5.8. Research and Development (75)

5.8.1. Academic Research (20)

- DEI's research activities are governed by Research Promotion Policy (available on Institute Website). These are displayed on its website and communicated to all.
- It creates an enabling environment to foster research culture and provides required infrastructure and support.
- The IQAC facilitates dissemination of information related to Schemes, Awards, Fellowships etc.
- The Research Planning & Monitoring Committee provides advice and evaluates progress of funded projects to improve research outcome.
- Seed money is provided to young faculty to enable them to conduct their research activities.
- DEI has numerous research projects funded by major Science & Technology Govt. organizations (DST/AICTE/MHRD etc.).
- DEI has set up an Entrepreneurship and Virtual Incubation Cell, to facilitate students and entrepreneurs to start their own venture.
- DEI has facilitated faculty and students to market their products from Rural Economic Zones to International Economic Zones.
- DEI promotes faculty engagement in authoring books, publications, newsletters and organizing and participating in national and international seminars, conferences, workshops, consultancy and training.
- DEI follows its Code of Ethics to check Plagiarism and uses Urkund plagiarism software.

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.

- Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc. (15)

Books/Book Chapters:

Books

G.S.S. Babu: **Quantum Evolutionary Algorithms for Unit Commitment and OPF,** Lap Lambart Academic Publishing, 2016, ISBN: 978-3-649-94875-6

Book Chapters

Ashish Saini, A.K. Saxena: Chapter 5 Title- "**Multi-objective Congestion Management Methodology Based on Generation Rescheduling Bids and Load Curtailment in Competitive Electricity Markets**" , pp. 119-154, Energy Management, Volume 12, Chapter 5 in series Energy Science and Technology,

Studium Press LLC USA, 2015, ISBN of Series, 1-62699-061-ISBN of Volume, 1-62699-073-5

Ashish Saini: Chapter 21 Title- "**Zonal Reactive Power Market Clearing Model in Competitive Electricity Markets using Multi-objective Optimization Approach**", pp. 508-532, Energy Management, Volume 12, Chapter 21 in series "Energy Science and Technology", Studium Press LLC USA, 2015, ISBN of Series, 1-62699-061-ISBN of Volume, 1-62699-073-5

Number of Publications: 101, Number of Citations: 2221

	Title of paper	**Name of the author(s)**	**Name of journal**	**Year**
1.	Interval Type-2 Mutual Subset hood Fuzzy Neural Inference System (IT2MSFuNIS)	V Sumati C Patvardhan	IEEE Transactions on Fuzzy Systems, December, 2016. Google Scholar h-index: 144 Impact Factor: 6.306	2018
2.	A Parallel Interval Type-2 Fuzzy Neural Inference System Using Different Similarity Measures: Comparative Study	V Sumati, C Patvardhan	Advanced Computational and Communication Paradigms, Springer, Singapore, 2018, pp 165-173	2018
3.	An Improved Generalized Quantum-Inspired Evolutionary Algorithm for Multiple Knapsack Problem	S Bansal, C Patvardhan	International Journal of Applied Evolutionary Computation (IJAEC) 9 (1), 2018, pp 17-51	2018
4.	Navigation, Guidance & Control Program for GPS based Autonomous Ground Vehicle	Amit Yadav, Ajeet Gaur, S M Jain and D K Chaturvedi	Materials Today Proceedings Elsevier, Sept 2018	2018
5.	Performance analysis of grid interactive solar photovoltaic plant in India	K Pritam Satsangi, G S Sailesh babu, D Bhagwan Das, A K Saxena	Energy for sustainable development - ELSEVIER	2018

6.	Validation of Selected SPV Module	S. Mishra, K. Janardhana, D. Bhagwan Das	International Journal of Microelectronics and Digital Integrated Circuits	2018
7.	Effective Color image watermarking scheme using YCbCr color space and QR code	C. Patvardhan, Pragyesh Kumar, C. Vasantha Lakshmi	Multimedia Tools and Applications, PP 1-23, June, Springer. Impact Factor : 1.53	2017
8.	An Intelligent Electric Vehicle (IEV) Using LabVIEW	AmitYadav, Nitin Yadav, D.K.Chaturvedi	International Journal of Electrical Machines & Drives	2017
9.	Navigation, Guidance & Control Program for GPS based Autonomous Ground Vehicle	AmitYadav, Ajeet Gaur, D.K.Chaturvedi	International Journal of Engineering Development and Research	2017
10.	A novel Fuzzy-PSO term weighting Automatic Query Expansion approach using combined semantic filtering	Yogesh Gupta and Ashish Saini	Knowledge-Based Systems, Elsevier	2017
11.	Parallel Improved Quantum Inspired Evolutionary Algorithms to solve large sized Quadratic Knapsack Problems	C Patvardhan Sulabh Bansal Anand Srivastav	International Journal on Swarm and Evolutionary Computation, February, 2016, Elsevier. Impact factor: 2.963 SCIMago h-index - 22.	2016
12.	Enhanced Quantum Inspired Evolutionary Algorithm For Automatic Synthesis	Swanti Satsangi, C. Patvardhan	International Journal of Engineering Technology Science and Research, Volume 3, Issue 1, 2016, pp. 34 - 45.	2016
13.	Classification of Devanagari Characters based on Water Bodies	Manoj Kumar Gupta, C. Vasantha Lakshmi, C. Patvardhan	International Journal of Computer & Mathematical Sciences (IJCMS), Volume 5, Issue 1, January 2016, pp. 18 – 27	2016
14.	System for OCR of printed Telugu text in complicated layouts and backgrounds	C Vasantha Lakshmi, Sarika Singh and C Patvardhan	International Journal of Electronics, Electrical and Computational System (IJEECS) ISSN 2348-117X	2016

15.	A Parallel Interval Type-2 Fuzzy Neural Inference System Using Different Similarity Measures: Comparative Study	V Sumati C Patvardhan	International Journal of Electronics, Electrical and Computational System (IJEECS) ISSN 2348-117X, Special Issue, February, 2016.	2016
16.	An Improved Generalized Quantum-Inspired Evolutionary Algorithm for Multiple Knapsack Problem	C Patvardhan Sulabh Bansal Anand Srivastav	International Journal of Computers and Mathematical Science, ISSN 2347 – 8527, February, 2016.	2016
17.	Model Simulation & Resource Allocation in Cognitive Radio System	Swati, Deeksha Singh, AmitYadav	International Journal of Telecommunications & Emerging Technologies	2016
18.	Enabled Impairment Cognizant Of Elastic Optical Networks by Traffic Grooming and Multipath Routing	Deeksha Singh, AmitYadav	International Journal of Telecommunications & Emerging Technologies	2016
19.	Development of Mathematical Model for Electric Vehicle using Matlab -Simulink	AmitYadav, D K Chaturvedi, N K Mishra	International Journal of Management Development and Information Technology	2016
20.	Mathematical Model for Ground Electric Vehicle using Matlab -Simulink	AmitYadav, AjeetGaur, D K Chaturvedi	International Journal of Automatic Control System	2016
21.	EFFECT OF STATOR WINDING FAULTS ON PERFORMANCE CHARACTERISTICS OF THREE PHASE INDUCTION MOTOR	Prof. D. K. Chaturvedi, MayankPratap Singh	INTERNATIONAL JOURNAL OF COMPUTER APPLICATIONS(IJCA)	2016
22.	Quantum-Inspired Evolutionary Algorithm for Difficult Knapsack Problems	C Patvardhan SulabhBansal AnandSrivastav	International Journal on Memetic Computing, Springer Volume 7, Issue 2, 2015, pp 135-155. Scimago H-Index 13.	2015
23.	Evolution of Quantum Teleportation Circuits with Improved Genetic Algorithm	SwantiSatsangi, C. Patvardhan	International Journal of Computer Applications (0975 – 8887)	2015

			Volume 130 – No.11, November, 2015	
24.	Solving the 0-1 Quadratic Knapsack Problem with a competitive Quantum Inspired Evolutionary Algorithm	C Patvardhan SulabhBansal AnandSrivastav	Journal of Computational and Applied Mathematics, (2015), Elsevier, Volume 285, pp. 86-99, 5-year Impact Factor: 1.245 Scimago H-index 81.	2015
25.	Towards right amount of randomness in Quantum-inspired Evolutionary Algorithms	C Patvardhan SulabhBansal AnandSrivastav	International Journal on Soft Computing, Springer, 2015 pp 1-20. Impact factor: 1.67 SCIMago h-index: 46	2015
26.	Robust adaptive watermarking scheme based on image contents in Wavelet domain	A. K. Verma, C. Patvardhan and C. V. Lakshmi	International Journal of Image, Graphics and Signal Processing (IJIGSP), Vol. 7, No. 2, pp. 48-55, 2015 (Google scholar H-index 9).	2015
27.	Fast Heuristics for large instances of the Euclidean Bounded Diameter Minimum Spanning tree problem	C Patvardhan V PremPrakash AnandSrivastav	International Journal, Informatica, Vol. 39, No. 3, 2015 Impact factor:1.386 SCImago H-index 26.	2015
28.	An Exhaustive Font And Size Invariant Classification Scheme For OCR Of Devanagari Characters	Manoj Gupta C Vasantha Lakshmi M Hanmandulu C Patvardhan	International Journal on Natural Language Computing (IJNLC) Vol. 4, No.1, February 2015	2015
29.	Evolution Of Simpler Quantum Teleportation Circuit With Improved Genetic Algorithm	SwantiSatsangi, C. Patvardhan	International Journal of Computer Applications, Vol. 130, 2015, pp. 27-32	2015
30.	On line cooling system fault detection in induction motor	Chaturvedi D K, Md. Sharif Iqbal, MayankPratap Singh and VikasPratap Singh	The Journal of CPRI(Central Power Research Institute),	June 2015
31.	Solution to Electric Power Dispatch Problem using Fuzzy Particle	Sanjeev Kumar, D.K. Chaturvedi	Journal of Institution of Engineers (India)	2015

	Swarm Optimization Algorithm			
32.	On line GNN based induction motor parameter estimation	Chaturvedi D K, MayankPratap Singh, Md. Sharif Iqbal and VikasPratap Singh	The Journal of CPRI(Central Power Research Institute	June 2015
33.	ON LINE GNN BASED INDUCTION MOTOR PARAMETER ESTIMATION	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal, VikasPratap Singh	CENTRAL POWER RESEARCH INSTITUTE(CPRI)	2015
34.	ON LINE COOLING SYSTEM FAULT DETECTION IN INDUCTION MOTOR	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal, VikasPratap Singh	CENTRAL POWER RESEARCH INSTITUTE(CPRI)	2015
35.	An Overview of Intelligent Moving Machines (IMM)	AmitYadav, D.K.Chaturvedi	IJCA	2015
36.	Modified Neural Approach for Inverted Pendulum Control	D.K. Chaturvedi, Manmohan, TanveerQamar	International Journal of Engineering Technology, Management and Applied Sciences	2015
37.	Quantum Inspired GA based Neural Control of Inverted Pendulum	D.K. Chaturvedi, TanveerQamar, O. P. Malik	International Journal of Computer Applications	2015
38.	A new fuzzy logic based ranking function for efficient Information Retrieval system	Yogesh Gupta, AshishSaini and A.K. Saxena	Expert Systems with Applications, Elsevier	2015
39.	Solution of 'hard' knapsack instances using Quantum Inspired Evolutionary Algorithm	C Patvardhan SulabhBansal AnandSrivastav	International Journal of Applied Evolutionary Computation (IJAEC), 5(1), January – March, 2014, pp 52 – 68. (Impact Factor 0.86).	2014

40.	Balanced Quantum-Inspired Evolutionary Algorithm for Multiple Knapsack Problem	C. Patvardhan, SulabhBansal, AnandSrivastav	International Journal of Intelligent Systems and Applications (IJISA), 11, 2014, pp 1 -11. MECS-press. ISSN: 2074-9058 (IF 0.10). Google scholar H-index 10.	2014
41.	Optimal Power Flow Solution Using GA-Fuzzy and PSO-Fuzzy	Sanjeev Kumar, D.K. Chaturvedi,	Journal of Institution of Engineers (India)	2014
42.	On Line Fault Identification of Induction Motor using Fuzzy System	D. K. Chaturvedi, AkashGautam, MayankPratap Singh, Md. Sharif Iqbal	TECHNIA – International Journal of Computing Science and Communication Technologies	January. 2014
43.	ON LINE FAULT IDENTIFICATION OF INDUCTION MOTOR USING FUZZY SYSTEM	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal, AkashGautam	INTERNATIONAL JOURNAL OF COMPUTING SCIENCE AND COMMUNICATION TECHNOLOGIES(IJCSCT)	2014
44.	ESTIMATION OF INDUCTION MOTOR PARAMETERS- AN OVERVIEW	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal, VikasPratap Singh	CENTRAL POWER RESEARCH INSTITUTE(CPRI)	2014
45.	A REVIEW OF HEALTH MONITORING TECHNIQUES OF INDUCTION MOTOR	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal, VikasPratap Singh	CENTRAL POWER RESEARCH INSTITUTE(CPRI)	2014
46.	A Review of Health Monitoring Techniques of Induction Motor	Chaturvedi D. K., Md. Sharif Iqbal, MayankPratap Singh and VikasPratap Singh	The Journal of CPRI(Central Power Research Institute)	September 2014
47.	Estimation of induction motor parameters: an overview	Chaturvedi D. K., MayankPratapSingh ,Md. Sharif Iqbal and VikasPratap Singh	The Journal of CPRI(Central Power Research Institute),	December 2014

48.	FPGA- based Digital Overcurrent Relay with Concurrent Sense-Process-Communicate Cycles	VarunMaheshwari,Bhagwan Das Devulapalli and A.K.Saxena	Elsevier International Journal of Electrical Power and Energy Systems	2014
49.	Fuzzy Logic based approach to develop hybrid similarity measure for efficient Information Retrieval	Yogesh Gupta, AshishSaini and A.K. Saxena	Journal of Information Science, Sage Publications, U.K.	2014
50.	Principal component analysis-based real coded genetic algorithm for optimal reactive power dispatch	AmitSaraswat and AshishSaini	Power and Energy Conversion, Inderscience	2014
51.	FPGA-Based Digital Over current Relay with Concurrent Sense-Process-Communicate Cycles	Varun Maheshwari, D. Bhagwan Das, A.K. Saxena	International Journal of Electrical Power and Energy Systems no.55, pp.66-73,2014	2014
52.	HEALTH MONITORING TECHNIQUES OF INDUCTION MOTOR- AN OVERVIEW	Prof. D. K. Chaturvedi, MayankPratap Singh, Md. Sharif Iqbal	INTERNATIONAL JOURNAL OF RECENT TRENDS IN ENGINEERING AND TECHNOLOGY(IJRTET)	2013
53.	Optimal Power Flow Solution using Fuzzy Evolutionary and Swarm Optimization	Sanjeev Kumar, D.K. Chaturvedi	International Journal of Power and Energy Systems	2013
54.	Hardware Implementation of DSP Filter on FPGAs	Apurva Singh Chauhan, A.MukundLal, VarunMaheshwari and D.Bhagwan Das	International Journal of Computer Applications	2013
55.	Design and Development of Concurrent Processing Digital Overcurrent Relay	VarunMaheshwari,Bhagwan Das Devulapalli and A.K.Saxena	International Journal of Applied Engineering Research	2013

56.	Design and Development of FIR Filter with IP Cores on FPGA	Apurva Singh Chauhan, VarunMaheshwari and AmitSrivasatava	International Review of Appiled Engineering Research	2013
57.	A novel multi-zone reactive power market settlement model: A pareto-optimization approach	AmitSaraswat, AshishSaini, Ajay Kumar Saxena	Energy, Elsevier	2013
58.	Multi-objective optimal reactive power dispatch considering voltage stability in power systems using HFMOEA	AmitSaraswat and AshishSaini	Engineering Applications of Artificial Intelligence, Elsevier	2013
59.	Multi-objective reactive power market clearing in competitive electricity market using HFMOEA	AshishSaini and AmitSaraswat	Applied Soft Computing, Elsevier	2013
60.	Multi-objective day-ahead localized reactive power market clearing model using HFMOEA	AshishSaini and AmitSaraswat	Electrical Power and Energy Systems, Elsevier	2013
61.	A Robust Denoising Algorithm for Sounds of Musical Instruments Using Wavelet Packet Transform	Raghavendra Sharma, VuppuluriPremPyara	Circuits and Systems, Vol.4 No.7	2013
62.	Hardware Implementation of DSP Filter on FPGAs	Apurva Singh Chauhan, A.Mukund Lal, Varun Maheshwari and D,Bhagwan Das	International Journal of Computer Applications	2013
63.	Design and Development of Concurrent Processing Digital Over current Relay	Varun Maheshwari, Bhagwan Das Devulapalli and A.K.Saxena	International Journal of Applied Engineering Research	2013
64.	Solar Power and Harmony with Nature: A Smarter Way To Protect The Environment	D.K. Chaturvedi, Rahul Umrao, Sanjeev Kumar	Electrical India,	2012

65.	Load Frequency Control Methodologies for Power System	Rahul Umrao, D.K. Chaturvedi, Sanjeev Kumar	IEEE International Conference on Power, Control and Embedded Systems, MNNIT, Allahabad	2012
66.	Performance indicators for assessing solar photovoltaic microgrids in grid connected mode	K.Pritam Satsangi, D. Bhagwan Das, G.S.S. Babu, A.K. Saxena	Springer - MARC - 2018, HMRIT, New Delhi	2018
67.	Performance Evaluation of Grid InteractivePhotovoltaic System	K.Pritam Satsangi, D. Bhagwan Das, G.S.S. Babu, A.K. Saxena	International Conference on Computing, Power and Communication Technologies (GUCON)	2018
68.	"Multi-objective congestion management based on generator's real and reactive power rescheduling bids in competitive electricity markets", pp. 442-447	AshishSaini	International Conference on Computer, Communications and Electronics (Comptelix), 2017, Jaipur, India	2017
69.	"A comparative analysis of fuzzy based ranking functions for information retrieval", pp.60-64	AshishSaini, A.K. Saxena	3rd International Conference on Computing for Sustainable Global Development, INDIACom 2016, New Delhi, 2016	2016
70.	A new category based Deep Performance Index using Machine Learning for IPL Cricketers	C Deep Prakash C Patvardhan Sushobhit Singh	Presented at International Conference, India Habitat Centre, New Delhi	2016
71.	Hybrid DWT-SVD based Digital Color Image Watermarking	C Patvardhan Pragyesh Kumar C Vasantha Lakshmi	Presented at International Conference, India Habitat Centre, New Delhi	2016
72.	System for OCR of printed Telugu text in complicated layouts and backgrounds	C VLakshmi, Sarika Singh and C Patvardhan	ICETESMA16, IJEECS	2016
73.	Identification and use of Touching Property for Piece wise Classification of Devanagari Characters	Manoj Kumar Gupta, C. Vasantha Lakshmi, C. Patvardhan	Presented at International Conference, India Habitat Centre, New Delhi, February, 2016.	2016

74.	Condition Monitoring of Induction Motor International Conference Technically Co-sponsored by IEEE at Amity University Noida,India, On 12-13 March, 2015 , pp.135-140	D.K.Chaturvedi., Md. Sharif Iqbal, Mayank Pratap Singh	Recent Developments in Control Automation and Power Engineering (RDCAPE 2015)	2015
75.	Intelligent Health Monitoring System for Three Phase Induction Motor Using Infrared Thermal Image International Technically Co-sponsored by IEEE at Galgotias College of Engineering and Technology, Greater Noida on March 27-28, 2015.IEEE digital Lib. pp.1-6.	D.K.Chaturvedi., Md. Sharif Iqbal, Mayank Pratap Singh	International Conference on Energy, Economics and Environment (ICEEE2015)	2015
76.	Design of Reversible Quantum Equivalents of Classical Circuits Using Hybrid Quantum Inspired Evolutionary Algorithm	Swanti S. Gupta C Patvardhan	2015 IEEE International Advance Computing Conference, Bangalore.	2015
77.	Application of Genetic Algorithm for Evolution of Quantum Fourier Transform Circuits	Swanti Satsangi, C. Patvardhan	Proceedings of the Second International Conference on Computer and Communication Technologies, Vol. 379 of the series Advances in Intelligent Systems and Computing, pp. 773-782.	2015
78.	*"A New Similarity function for Information Retrieval based on Fuzzy logic", pp. 1472-1478*	AshishSaini	Third International Conference on Advances in Computing, Communications and Informatics (ICACCI-	2014

			2014),2014	
79.	"Fuzzy logic based similarity measure for Information Retrieval System performance improvement", pp. 224-232	AshishSaini, A.K. Saxena	International Conference on Distributed Computing and Internet Technology (ICDCIT 2014), Lecture Notes on Computer Science (LNCS 8337), Springer	2014
80.	"*Fuzzy based approach to develop hybrid ranking function for efficient Information Retrieval", pp. 471-479*	AshishSaini, A.K. Saxena	Third International Symposium on Intelligent Informatics (ISI'14), Third International Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), 2014	2014
81.	"Development of hybrid similarity measure using fuzzy logic for performance improvement of information retrieval System", pp. 1-5	AshishSaini, A.K. Saxena	International Conference on Computing for Sustainable Global Development, INDIACom 2014, New Delhi	2014
82.	Parallel Heuristics for the Bounded Diameter Minimum Spanning Tree Problem	C Patvardhan V PPrakash A Srivastav	Proceedings of 11th IEEE India Conference, INDICON, Pune	2014
83.	Robust Temporal Video Watermarking Using YCbCr Color Space in Wavelet Domain	AK Verma Mayank Singhal C Patvardhan	3rd IEEE International Advance Computing Conference (IACC-2013), pp. 1184-1189, 22-23 Feb,.	2013
84.	Robust content based image retrieval based on multi-resolution wavelet features and edge histogram	C Patvardhan Ajay Verma C Vasantha Laskhmi	Proceedings of IEEE Second International Conference on Image Information Processing (ICIIP), 2013 , 9-11 Dec., Pp 447 – 452	2013
85.	A Complete OCR System for Telugu Document Images with Complex Backgrounds	C Vasantha Lakshmi, Sarika Singh and C Patvardhan	-do-	2013
86.	On Line Fault	Chaturvedi D.K.,	IEEE Co-Sponsored 7th	2013

	Identification of Induction Motor using Fuzzy System Panipat (Hariyana), Souvenir – pp.61, proc. pp.106-112, 16-Nov. 2013	Akash Gautam, Mayank Pratap Singh, Md. Sharif Iqbal	International Conference on Advanced Computing and Communication Technologies (ICACCT™-2013) & INDERSCIENCE Publishers, UK, IETE, IEE Computer society and Asia Pacific Institute of Information Technology SD India	
87.	Health Monitoring Techniques of Induction Motor: An Overview IEEE and Geeta Institute of Management and Technology, Kurukshetra, India, PP. 469-477, 25-27 October, 2013	Chaturvedi D.K., Md. Sharif Iqbal, Mayank Pratap Singh	4th International Conference on Emerging Trends in Engineering and Technology (IETET- 2013)	2013
88.	Unmanned Package Delivery System	Ankit Yadav, Parman Josan, G.S.S. babu	XLI –National System Conference NSC-2017, DEI, Agra	2017
89.	A Study of Generation of Biogas from Kitchen Waste & Cow dung: An Experimental Analysis	Ravindra Bharadwaj, G.S.S. Babu A.K. Saxena	XLI –National System Conference NSC-2017, DEI, Agra	2017
90.	A TQM approach for Engineering Education in 2020	C Patvardhan C V Lakshmi	Presented at 2-day Conference on Quality and Values in Science, Engineering and Management Education, DEI, Agra	2015
91.	Determination of Optimal Features Database for OCR of Printed Telugu Text	C V Lakshmi, Sarika Singh, C Patvardhan	National Systems Conference, NSC 2015	2015
92.	A wholistic education system	C VLaskhmi C Patvardhan	Presented at 2-day Conference on Quality and Values in Science, Engineering and Management Education,	2015

			DEI, Agra	
93.	Health Analysis of Cooling System in Induction Motor Jamia Millia Islamia, New Delhi,India, pp. 285-293., 2nd - 3rd February 2015.	D.K.Chaturvedi, Md. Sharif Iqbal & Mayank Pratap Singh	National conference on Emerging Trends in Electrical and Electronics Engineering (ETEEE - 2015),	2015
94.	Design of Reversible Quantum Equivalents of Classical Circuits Using Hybrid Quantum Inspired Evolutionary Algorithm	Swanti Satsangi, C. Patvardhan	Advanced Computing Conference, 2015, pp. 258-262.	2015
95.	An Artificial Bee Colony Algorithm for the Bounded Diameter Minimum Spanning Tree Problem	C Patvardhan V PPrakash A Srivastav	Proceedings of the 38th National Systems Conference, NSC 2014, Hyderabad	2014
96.	Health Monitoring of Three Phase Induction motor, Sachdeva Institute of Technology, Farah, Mathura and The institution of Engineers (India) Agra Local Chapter. 8 March 2014	D.K. Chaturvedi, Md. Sharif Iqbal & Mayank Pratap Singh	National Conference On Soft Computing	2014
97.	Analysis of Vibration Signal to Detect the Faulty Condition of Induction Motor IEEE Sponsored National Conference Organized by Electrical and Electronics Engineering (EEE) Department, Galgotias College of Engineering and Technology, Greater Noida, India, 28-29 March, 2014.	D.K.Chaturvedi, Md. Sharif Iqbal & Mayank Pratap Singh,	IEEE Sponsored National Conference On Energy, Power And Intelligent Control Systems (Epics)	2014

98.	Soft Computing Techniques for Parameter Estimation, Eshan College of Engineering, Mathura U.P., pp. . 32-36.. 15-16 Nov. 2013	. K. Chaturvedi, Mayank Pratap Singh & Md. Sharif Iqbal	National conference on Globalized Leading Edge Technologies in Engineering (GLETE 2013)	2013
99.	Stress Analysis of Induction motor during its starting under different operating conditions Eshan College of Engineering, Mathura U.P., pp. 1-5. 15-16 Nov. 2013	D. K. Chaturvedi, Mayank Pratap Singh & Md. Sharif Iqbal	National conference on Globalized Leading Edge Technologies in Engineering (GLETE 2013)	2013
100.	Different faults in an Induction Motor and Their Diagnostic Techniques Eshan College of Engineering, Mathura U.P., pp. . 20-25... 15-16 Nov. 2013.	D.K.Chaturvedi, Md. Sharif Iqbal & Mayank Pratap Singh	National conference on Globalized Leading Edge Technologies in Engineering (GLETE 2013)	2013

- Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (5) **Awarded: 16 Submitted: 02 Ongoing: 13**

Name of the PhD scholar	Name of the Guide	Title of the thesis	Year of award of PhD
Raghvendra Sharma	Prof. V.Prem Pyara	Characterization, coding and identification of sounds of some musical instruments	2015
Amit Saraswat	Dr. Ashish Saini Prof. A.K.Saxena	Optimal Reactive Power Management in Competitive Electricity Market	2013
Prakash Sahni	Dr. Shiroman Prakash Prof. H Saran, IITD	Challenges in Quantum computing: quantum algebraic algorithms	2018
Deepak Singh	Prof. D. B. Das Dr. K. Srinivas	Optimization of Mobile Telecommunication Network Design and Operations Using Metaheuristic Search Techniques	2015
Amit Mishra	Prof. A.K.Saxena	Data Mining Applications in Power Systems	2017

V Sumati	Prof C Patvardhan Prof GS Adhar, University of North Carolina, USA	Parallel Soft Computing Models and their Applications	2018
Neeraj Tiwari	Prof. D. B.Das Dr. G.S. Sailesh Babu	Design, Development and Hardware Realization of Comprehensive Monitoring and Control Strategies for Solar Photovoltaic Power Plants	2016
Varun Maheshwari	Prof. D. B. Das Prof. A. K. Saxena	Design and Development of FPGA Based Relays for Modern Power System Protection Schemes	2016
Tanveer Qamar	Prof. D.K.Chaturvedi Prof. Man Mohan	Inverted Pendulum Control Using Soft Computing Techniques	2018
Swanti G. Satsangi	Prof C Patvardhan Prof PK Kalra, IITD	Automatic Design of Quantum Circuits	2018
Sarika Singh	Prof C V. Lakshmi Prof C Patvardhan	Techniques for the development of multi font printed text OCR system for Indian scripts	2018
Mayank Pratap Singh	Prof. D.K.Chaturvedi Prof. Man Mohan	Parameter Estimation of Three Phase Induction Motor: An Innovative Approach	2018
Sulabh Bansal	Prof C Patvardhan Prof A Srivastav, Kiel University	Algorithm Engineering for solution of some Hard Combinatorial Optimization problems	2018
Yogesh Gupta	Dr. Ashish Saini Prof. A.K.Saxena	Soft Computing Techniques for improving Information Retrieval System	2018
Ashish Chandhok	Prof. D.K.Chaturvedi	Unified Cooperative Enactive Social Cognitive Artificial System for Solving Real World Problems	2018
Md. Sharif Iqbal	Prof. D.K.Chaturvedi	Health Monitoring System for Three Phase Induction Motor using Soft Computing Techniques	Submitted
Sushobhit Singh	Prof. A.K.Saxena Prof.P.K.Kalra,IITD	efficient algorithms for timing analysis and signal integrity for VLSI Circuits	Submitted
V. Prem Prakash	Prof C Patvardhan Prof A Srivastav, Kiel University	Heuristics and meta heuristics for some constrained spanning tree generation problems	Submitted

5.8.2. Sponsored Research (20) = 20 Marks

Project Title	PI/Co-PI	Funding Agency	Amount Sanctioned	Duration (Years)

			(Rs. In Lacs)	
Design & Development of hybrid renewable energy micro-grid with value chain applications for Agriculture &Dairy farm (DST-MI)	Prof. D. B. Das Prof. A.K. Saxena Dr. G.S.S.Babu Sh. G.P. Rana	DST-MI	Rs. 223.945	2018-2020
Indo-German Project "Evolutionary Algorithms for parameter optimization of whole ocean Coupled Biogeochemical Models and for Genome Assembly"	Prof. C Patvardhan	DST	Rs. 5.90	2017-2020
Design and development of robust watermarking system for still images and videos	Prof. C Patvardhan	MICT	Rs. 42.00	2014-2017
Quantum and Nano-computing Virtual Centre	Prof. V. Sahni	MHRD	Rs. 650.00	2009-2015
Power Lab (Simulation) Virtual Lab Phase – II	Prof. D.K. Chaturvedi	MHRD	Rs. 24.60	2012 - Contd.
Virtual Power Lab	Prof. D.K.Chaturvedi	MHRD	Rs. 70.50	Contd.
Design and development of Smart Micro Grid with optimal solar/grid power synergy. (DST-SERI)	Prof. D. B. Das, Prof. A.K. Saxena	DST-SERI	Rs. 58.49	2015-2018

5.8.3. Development activities (15)

A. Product Development

Developed a Two-Axis Sun Tracker for SPV Plants for BHEL	3318/CHE/2013
Developed a Single Axis Sun Tracker for Pole Mounted Solar Plant for Solar Agriculture Farm and applied for Patent	2015

Developed a FPGA Based Relay for Sense and Communicate and filed for Patent	2016-2017
Virtual Power Lab	2012 onwards
Development of Smart Microgrid	2015
Design and development of integrated 5 kWp SPV-wind system at DEI ICT DE Center, MTV Puram	2014
Design and development of prototype of Mobile SPV Plant for industries	2017
5kWp SPV system in DEI ICT Center, Murar	2016
10kWp SPV system in DEI ICT Center, Amritsar	2016
25 kWp distributed SPV system in DEI ICT Center, Rajaborari-Timarni	2010
Remote monitoring and control system of STP Pumps	2016
Automatic Security Alarm system for DEI Girls Hostels	2015
Solar Electric Van converted from diesel van	2009
Solar Thermal cooking system for DEI hostels	2010-2011
Design and commissioning of 25.5kWp SPV system in Dayalbagh	2010
DPR for Green Campus for Nagar Panchayat, Dayalbagh	2014
DPR for implementation of Renewable energy systems at Sewagram Ashram,	2015
Design and implementation of distributed SPV power plants of total capacity - 650 kWp	2010 onwards
Energy audit of Dayalbagh Colony	2014
Tracking of cattle using RFID Tag implementation for RSS Gaushala	2016
Precision dairy farming software	2017
Low cost water trough for Gaushala	2016
GPS based Live vehicle tracking system for RSS agriculture farm	2015

- **Research Laboratories:**

1. Multimedia Laboratory
2. Virtual Labs for Power Systems Lab.

3. Instrumentation Laboratory
4. Quantum Computing Laboratory
5. State of the Art Real Time Simulation Lab with OPAL-RT Simulator
6. Computer-Aided Design Laboratory
7. Electrical Engineering Workshop
8. Renewable Energy Lab.
9. Advanced Power Systems lab with Transmission line Simulator
10. E-Classrooms: State-of-the-art e-classrooms have been setup in different Faculties in the Institute. Most of the e-Classrooms have the following facilities: Overhead projection, smart interactive boards, recording and archiving of lectures in digital format and full interactive video conferencing for lecture transmission and interactions.
11. High Performance Computing A 24 Blade, Dual Xeon, 6 core, processor based high performance computing cluster has been setup at the Multimedia Laboratory at DEI. With specialized software such as multiuser MATLAB and connection to the Institute LAN, the cluster is accessed by students and faculty members across the University for research involving parallel computing and compute intensive simulations. One of the blades is also a CUDA™ parallel computing platform.

- **Instructional materials**

  Question Banks comprising of indicative set of questions are given to students in all theory courses as mandatory practice

  Lab Manual of following lab courses is provided

  Basic Electronics Lab

  Measurements Lab

  Electrical Machines Lab

  C Progragmming Lab

  Microprocessors Lab

  Analog Electronics Lab

  Power Systems Lab etc.

  Besides the lab manuals for internal circulations, following have been published/ hosted of public circulation

- Power Systems Lab.: Virtual Simulation: It is hosted on National Portal of Government of India. http://msvs-dei.vlabs.ac.in/
- Instruction Material for Modelling & Simulation

- Instruction Material for Electrical Machines Lab.,(Published by University Scientific Press, Delhi)

Instructional Material in Theory courses

Instructional material in the form of Tutorial sheets, Study material and course notes are provided in the following courses

Basic Electrical Engineering
Basic Electronics
HVDC Transmission
Modelling and Simulation
Applied Systems Engineering
Agricultural Engineering
Comparative study of Religions
Cultural Education
General Knowledge and Current Affairs
Communication Engineering
Microprocessors and Microcontrollers

- **Working models/charts/monograms etc. :**

Several working models are being used/displayed for laboratory experiments

Instructional charts for performing experiments are being displayed in the department and laboratories.

Charts on general and electrical safety are being displayed in all labs

Charts of Standards, wire gauges, working of lab equipment viz. CROs etc. are displayed in laboratories.

Chart of electric shock treatment procedures

5.8.4. Consultancy (from Industry) (20) = 20 Marks

S. No.	Year	Funding Agency	Specs	Amount
1	**2018-19**	Agra Smart City, Agra	Technical Vetting of DPRs Testing of Meters, Motors, Pumps etc.	17,00,000.00
2	**2017-18**	Calibration & Testing of Instruments		53750.00
3	**2016-17**	Calibration & Testing of Instruments		7750.00
4	**2015-16**	Calibration & Testing of Instruments		19750.00

Calibration & Testing of Instruments for the following Companies are carried out:

1. M/s . Atul generators Pvt. Ltd., Agra
2. M/s. B.S.A. industries, Agra
3. M/s. Swaroop Pumps, Agra
4. M/S. Prakash Agricultural Industries,
5. M/s. Hanuman Electricals, Agra

6. M/S. K C P R Mathura
7. M/s. Sniper Leathercraft Pvt. Ltd.,
8. M/s. Bharat Industries, Agra
9. M/s Bharat Agriculture, Agra
10. M/s. Basant Industries, Agra
11. M/s. Shinning Engg. Works, Agra
12. M/s. B. R. Enterprises, Agra
13. M/s. Kamlesh Kr Singh Engg. Pvt. Ltd., Mathura
7. M/s. basant ispat Udyog, Agra
11. M/s. Shriram Diesel India, Agra
12. M/s. Amar Engg. Company, Agra
13. M/s. Ratan Construction Company, Mathura
14. M/s. Kartik Construction Co., New Delhi
15. M/s. Perfect Engg. Works, Agra
16. M/s. Agra Smart City, Agra