Development of a Three-Level Converter with Power Factor Correction", 2005.
72. "Design and Development of Multilevel Inverter for Reactive Power Compensation", 2005.
73. "Development of FPGA based DC Motor Drive", 2006.
74. "Design & Development of SMART UPS", 2006. **(Won Best B. Tech. Project Award)**
75. "Real Time Tracking of Objects Using Wireless Robotic Arm", 2006.
76. "Development of Microcontroller Based 4-Switch Three-phase Bi- directional Power Converter", 2006.
77. "Microcontroller Based MP3 Player", 2006.
78. "Development of PC Based Sinusoidal Current Source Inverter using Active Power Filter", 2007.
79. "Development of FPGA Based Isolated AC to DC Converter for Low Voltage, High Current Output", 2007.
80. "Development of Microcontroller Based Programmable DC Drive" 2007.
81. "Design and Development of 16-bit Microcontroller Based Data Logger", 2007.
82. "Development of 3-Phase AC to DC converter with Sinusoidal source Current", 2007.
83. "Development of Intelligent Security System for a Complex", 2007.
84. "Development of FPGA Based CVPWM Converter with Current Link", 2008.
85. "Implementation of Object Tracking Algorithms on FPGA", 2008.
86. "Development of PC Based Matrix Converter", 2008.
87. "Implementation of 8-bit Microcontroller on FPGA", 2008.
88. "Development of Remote Controlled Microcontroller Base Robot", 2008.
89. "Development of Microcontroller Based Shunt Active Power Filter", 2008.
90. "Design and Development of Microcontroller Based Hybrid Active Filter", 2009.
91. "Design and Development of Microcontroller Based Cascade Multi-Level Inverter for Induction Motor Speed Control", 2009.
92. "Development of Virtual Electronics Laboratory", 2009.
93. "Development and Implementation of Multilevel Rectifier with Improved Power Quality", 2010.
94. "Design and Development of Unified Power Quality Conditioner", 2010.
95. "Design and Simulation of a Solid State Tap Changer for a Low Voltage Transformer", Minor project, 2011.
96. "Development of Single-Phase Shunt Active Power Filter", Minor project, 2011.
97. "Development of Single-phase High Power Factor Rectifier", Minor project, 2011.
98. "Design and Development of Single-Phase Boost High Power Factor Rectifier", Minor project, 2011.
99. "Development of Wireless Non-radiative Energy Transfer System", Minor project, 2011.
100. "Development of Smart Energy Meter", Minor project, 2011.

101. "Development of Programmable Single-Phase Voltage Source Inverter", 2011.
102. "Development of a Smart Moveable Robot", 2011.
103. "Development of FPGA Based Single-phase Multi-Level High Power Factor Rectifier", 2011.
104. "Design and Development of Microcontroller Using VHDL", 2011.
105. "Development of a Programmable DC Motor Drive", 2011.
106. "Simulation and Analysis of Active Power Filter", Minor Project, 2012.
107. "Simulation and Analysis of Matrix Converter", Minor Project, 2012.
108. "Development of Microcontroller Based Answering Machine for Objective type Questions", Minor Project, 2012.
109. "Design and Implementation of DSPIC Controlled Matrix Converter for induction Motor Drive", 2012.
110. "Design and Implementation of Active Power Filter", 2012.
111. "Design and Implementation of Microcontroller Based Two Quadrant Chopper for DC Drives", 2012.
112. "Design and Development of STATCOM", 2012.
113. "Robust Control of TCSC Compensated Power System", 2012.

#### **11. Summer Undergraduate Research Award Projects Guided:**

1. "Design and Implementation of Low Cost Active Power Filter", Abhishek Arora, Aditya Lad, Suraj Prakash, 2005
2. "Real Time Scanning of Position of Sun Using Differential Voltage Amplification Methodology", by Viraj Gupta, Neeraj Anand, Samarth Agarwal, 2006. **Awarded Cash prize of Rs.2000/- for the third best project.**
3. "Blatant' Sceptre: Bluetooth Enabled Remoter Control via Gesture Actuation", by Parmeet Singh Bhatia, Prashant Prahladan, 2007.
4. "Development of Attendance Record Unit using Finger-Point Reader", by Sandeep Parihar, Faraz, Nitish Arora, 2008.
5. "Development of Wireless Energy Meter", by Asham Vohra, 2009.
6. "Development of a working unit of True Power Factor Meter for all types of periodic input waveforms", Arpit Agarwal, Abhishek Kumar 2011.

#### **11. List of M.Tech. Dissertations Guided:**

1. "A Microprocessor Based Closed Loop Variable Speed Induction Motor Drive System", By Mr. S. Ramanand, Co-guide Dr. V.K. Verma, 1987
2. "Microprocessor Based Chopper Fed D.C. Drive System", by Mr. S. Gopal Krishna, Co-guide Dr. V.K. Verma, 1987.
3. "Performance Investigation of A Microprocessor Based Chopper Fed Closed Loop D.C. Drive", by Mr. R. Srivatsa, Co-guide Dr. V.K. Verma, 1988.
4. "Development and Performance Investigation of a Microcomputer Controlled Kramer Drive Using PWM Inverter", by Mr. Ajat Shatru Arora, Co-guide Dr. V.K. Verma, 1992.
5. "Investigation on a Multiphase Chopper Fed D.C. Motor Drive", by Mr. Prashant Kumar Singh, Co-guide Dr. S.P. Srivastava, 1993.

6. "Design, Development and Performance Investigation of a Microcomputer Controlled PWM Converter Fed D.C. Drive", by Mr. Arvind Mittal, Co-guide Sri D.M. Deshpande, 1993.
7. "Development and Performance Investigation of a Microprocessor Based Voltage Regulator Fed Induction Motor Drive", By Mr. Pradeep Chandra Kandpal, Co-guide Dr.S.P. Srivastava, 1995.
8. "Development and Performance of a PWM Converter Fed D.C. Drive", by Mr. Sandeep Kumar, 1995.
9. "On-line Condition Monitoring of Power Transformers", by Mr. Ashish Kumar, Co-guide Dr. H.O. Gupta, 1995.
10. "Sub and Super Synchronous Operation of a Slip Energy Recovery System", by Mr. Bhawani Shanker, Co-guide Dr.S.P. Gupta, 1995.
11. "Development and Experimental Investigation on Microprocessor Based 3-phase to 1-phase Cycloconverter Fed Induction Motor Drive", by Ms. Seema Singhai, Co-guide Dr.S.P. Gupta, 1996.
12. "Performance Investigation of PC Based PWM Inverter Fed Induction Motor Drive", by Mr. Jagdeep Singh, 1996.
13. "Experimental Investigations on Microprocessor Based VSCF Generator", by Mr. Prakash Chandra Ray, Co-guide Dr. S.P. Srivastava, 1996.
14. "Performance Investigations on 8031 Based Switched Reluctance Motor Drive", by Mr. Ravi Gupta, Co-guide Dr. S. P. Srivastava, 1996.
15. "Investigations on PWM Rectifier Fed DC Motor Drive", by Mr. Vinod Jaseja, Co-guide Dr. S.P. Srivastava, 1997.
16. "Investigations on PWM Converter Fed DC Drive Operating in Regenerative Mode", by Mr. Prashant Singh, Co-guide Dr. S.P. Srivastava, 1997.
17. "Simulation and Performance Evaluation of a High Performance Induction Motor Drive", by Ms. Sonia Nanda, Co-guide Sri Y.P. Singh, 1997.
18. "Development of Fuzzy Logic Based Chopper Fed DC Drive", by Mr. Yashpal Kakkar, 1998.
19. "Design and Implementation of a Neural Controller for Phase-Controlled DC Motor Drive" by Ms. Kanchan Singh, 1999.
20. "Simulation Study of Adaptive Speed Control of VSI Fed Induction Motor Drive" by Mr. Deepak Jatiani, 2001.
21. "Performance Investigations of a CSI Fed Induction Motor Drive for Traction Applications" by Mr. Ashwini Srivastava, Co-guide Dr. S.P. Srivastava, 2001.
22. "Performance Evaluation of a Neuro Controller for Brushless DC Motor Drive" by Mr. Anurag Gupta, Co-guide Dr. S.P.Srivastava, 2001.
23. "Performance Investigations of an Automatic Voltage Regulator Using AC Chopper" by Mr. Rakesh Kumar, Co-guide Dr. S.P. Srivastava, 2001.
24. "Simulation and Performance Investigation of a High Power Factor Converter Fed DC Motor Drive" by Mr. Abdul Hamid Bhat, 2001.
25. "Analysis of VSCF Power Conversion Scheme Using Brushless DC Generator" by Mr. Rakesh Maurya, Co-guide Dr. S.P.Srivastava, 2002.
26. "Design of Controllers for High Performance Induction Motor Drive" by Mr. Ehtashamul Haque, Co-guide Dr. V.K.Verma, 2002.
27. "Simulation & Performance Investigations of Single-Phase High Power Factor Rectifiers" by Mr. Sachin Kumar Jain, 2002.

28. "Simulation and Performance Investigation of Fuzzy Controlled DC-DC Converters" by Ms. P.Leoni Samadhanam, Co-guide Dr. S.P. Gupta, 2003.
29. "Performance Investigations on a Variable Speed Constant Frequency Generator" by Mr. M.K.Kishore Kumar, Co-guide Dr. S.P. Srivastava, 2003.
30. "Investigations on CSI Fed Induction Motor Drive with Minimum Loss Control" by Mr. Naveen Kumar Rathi, 2003.
31. "Simulation and Performance Investigation of Multi-Level Inverter Fed Induction Motor" by Mr. Shurjeel Ghani Lalla, 2003.
32. "Simulation and Analysis of Current Controlled PWM Inverter" by Mr. Neel Mani Yadav, 2003.
33. "Simulation Study of Rotor Resistance Estimation Techniques in Sensor-less Induction Motor Drive" by Mr. Pankaj Arora, Co-guide Dr. S.P. Gupta, 2003.
34. "Performance Investigations of Wind Energy Conversion System", by Mr. K.V.V. Suresh, Co-guide Dr. S.P. Srivastava, 2004.
35. "Performance Investigations of High Power Factor Bidirectional Converter Fed DC Drive", by Ms. Shweta Dubey, 2004.
36. "Experimental Investigation of Three Level PWM Converter", by Mr. Ashutosh Kumar, Co-guide Dr. S.P. Srivastava, 2004.
37. "Performance Evaluation of Harmonic Elimination Techniques in CSI Drives", by Mr. Ahmed Irfan M.F., Co-guide Dr. S.P. Srivastava, 2004.
38. "Performance Evaluation of Multilevel PWM Inverter", by Mr. Sunil Joshi, 2004.
39. "Performance Investigations of Fuzzy Logic Based I.M. Drive", by Mr. Chanukya Kumar Adapa, 2004.
40. "Performance Evaluation of Multi-Level Inverter Fed Induction Motor Drive", by Bondada Subba Rao, 2005.
41. "Performance Investigations of High Input Power Factor Converter Applying Space Vector Modulation", by D. Amarnath Reddy, 2005.
42. "Performance Investigations on Low Voltage High Current Rectifiers with Low Harmonic Distortion", by Prashant Sharma, 2005.
43. "Simulation and Experimental Validation of 3-phase Improved Performance APF", by P.Shiv Krishna, Co-guide Sri Y.P. Singh, 2005.
44. "Modelling and Analysis of CSI Fed I.M. Drive Using Field Orientation Control", by Dachuri Chaitanya, Co-guide Dr. S.P. Srivastava, 2005.
45. "Performance Investigations on a Multilevel Converter with High Input P.F", by Neeraj Govid Dhopte, Co-guide Dr. S.P. Srivastava, 2005.
46. "Permanent Magnet Synchronous Motor Drives for Electric Vehicles", by Siddhapura Kuman Ranchhodbhai, Co-guides Uwe Vollmer, Uwe Schafer, 2005.
47. "Performance Investigation of Fuzzy Logic Control of Phase Controlled Converter Fed DC Motor Drive", by Mallilarjuna Bommu, 2006.
48. "Performance Investigations of a CSI Based Power Line Conditioner with ANN Control", by Sandip Kumar Chatterjee, Co-guide Dr. G.N. Pillai, 2006.
49. "Performance Investigation of Induction Motor with Direct Torque Control", by Konda Reddy Polu, Co-guide Dr. S.P. Gupta, 2006.
50. "Modeling and Simulation of a three-phase Power Factor Corrected Active Rectifier with Reduced Switch Count", by Ravi Kumar TVVS, 2006.
51. "Simulation and Analysis of Matrix Converter", by Mitesh Kumar N Popat.

52. "Modeling and Simulation of Self Excited Generator with Voltage Regulator", by Shanthi Swaroop Donthu, Co-guide Dr. S.P. Srivastava, 2006.
53. "Comparative Analysis of Control Strategies for AC to DC Converter", by Swathi Yerraguntla, 2006.
54. "Modeling and Simulation of DC-DC converter", by Sudha Bansal, Co-guide Dr.S.P. Gupta, 2006.
55. "Stability Analysis of Multilevel Inverter Fed Induction Motor Drive", by Vijay Kumar Bhatt, Co-guide Dr. S.P. Srivastava, 2006.
56. "Simulation, Modeling and Performance Investigation of Unified Power Quality Conditioner (UPQC)", by Haroorn Rashid, Co-guide Dr. H.O. Gupta, 2006.
57. "Performance Investigations of Switched Reluctance Motor Drive", by Anvesh Goud Medi, 2007.
58. "Performance Investigations on Voltage controlled Self excited Induction Generator", by Ashish Jain, Co-guide Sri Y.P. Singh, 2007.
59. "Performance Investigations of Static Compensator using Multi-level Inverter", by Korada Thammayya Babu, 2007.
60. "Performance Investigations of Vector Control Induction Motor Drive", by Kothana Venkata Naresh, Co-guide Dr. Sumit Ghatak Choudhuri, 2007.
61. "Performance Investigations of Fuzzy Controlled High Power Factor Rectifier", by Naveen Kumar Junnoji, Co-guide Sri Y.P.Singh, 2007.
62. "Comparative Evaluation of Vector Control and Direct Torque Control Induction Motor Drives", by A. Thilak Raja, Co-guide Dr. Sumit Ghatak Choudhuri, 2008.
63. "Performance Evaluation of 3-phase, 4-switch Inverter fed Brushless DC Motor Drive", by K. Rajender, Co-guide Dr. Mukesh Pathak, 2008.
64. "Performance Evaluation of Direct Torque Controlled Multi-Level Inverter Fed Induction Motor Drive", by Lakashmi Narayan, 2008.
65. "Design Improvement of Induction Machine for Adjustable Speed Drive", by Mantaj Kaur, Co-guide Dr. S.P. Srivastava, 2008.
66. "Analysis of Induction Machine for Variable Speed Wind Power Generation", by M. Yibreworbu, Co-guide Dr. S.P. Gupta, 2008.
67. "Performance Evaluation of Matrix Converter fed Induction Motor Drive", by N.V.D.V. Prasad, Co-guide Dr. S.P. Dubey, 2008.
68. "Performance Evaluation of Hybrid Converter System for Large Induction Motor Drive", by Prashant Gupta, 2008.
69. "Performance Investigation of Reduced Loss CSI fed Induction Motor Drive", by Sankararao Pudi, Co-guide Dr. S.P. Srivastava, 2008.
70. "Implementation of Neural Network Based SVM on FPGA for Induction Motor Drive", by Subba Rao, 2008.
71. "Design of Controller for Shaker", by V.S. Sriram, Co-guide Dr. H.O. Gupta, 2008.
72. "Performance of Cascaded Multi-level Converter Based STATCOM", by Paramashi Banerjee, Co-guide Dr. B. Das, 2008.
73. "Development of Prototype for GPS Based Positioning", by Siddharth Verma, Co-guide Dr. J.K. Ghosh, 2008.
74. "Investigation of Computer Vision Techniques for Robot Navigation", by Shobhraj Singh Chauhan, 2009.

75. "Automatic System for Electro-dynamic Shaker Control", by D. Raghavender Goud, Co-guide Dr. H.O. Gupta, 2009.
76. "Simulation and Performance Investigation of ZCS DC-DC converter", by Sridhar G., 2009.
77. "Simulation of PWM Rectifier with DC Current Link", by A. Shravan Kumar, Co-guide Dr. Sumit Ghatak Choudhuri, 2009.
78. "Performance Investigation of Matrix Converter Fed Induction Motor", by Abir Chatterjee, 2009.
79. "Comparative Analysis of Control Techniques for Active Power Converter", by Tanvi Agarwal, 2009.
80. "Analysis of Resonant Converter", by Mahesh Chihaluri, Co-guide Dr. M.K. Pathak, 2010.
81. "Analysis and Performance of Soft Switching Single-Phase three-Level Rectifier", by Man Mohan Garg, 2010.
82. "Analysis of Control Techniques of Welder Power Supply", by Pravanjan Malik, 2010.
83. "Comparison of Various Control Techniques for Matrix Converter", by Karthik Vagicharla, 2010.
84. "Performance Comparison of Shunt Active Power Filter Topologies", by Sudhakar Bakki, 2010.
85. "Performance Evaluation of Z-Source Inverter Fed Induction Motor Drive", by V.V.S. Vara Prasad Akasam, 2010.
86. "Design and Development of Static Compensator", by Subhash Pradhan, Co-guide Sri Bharat Gupta, 2010.
87. "Design of Solid-state Tap Changer for Low Voltage Transformer", by Veera Kanaka Rao, Co-guide Dr. H.O. Gupta, 2010.
88. "Performance Investigation of Three-Phase AC to DC Cuk Converter", by Ankur Chittora, Co-guide Dr. Mukesh Pathak, 2011.
89. "Performance Evaluation of Neutral Point Clamped Active Rectifier", by Ashok Peddi, Co-guide Dr. S.Das, 2011.
90. "Performance Investigation of Z-source Inverter fed Induction Motor Drive", by K. Janardhana, 2011.
91. "Performance Investigation of Hybrid Active Filter", by Poornachandra Rao G., 2011.
92. "Performance Evaluation of Flying Capacitor Multi-level Inverter Based Induction Motor Drive", by R. Mallikarjuna, 2011.
93. "Development of Active Converter to Generate Split DC for Multi Level Inverter", by Purushottam Rao, 2012.
94. "Comparative Performance Evaluation of Different Topologies of Hybrid Power Filters", by Cherala N. Srivastav, Co-guide Dr. S.Das, 2012.
95. "Voltage Regulation Using Static Synchronous Compensator", by Sunil Kumar, Co-guide Dr. S. P. Srivastava, 2012.
96. "Multi phase Multi Level Inverter for Induction Motor Drive", by Trivedi Tapankumar, 2012.
97. "Performance Investigation of DSP Based Self-Controlled PMSM Drive", by Vineet Wilson, Co-guide Dr. S.P. Srivastava, 2012.
98. "Performance Evaluation of Control Strategies for PWM Rectifiers", by M.Venkata Ramana Murthy, 2012.



99. "Performance Investigation of Single-Phase Multilevel Rectifier", by Pallavi Ahuja, 2012.

## **12. List of Ph.D.s Awarded/Submitted:**

1. "Investigations on Shunt Active Power Filter for Power Quality Improvement" by Mr. Shailendra Jain, Co-guide Dr. H.O. Gupta, 2003.
2. "Design and Development of Modified Self-Commutating CSI Fed Induction Motor Drive" by Mr. Ashok Kumar Pandey, Co-guide Dr. V.K. Verma, 2003.
3. "Investigations on Permanent Magnet Motor Drive" by Mr. Amar Nath Tiwari, Co-guide Dr. S.P. Srivastava, 2003.
4. "Chip Architecture for Motor Control" by Mr. Rahul Dubey, Co-guide Prof. M.K. Vasantha, 2006.
5. "Three-Phase High Power Factor Converters" by Mr. Abdul Hamid Bhatt, 2008.
6. "Current Source Inverter Fed Induction Motor Drive", by Mr. P. Parthiban, Co-guide Dr. S.P. Srivastava, 2009.
7. "Performance Investigation of Unified Power Quality Conditioner", by Mr. Vadirayacharya K., Co-Guide Prof. H.O. Gupta, 2009.
8. "Investigations on Multi-Level Inverter for Induction Motor Drive", by Mr. Bhalodi Kalpesh Hirjibhai, 2009.
9. "Optimal Design and Control of Three-Phase Induction Motor", by Mr. C.Thanga Raj, Co-guide Dr. S.P. Srivastava, 2009.
10. "Investigations on Multilevel Inverters For Harmonic Free High Voltage Applications", by Mr. Pradyumn Chaturvedi, Co-guide Dr. Shailendra Jain, 2010.
11. "Voltage Control in Distribution System Using Multi-level Inverter Based STATCOM", by Mr. Jagdish Kumar, Co-guide Dr. B. Das, 2010.
12. "FPGA Based Chip Design for DC-DC Converter", by Mr. Subhash Chandra, Co-guide Dr. Indra Gupta. 2012.
13. "Multilevel Inverter Based Active Power Filter", by Mr. Madhukar M. Waware. 2012.
14. "Investigation into Performance of Transformer Feeding Non-Linear Load", by Mr. Subhash Kumar Joshi, Co-guide Dr. H.O. Gupta, 2012.
15. "Switched Reluctance Motor Drive", by Makwana Jignesh Ashokbhai, Co-guide Dr. S.P. Srivastava. Under Progress.
16. "Permanent Magnet Synchronous Motor Drive", by Ambrish Mishra, Co-guide Dr. S.P. Srivastava. Under Progress.
17. "Multi-Level Inverter Based STATCO", by Sreenivasarao D., Co-guide Dr. B. Das. Under Progress.
18. "Active Rectifier", by Jayaram Nakka, Co-guide Dr. Sharmili Das. Under Progress.
19. "Power Quality Improvement Using Hybrid Active Filter", by Ms. Vasundhara Mahajan, Co-guide Dr. H.O. Gupta. Under Progress.
20. "Low Voltage High Current Rectifier", by Mr. Rakesh Maurya, Co-guide Dr. S.P. Srivastava. Under Progress.
21. "Matrix Converter" by Mr. Anubhav Agarwal, Co-guide Dr. Sharmili Das. Under Progress.

22. "TCSC", by Bhavin, Co-guide Dr. G.N. Pillai. Under Progress.
23. "Multilevel Inverter fed Induction Motor Drive", by Mr. Sanjiv Kumar. Under Progress.

### **13. List of Conferences Attended:**

1. National System Conference, University of Roorkee, 1991.
2. International Conference on Computer Applications- Recent Advances, CERA-97 at IIT Roorkee during September 8-11, 1997.
3. National Power System Conference, NPSC-2000 at IISc Bangalore, December 20-22, 2000 held at Indian Institute of Science, Bangalore.
4. International Conference on Computer Applications- Recent Advances, CERA-01 at IIT Roorkee during Feb.21-23, 2002.
5. International Conference on Computer Applications- Recent Advances, CERA-05 at IIT Roorkee during September 29-October 1, 2005.
6. International Symposium on Industrial Electronics ISIE-06 at Ecole de technologie Superior, Montreal, Quebec, Canada during July 9-13, 2006.
7. International Conference on Computer Applications- Recent Advances, CERA-09 at IIT Roorkee during February 19-21, 2010.
8. National Power Electronics Conference (NPEC-10) at IIT Roorkee during June 10-13, 2010.
9. International Conference on Electrical Power and Energy Studies, ICEPES-10 at MANIT, Bhopal during August 26-28, 2010.

### **14. List of Courses Co-ordinated:**

1. A **1-week** CMPA course on "Microprocessors and their Applications" for Kashmir University Students in Jan. 1989.
2. A **3-months** course on "Microprocessor Controlled Electric Drives", for Industry Engineers sponsored by Research, Design and Standards Organization, Ministry of Railways, April 6, 1993 - July 3, 1993.
3. A **2-week** course on "Static Power Converters for Industrial Drives/Motor", for Teachers of Engineering Institutions, June 27, 1995- July 11, 1995.
4. A **2-week** QIP short term course on "Microcomputer Controlled DC Drive", Sponsored by AICTE from July 1 to July 13, 1996.
5. A **2-week** course on Z-80 Microprocessor for Engineers of BHEL, Hardwar during August 1996.
6. A **2-week** QIP short term course on "Microcomputer Controlled AC Drive", for Teachers of Engineering Institutions, June 19, 1997- July 3, 1997.
7. A **1-week** QIP short term course on "Power Quality Problems & Solutions: Recent Advances for Teachers of Engineering Institutions, May 23, 2005- May 27, 2005.
8. A **6-week** course on "Embedded Systems" for the students of Engineering Institutions under STEP, June 15, 2005 – July 28, 2005.
9. A **6-week** course on "Embedded Systems" for the students of Engineering Institutions under STEP, July 15, 2005 – August 28, 2005.

10. A **4-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, August 3, 2005 – September 1, 2005.
11. A **1-week** short term course on “Power Quality Problems & Solutions for Teachers of Engineering Institutions Under Centre for Continuing Education Department IIT Roorkee, January 9- January 14, 2006.
12. A **2-week** course on “Training Programme in Applications of Embedded Systems for Product Development” for the students of Engineering Institutions under STEP, January 5 - January 14, 2006
13. A **6-week** course on “Embedded Systems” for the students of Engineering Institutions, under STEP, June 15– July 26, 2006.
14. A **4-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, July 14 – August 10, 2006.
15. A **4-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, August 3- August 30, 2006.
16. A **6-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, June 5 – July 16, 2007.
17. A **6-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, June 20 – July 31, 2007.
18. A **6-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, July 5 - August 14, 2007.
19. A **6-week** course on “Embedded Systems” for the students of Engineering Institutions under STEP, July 20 - August 30, 2007.
20. A **1-week** QIP short term course on "Simulation Techniques of Power Electronics Controllers", Sponsored by AICTE from January 7 - January 11, 2008.
21. A **1-week** short term course on “Program & Applications of 8085 Microprocessor” under Continuing Education Department, June 21- June 25, 2008.
22. A **1-week** short term course on “Program & Applications of PLCs” under Continuing Education Department, September 8- September 12, 2008.
23. A **1-week** short term course on “Digital Electronic Circuits and Systems” under Continuing Education Department, February 11-February 15, 2009.
24. A **1-week** QIP short term course on "Improved Quality AC/DC Converters", Sponsored by AICTE from June 15- June 19, 2009.
25. A **1-week** QIP short term course on "Embedded Systems and its Applications to Power Electronics ", Sponsored by AICTE from July 5- July 9, 2010.

Apart from organizing and delivering lectures in the above courses, lectures were also delivered on various topics such as microprocessors, power electronics, electric drives, active filters and high power factor converters in other courses organized by Continuing Education Department, Quality Improvement Program and I.S.T.E.

## 15. Subjects Taught:

### (A) At Undergraduate Level

- (i) Power Electronics
- (ii) Microprocessors
- (iii) Microprocessor Interfacing and Applications
- (iv) D.C. Machines and Transformers
- (v) Induction Machines
- (vi) Synchronous Machines
- (vii) Electric Drives
- (viii) Electrical Technology
- (ix) Computer Programming
- (x) Linear Electronics
- (xi) Digital Electronics and Digital Systems
- (xii) Advanced Power Electronics
- (xiii) Power Quality Improvement Techniques
- (xiv) Single-Chip Microcomputer and Applications
- (xv) Advanced Microprocessor and Interfacing
- (xvi) Embedded Controller

### (B) At Postgraduate Level

- (i) Advanced Control Systems
- (ii) Power Electronics
- (iii) Electric Drives
- (iv) Generalized Theory of Electrical Machines
- (v) Synchronous Machines and System Stability
- (vi) Microprocessor Controlled Electric Drives

## 16. New Courses Developed:

1. Control Techniques in Power Electronics for AC drives
2. FACTS Devices
3. Pulse Width Modulation for Power Converters
4. Switch Mode Power Supply
5. Topologies of Enhanced Power Quality AC/DC Converters
6. Embedded Controllers
7. Embedded Systems
8. Digital Design with VHDL
9. Advanced Power Electronics
10. Power Quality Improvement Techniques
11. Single-Chip Microcontroller and its Applications

Apart from this, the blow-up of the following existing courses prepared:

1. Electrical Machines-I

2. Electrical Machines-II
3. Digital Electronic Circuits and Systems
4. Microprocessors and Peripheral Devices
5. Power Electronics
6. Advanced Microprocessors and Interfacing
7. Electric Drives-I
8. Electric Drives-II
9. Electromagnetic field Theory
10. Introduction to Microprocessors

### **17. Teaching and Research Experience:**

1. Served as a Senior Research Fellow from 12.3.198 to 14.7.1985 in the Department of Electrical Engineering, University of Roorkee, Roorkee.
2. Served as Lecturer from 15.7.1985 to 8.4.1996 in the Department of Electrical Engineering, University of Roorkee, Roorkee.
3. Served as Assistant Professor from 9.4.1996 to 24.6.2001 in the Department of Electrical Engineering, University of Roorkee, Roorkee.
4. Served as Post Doctoral Fellow at Ecole de technologie, University de Quebec, Montreal, Canada from June 1999– Feb 2000 in the area of Active Power Filters and High Power Factor Converters.
5. Served as Associate Professor from 25.6.2001 to 2.2.2004 in the Department of Electrical Engineering, Indian Institute of Technology Roorkee, Roorkee.
6. Served as Research Fellow at Ecole de technologie, University de Quebec, Montreal, Canada from June 1, 2003-July 31, 2003 and June 1, 2004 –July 31, 2004 in the area of Unified Power Quality Conditioner.
7. Serving as Professor since 3.2.2004 in the Department of Electrical Engineering, Indian Institute of Technology, Roorkee.

### **18. Consultancy Projects Handled:**

1. “Testing of a Double Stator Squirrel Cage Induction Motor” with Dr. D.R. Kohli and Dr. Bhim Singh for Mr. S. S. Jain, Scientist, C.B.R.I., Roorkee, 1986.
2. “Testing of a Three-phase Induction motor” for M/s Shiva Industries, Agra, 1992, 1994, 1996, 1997, 1998.
3. “Design of a Domestic Inverter” for M/s Birla Yamaha, Dehradun. 1998.
4. “Design Testing of Domestic Inverter” for M/s Birla Yamaha, Dehradun. 1998.
5. “Design of Single-Phase Converter Unit” for M/s Vijay electronics, Roorkee, 2003.
6. “Design of Battery Charger for Air-Conditioning of Railway Coaches” for M/s Vimal Transformer Corporation, Moradabad, 2003.
7. “Testing of Battery Charger for Air-Conditioning of Railway Coaches” for M/s Vimal Transformer Corporation, Moradabad, 2003.
8. “Determination of No-Load Current Harmonics of Distribution Transformers” for M/s Nucon Switchgears Pvt. Ltd, Ludhiana, 2004

9. "Testing of Three-Phase Transformers" for M/s Vimal Transformer Corporation, Moradabad, 2004.
10. "Design of Microcontroller Based Single-Phase Converter Unit" for M/s VPL Infotech & Consultants, Delhi, 2005.
11. "Testing of 110V Inverter" for M/s Vimal Transformer Corporation, Moradabad, 2007.
12. Human Resource Work of MP DISCOMS & TRANSCO, MPEB, 2006.
13. Human Resource Work of MP DISCOMS & TRANSCO, MPEB, 2007.
14. Human Resource Work of MP DISCOMS & TRANSCO, MPEB, 2008.
15. "Measurement of No-Load Current Harmonics of Distribution Transformers" for M/s Vimal Transformer Corporation, Moradabad, 2008.
16. "Design of Educational Kits on Power Electronics" for M/s Record Tech Electronics, Roorkee, 2009.
17. "Testing of 5KVA Voltage Regulator" for M/s SAI Electricals, Merrut, 2010.
18. "Design of Active Harmonic Filter" for M/s SAI Electricals, Merrut, 2010.
19. "Design of Power Electronic Controllers" for Educational Purpose, for M/s Record Tech Electronics, Roorkee, 2011-12.
20. "Testing of Active Harmonic Filter" for M/s SAI Electricals, Merrut, 2012.
21. "Testing of Home UPS" for M/s Exide Industries Ltd., Roorkee, 2012.
22. "Instrumentation & Controls for Wind Tunnel" sponsored by M/s Jaypee Associates Ltd, Noida, 2011-12.

#### **19. Research Projects Handled:**

1. Microprocessor Controlled Induction Motor Drive funded by DRIL, 1986.
2. Microprocessor Controlled Harmonic Torque Reduction in Variable Speed Induction Motor Drive funded by DRIL, 1989.
3. Development and Simulation of Dedicated 8031 Based Generalized Converter funded by DRIL, 1996.
4. Design and Development of Fuzzy Controlled Single-phase PWM Inverter funded by DRIL, 1997.
5. Development of Fuzzy Controlled Multi-quadrant DC Motor Drive funded by DRIL, 1998.
6. Development of PC Based 3-phase to 1-phase Cycloconverter for Low Speed I.M. Drive funded by DRIL, 1998.
7. Active Filter to Compensate Only Load Generated Harmonics funded by DRIL, 2000-2001.
8. Microcomputer Controlled CSI Fed Induction Motor Drive for Traction Applications sponsored by AICTE, (amount Rs. 6.5 lacs) 1999-2001.
9. Computer Controlled Power System Conditioning Through Active Filters sponsored by AICTE, (amount Rs.12.5 lacs) 2001-2003 (Co-investigator)
10. "Computer Controlled High Power Factor Converters" sponsored by MHRD, (amount Rs.10.0 lacs) 2002-2005.
11. "Embedded Systems" sponsored by DST under FIST, (amount Rs.100.0 lacs) 2008-2012, (Co-Investigator).
12. "Power Quality Conditioning" sponsored by DST under FIST, (amount Rs.100.0 lacs) 2008-2012, (Principal Investigator).

## **20. Educational Units Developed:**

- Generalized Converter for conducting experiments on phase controlled converters.
- Three-phase converter for conducting experiments on phase controlled converters.
- Current Commutated Chopper for conducting experiments on chopper fed dc drive
- Single-phase AC Regulator for conducting experiments on regulator fed induction motor drive.
- Single-phase converter for conducting experiments on open loop and closed loop control of dc drive.
- Single-Phase Voltage Source Inverter for conducting experiments on inverters.
- Microcontroller based three-phase Current Source Inverter for conducting experiments.
- Microcontroller based three-phase AC regulator for conducting experiments on induction motor drive.

Apart from these units several microprocessor and microcontroller based power converter units, which include generalized phase controlled converters, dual converter, multi-phase dc choppers, sequence controlled ac regulators, cyclo-converter, current source and voltage source inverters, high power factor converters were developed for speed control of AC/DC motors. These units are used for demonstration in different sponsored courses and for teaching students.

## **21. Software Packages Developed:**

- Developed Software Package for Tabulation of Undergraduate Students in Marks System (1991-1993).
- Developed Software Package for Pre-Entrance Examination for admission in University of Roorkee (1996).
- Developed Software Package for Record Keeping in Continuing Education Department (1997).
- Developed Software Package for Counselling of Undergraduate Students (1998).
- Developed Software Package for Counselling of Postgraduate Students (2000).
- Developed Software Package for Tabulation of Undergraduate and Postgraduate Students in Grade System (2000) and engaged as software engineer for maintenance of software.
- Developed software package for Counseling of PG admission in DBMS and Clipper.
- Developed software package for JAM-2004 in DBMS and Clipper.

## **22. Membership of Professional Societies:**

- The Indian Society For Technical Education, Life Membership
- Institution of Engineers, Life Membership
- Indian Society for Continuing Engineering Education, Life Membership
- System Society of India, Life Membership
- IEEE Member of Power Electronics Society
- IEEE Member of Industrial Electronics Society
- IEEE Member of Industry Applications Society
- IEEE Member of Power Engineering Society

## **23. Departmental and Institutional Responsibilities:**

### **A) At present**

- Head, Department of Electrical Engineering
- Member, Software Purchase Committee since 2006.
- Member Department Planning Committee
- Member Department Purchase Committee
- Member Department Professorial Committee
- Member, Plagiarism Policy Committee
- O.C. Electric Drives Lab
- O.C. Embedded System Lab

### **B) In past**

- Associate Dean (Academic) from June 2006-December 2010.
- Member-Secretary, Academic Studies, March 2006-December 2010.
- Member, Academic Research, June 2006- December 2010.
- Convener DPC, July 2004 – March 2009.
- Chairman DUGC, 2005-2008.
- Group Leader, Electric Drives and Power Electronics, 2006-2008.
- Faculty Advisor, Non-teaching Staff, 2004-2011.
- O.C. M.Tech. (Power Apparatus and Electric Drives).
- Member UGAPC
- Member PGAPC
- O.C. Maintenance, 2001-2004
- O.C. Time-Table, 1994-1999.
- O.C. Project, 2009-2011.
- O.C. Department Office
- O.C. CMPA
- Member, Vision 2020 Document



- Coordinator, I Year 2007-2010
- Coordinator, Data Entry Team, REE and JEE
- Co-coordinator, Cognizance, 2005-2006, 2006-2007, 2007-2008, 2008-2009.
- Convener Prize, Distribution function, Convocation 2006, 2007, 2008.
- Vice-chairman, PG Admission Committee, 2007.
- Chairman, PG Admission Committee, 2008-2009.
- Staff Advisor, Electronics Section, Hobbies Club, 1986-1989, 1996-2006.
- Staff Advisor, Yogic Exercise, 1986-1999
- Staff Advisor, Swimming, 2000-2001
- O.S.D. in Academic Section, 2000-2001
- Chairman, Grade & Registration, 2004
- Member Patent Regulatory Committee