

## FACULTY PROFILE

Name of the Staff : **Dr. L.KALAIVANI**  
 Official Address with E-mail Id : PROFESSOR  
 NATIONAL ENGINEERING COLLEGE  
 K.R.NAGAR  
 KOVILPATTI – 628 503  
 THOOTHUKUDI DISTRICT  
 Mobile Number : 98430 08500



### 1. Personal Details :

Age : 48  
 Date of Birth : 01/08/1976  
 Sex & Marital Status : Female & Married  
 Citizenship : Indian  
 Qualification : Ph.D.,

Degree	Programme and Specialization	Class /CGPA	Month &Year of Passing	Institute/University
Ph.D	Electrical Drives and Control	-	Nov 2013	Anna University , Chennai
M.E.	CSE	1 <sup>ST</sup> Class with Distinction 86%	June 2008	National Engg. College Kovilpatti/ Anna University Chennai
B.E	EEE	1 <sup>st</sup> Class with Distinction 77.36%	April 1999	Government College of Engg, Tirunelveli/ Manonmaniam Sundaranar University

Date of joining : 16.07.2001  
 Present status : Professor  
 Professional Experience :

Designation	Institution/ Organisation	Period	Nature of Duties
Lecturer	National Engineering College, Kovilpatti	16.07.2001	Teaching and Research
Senior Lecturer		01.06.2009	
Assistant Professor(SG)		01.11.2011	
Associate Professor		10.07.2013	
Professor		27.12.2017	

### Courses taught:

Course Title	U.G. or P.G.
Electrical Machines I, Digital Signal Processing, Linear Integrated Circuits and its Applications, Special Electrical Machines, Circuit Theory, Electron Devices, Electronics Circuits, Control Engineering, Soft Computing Techniques and Power Electronics for Renewable Energy Systems	U.G
High Voltage Generation and Measurements, Soft Computing Techniques, Advanced Digital Signal Processing, EHV Power Transmission	P.G

## 2. Academic Achievements

### 2.1 Short term Courses / Seminars / Conference/ Workshops organized :

Sl. No	Title	Period	No. of Participants	Venue
1	Computer Simulation Tools CST'06	16 <sup>th</sup> November 2006	25	National Engg. College, Kovilpatti
2	Soft Computing Techniques SCT'07	12 <sup>th</sup> October 2007	25	
3	National Conference EICON '09	1 <sup>st</sup> September 2009	25	
4	DRDO Sponsored Seminar 'Artificial Intelligence based Electrical Machines and Drives' –AIEMD'08	19 <sup>th</sup> & 20 <sup>th</sup> February 2008	25	
5	DRDO Sponsored Seminar 'Soft Computing Techniques and its Applications in Electrical Engineering' SCTAEE'11	August 4 & 5, 2011	53	
6	'Implementation of Soft Computing Techniques using MATLAB'	September 27 -29, 2011	27	
7	CSIR Sponsored Seminar 'Design, Modelling and Control of Electrical Machines and Drives'- DMCEM'2011	October 18 & 19, 2011	27	
8	DRDO Sponsored Seminar 'Energy Efficient Artificial Intelligence Drives – Recent Trends and Perspectives'- EEDRTP '12	September 14- 15, 2012	30	
9	'Implementation of Soft Computing Techniques using MATLAB'	October 18-20, 2012	30	
10	"implementation of soft computing techniques using MATLAB" sponsored by IEEE-CIS	23.10.2013 to 25.10.2013	PG Student & Faculty	
11	"Implementation of soft computing techniques using Matlab" sponsored by IEEE-CIS	25.10.2014 to 27.10.2014	PG Student & Faculty	
12	"Implementation of soft computing techniques –ISCT '15" IEEE-CIS	5.08.2015 – 7.08.2015	Student	
13	"Hands on training on MATLAB Toolboxes-HTMT'16"	3 <sup>rd</sup> & 4 <sup>th</sup> March 2016	Student	
14	"Implementation of soft computing techniques –ISCT '16" IEEE-CIS	10.08.2017– 12.08.2017	30	
15	"Web Designing using Python –ISCT '16" Weby 18 IEEE-CS	21.02.2018	60	
16	"Implementation of soft computing techniques –ISCT '19" IEEE-CIS	24.01.2019 – 25.01.2019	30	
15	Machine Learning using Python	31.01.2020- 1.02.2020	60	

## 2.2 Short term Courses / Seminars / Conference/ Workshops Attended:

S.No	Title	Period	Venue
1.	Incorporating Human Values (UHV) in Technical Education	11.5.2020-15.5.2020	AICTE – New Delhi
2.	Planning and Administration for suitable Institutional Development : A two day colloquium for Higher Education Leaders	2.8.2019 – 3.8.2019	CIT-TLC Coimbatore
3.	AICTE, New Delhi Sponsored Short Term Course on “Engineering Optimization”	15.7.2019 – 19.7.2019	IISC- Bangalore
4.	innoWAH(PALS 2018-19)	16.03.2019	NEC. Kovilpatti
5.	Undergone Industry Know How at Enthu Technology Solutions India Pvt. Ltd., Coimbatore	22.10.2018 – 26.10.2018	Enthu Technology Solutions India Pvt. Ltd., Coimbatore
6.	Pedagogy for online and blended teaching learning process	3.5.2018 – 30.5.2018	IIT, Bangalore
7.	Research perspectives on Solar PV systems: Design, Simulation and Application	27.07.2017 & 28.07.2017	PSG college of Technology, Coimbatore
8.	Technology Enabled Learning	27.05.2017 to 29.05.2017	NEC, Kovilpatti
9.	IEEE Coimbatore Hub Congress	30.07.2016 & 31.07.2016	Jansons Institute of Technology, Coimbatore
10.	“Optimization Techniques for Engineering Applications”	29.01.2016 to 30.01.2016	Kongu Engineering College, Perundurai
11.	“Formulation of Research & Development Grant Proposals by Scientists and Technologies”	18.11.2015 to 20.11.2015	NEC, Kovilpatti
12.	Attended one day workshop on “Intellectual Property Rights & Innovations”	07.11.2015	NEC, Kovilpatti
13.	“Hands on Training on Soft Computing Techniques Using MATLAB”	09.10.2015 to 12.10.2015	MIT, Chennai
14.	NPTEL workshop organized IIT, Chennai	13.03.2015	NEC, Kovilpatti
15.	Short Term Course on “Control System”	02.12.2014 to 12.12.2014	Anna University of Technology, Tirunelveli
16.	“Empowering Indian Engineering Education for Global Expectations”	07.11.2014 & 08.11.2014	NEC, Kovilpatti
17.	Next Generation Technologies For Sun-Wind Energy Conversion	28/02/2014	National Engineering College, Kovilpatti
18.	MATLAB and Simulink for Engineering	07/01/2014	Mathworks, India at

	Education		Tirunelveli.
19.	Technical paper writing using MATLAB	30/11/2012	National Engineering College, Kovilpatti
20.	Research Methods for Academicians, Research scholars & Practitioners	17/11/2012	National Engineering College, Kovilpatti
21.	Soft Computing Techniques in Power System Design	24/05/10 – 06/06/10	Arunachalam College of Engineering for Women
22.	Time – Frequency Signal Analysis	07/07/09 – 12/07/09	IIT Madras
23.	Matlab for Scholars and Engineers	04/08/08 – 08/08/08	Govt College of Engineering, Tirunelveli
24.	Present and Future Trends in Intelligent Networks	15/11/2004 - 28/11/2004	Coimbatore Institute of Technology, Coimbatore
25.	FPGA based Controllers for PED	14/10/11 & 15/10/2011	National Engineering College, Kovilpatti
26.	High Voltage Engineering	31/05/04 - 05/06/04	MEPCO, Sivakasi
27.	Power system analysis	24/09/03 – 29/09/03	National Engineering College, Kovilpatti
28.	Recent Trends in High Voltage Engineering – REHIVE'08	03/10/2008	National Engineering College, Kovilpatti
29.	Embedded System Design and its application: Research Perception	19/09/08- 20/09/08	National Engineering College, Kovilpatti
30.	Modern trends in power Electronics	23/08/08	Francis Xavier Engineering College, Tirunelveli
31.	DSP based Control of Permanent Magnet Machines	31/03/06	Kamaraj College of Engineering and Technology
32.	Soft Computing Techniques-SCT'07	12/10/07	National Engineering College, Kovilpatti
33.	Recent Trends in Insulation Engineering – RETIE'07	01/09/07	National Engineering College, Kovilpatti
34.	Outcome based Technical Education	25/07/07	National Engineering College, Kovilpatti
35.	Virtual Instrumentation	17 <sup>th</sup> July 2004	National Engineering College, Kovilpatti
36.	Genetic Algorithm for power systems Optimization problems	07/05/04 – 08/05/04	Arulmigu Kalasalingam College of Engg., Krishnan Kovil.
37.	Women's Executive Development in Higher Education.	19/12/03 – 20/12/03	National Engineering College, Kovilpatti
38.	NIRF India Rankings - 2021 for Higher Educational Institutions	18th & 19th Jan 2021	Institute for Academic Excellence in Collaboration with collegiate Education & Technical Department, Govt.

			of Telangana
39.	Machine Learning with MATLAB & Deep Learning with MATLAB	14th – 16th Dec 2020	MATHWORKS, Training Services

### 2.3 Expert Lecture Delivered/Judge :

S.No	Title	Venue	Date	Participants
1.	Introduction About Mathcad And Its Application In Network Analysis And Synthesis Computer Simulation Tools CST'06	National Engg. College, Kovilpatti	16 <sup>th</sup> November 2006	25
2.	Measurement Of High Voltage High Voltage Testing Techniques HVTT'06	National Engg. College, Kovilpatti	26 <sup>th</sup> May 2006	25
3.	Generation Of High Voltage High Voltage Lab Traing Programme HVL'08	National Engg. College, Kovilpatti	January 2008	25
4.	'Implementation of Soft Computing Techniques using MATLAB'	National Engg. College, Kovilpatti	September 27 - 29,2011	25
5.	CSIR Sponsored Seminar 'Design, Modelling and Control of Eletrical Machines and Drives'-DMCEM'2011	National Engg. College, Kovilpatti	October 18 & 19,2011	25
6.	Soft Computing Techniques using MATLAB	Government College of Engg, Tirunelveli	November 1 & 2,2011	25
7.	'Implementation of Soft Computing Techniques using MATLAB'	National Engg. College, Kovilpatti	September 27 - 29,2012	25
8.	Introduction to MATLAB	National Engg. College, Kovilpatti	October 19-20, 2012	25
9.	Artificial Intelligence Techniques using MATLAB	Sardar Raja College of Engg, Alangulam	Febraruary 2, 2013	25
10.	National Level Technical Symposium Avalanche 2K13	Government College of Engg, Tirunelveli	Febraruary 27, 2013	-
11.	Power Electronics Applications to Power System-NACPEPS'14	Government College of Engg, Tirunelveli	April 16, 2014	-
12.	"Implementation of soft computing techniques using Matlab" sponsored by IEEE-CIS	National Engg. College	25.10.2014 to 27.10.2014	30
13.	"Implementation of soft computing techniques –ISCT '15" IEEE-CIS	National Engg. College	5.08.2015 – 7.08.2015	30
14.	"Hands on training on MATLAB Toolboxes-HTMT'16"	National Engg. College	3 <sup>rd</sup> & 4 <sup>th</sup> March 2016	30

	"Implementation of soft computing techniques –ISCT '16" IEEE-CIS	National Engg. College	10.08.2016 – 12.08.2016	30
15.	Introduction to MATLAB	National Engg. College, Kovilpatti	October 21, 2017	25
16.	Project Expo	Government College of Engg, Tirunelveli	October 2017	-
17.	OBE and its Implementation	Lakshmi Ammal Polytechnic College, Kovilpatti	23.05.2019	-
18.	Issues and Challenges in ON-Grid Solar PV System	Mepco Schlenk Engineering college, Sivakasi	21.12.2018	-
19.	Matlab based Mathematical Applications	St. Mary's College (Autonomous), Thoothukudi	12.07.2019	
20.	Digital Image Processing Using Matlab	St. Mary's College (Autonomous), Thoothukudi	18.9.2019 & 19.9.2019	-
21	Design of High Voltage Insulator using FEM in COMSOL software	SRM Valliammai Engineering College, Chennai	08.03.2021	
22	Patent Awareness	Noorul Islam Center for Higher Education	21.04.2021	
23	Design of Insulator using FEM in COMSOL software	Design of Insulator using FEM in COMSOL software	03.03.2021	
24	Wind Energy Conversion System	Francis Xavier Engineering College	04.03.2023	30
25	Image Processing	S Ramasamy Naidu Memorial College	09.02.2023	30

#### 2.4 Membership in Professional bodies:

Name of Society	Grade of Membership
ISTE	Life Member
IEEE	Member
Institute of Engineers (India)	Associate Member

#### 2.5 Research Achievements :

##### National/International Journal Publications

S.No	Title of the Paper	Name of the Journal	Vol.No & Page No.	Month & Year
1	Speed Control of Switched	International Journal of	Vol. 53, pp. 69-	2013

	Reluctance Motor with Torque Ripple Reduction using Non-dominated Sorting Genetic Algorithm (NSGA-II)	Electrical Power and Energy Systems <b>IF-3.427</b>	77	
2	Artificial Intelligence based Control for Torque Ripple Minimization in Switched Reluctance Motor Drives	Journal of Acta Scientiarum. Technology <b>IF - 0.159</b>	Vol. 36, No. 1, pp. 33-40,	2014
3	Non Linear Support Vector Machine Based Partial Discharge Patterns Recognition Using Fractal Features	Journal of Intelligent and Fuzzy System, IOS Press <b>IF - 0.75</b>	Vol.27, No.5. pp. 2649-2664	2014
4	Genetic Algorithm Based Automated Threshold Estimation in Translation Invariant Wavelet Transform for Denoising PD Signal	International Journal for Computation and Mathematics in Electrical and Electronic Engineering <b>I.F = 0.440</b>	Accepted for Publication	2015
5	Performance Study of building integrated Photovoltaic modules	Taylor & Francis	DOI:10.1080/17512549.2016.1275982	2017
6.	Collaborative approach on mitigating spectrum sensing data hijack attack and dynamic spectrum allocation based on CASG modeling in wireless cognitive radio networks	Cluster Computing <b>IF=2.040</b>	DOI 10.1007/s10586-017-1092-0	2017
7.	Performance analysis of semitransparent photovoltaic module for skylights	Energy <b>IF=4.968</b>	DOI.org/10.1016/j.energy.2018.08.043	2018
8.	Development of secured data transmission using machine learning-based discrete-time partially observed Markov model and energy optimization in cognitive radio networks	Neural Computing and Applications <b>IF=4.213</b>	DOI 10.1007/s00521-018-3788-3	2018
9.	A GOA-RNN controller for a stand-alone photovoltaic/wind energy hybrid-fed pumping system	Soft Computing <b>IF = 2.784</b>	Vol. 23, No. 23, pp. 12255-12276	2019
10.	Enhancement of Women Safety using RASPBERRY PI	International Journal of Innovative Technology and Exploring Engineering	Volume-9 Issue-7, May 2020	2020
11.	Abnormality Detection and Classification using Artificial Neural Network	International Journal of Scientific & Technology Research - [Impact Factor: 7.466]	IJSTR-0320-33283	March 2020
12.	Influence of Arc Flash Performance and ESDD Measurement of Bushings Tainted by Nitrates	International Journal of Engineering and Advanced Technology (IJEAT)	Volume-9, Issue-2, pp - 2326-2335. ISSN: 2249-8958	December 2019
13.	Optimal generation of output torque for industrial motors using variable frequency drive	International Journal of Recent Technology and Engineering (IJRTE)	ISSN: 2277-3878, Volume-8 Issue-4,	November 2019

	and gear box drive		November 2019	
14.	Harmonics mitigation techniques in renewable energy systems using SAPF	International Journal of Innovative Technology and Exploring Engineering	ISSN: 2778-3075, Volume-9 Issue-5, March 2020	March 2020
15	Recognition of Pollution layer location in 11KV polymer insulators used in smart power grid using dual input VGG convolutional neural Network	Energy Reports	<a href="https://doi.org/10.1016/j.egy.2020.12.044">https://doi.org/10.1016/j.egy.2020.12.044</a>	2021
16	Modeling and Power Quality Analysis of Grid-Connected PV Inverter with Active and Reactive Power Injection Mode	Journal of Electrical Engineering & Technology	Vol 6, Pages1375-1387 <b>IF (0.736)</b>	March 2021
17	EECCRN: Energy Enhancement with CSS Approach Using Q-Learning and Coalition Game Modelling in CRN	Information Technology and Control	Vol. 50, No. 1, pp. 171-187 <b>IF (0.905)</b>	2021
18	PSO Based Torque Ripple Minimization Of Switched Reluctance Motor Using FPGA Controller	Intelligent Automation & Soft Computing	Vol.29, No.2, 2021, pp.451-465	2021
19	Performance enhancement of SRM using smart bacterial foraging optimization algorithm based speed and current PID controllers	Computers and Electrical Engineering	Vol. 95, 107398) <b>( IF 3.818)</b>	2021
20	Breast Cancer Detection and Classification Using Deep CNN Techniques	Intelligent Automation & Soft Computing	Vol.32, No.2, pp. 1089-1107, <b>( IF 1.647)</b>	2022
21	Investigation on torque sharing function for torque ripple minimization of switched reluctance motor: A flower pollination algorithm based approach',	IETE Journal of Research (IF:1.877)	-	2022
22	An enhanced control method for torque ripple minimization of switched reluctance motor using hybrid technique	Journal of Intelligent & Fuzzy Systems (IF: 1.72)	Vol. 43, no. 1, pp. 1481-1504 DOI: 10.3233/JIFS-212519	2022



Patents Filed				
1.	A Gas Stove	The Official Journal of Patent Office	Issue No. 08/2020. Date: 28/02/2020	2020
2.	An apparatus for surveilling air Disseminating members	202241010736 A	03/04/2022	2021-22

#### International Conference Publications

S.No	Title of the Paper	Name of the Conference	Organizer	Month & Year
1.	Computational Model for Transformer Bushing Using Advanced Finite Element Method	ICAIS 2023	JCT College of Engineering, Coimbatore	2023
2.	IoT based Smart Controller for Ceiling Fan	ICOEI 2023	SCAD College of Engineering and Technology	2023
3.	Fuzzy Logic Controller based Power Factor Correction Converter for Industrial Applications	ICAIS 2022	JCT College of Engineering, Coimbatore	2022
4.	Smart Health Care Monitoring and Indoor Occupancy Control System using Arduino	ICECA 2022	RVS Technical Campus, Coimbatore	2022
5.	Fault Classification of Induction Motor Bearing Using Adaptive Neuro Fuzzy Inference System	ICEES'2019	SSN College of Engineering, Chennai	February 2019
6.	An investigation on Torque Ripple minimization of Switched Reluctance Motor using Different Power Converter Topologies using Intelligent Techniques	AISGSC 2019	PSG College of Engineering and Technology, Coimbatore	JANUARY, 2019
7.	Performance Analysis of Grid -tie inverter for reactive power injection mode in hybrid wind solar energy system	IEEE sponsored ICOEI 2018	SCAD College of Engineering and Technology, Cheranmahadevi	May 2018
8.	Investigating the Design Parameters of Switched Reluctance Motor Using FEA	ICIETET'18	Panimalar Institute of Technology, Chennai	March 2018
9.	A Comprehensive study of Multilevel inverter fed Switched Reluctance motor for Torque ripple minimization with multicarrier PWM strategies.	ICEES2018	SSN College of Engineering, Chennai	FEBRUARY , 2018
10.	Speed control of switched reluctance motor using FOPID controller	IEEE- E <sup>2</sup> IC <sup>2</sup> 2017	Karpagam College of Engineering, Coimbatore	January 2018
11.1	Enhancement of protective layer	ICAEEICB'17	Prathyusha	2017

.	coated bushing under Artificial coastal pollution conditions		Engineering College, Chennai	
12.	Event Based Background Subtraction for Arcing Discharge Pattern Recognition	7th International Conference on Advanced Computing	---	2016
13.	Analysis of partial discharge in underground cable joints	ICIIECS'15	Karpagam College of Engineering, Coimbatore	2015
14.	Performance Analysis of Cross-Linked Polyethylene(XLPE) cable insulation under different artificial defects	IEEE sponsored ICKCE'15	Mepco Schlenk College of Engineering, Sivakasi	2015
15.	Investigations on Critical Properties of Blended Edible Natural Esters based Insulating Oil	IEEE ICCPCT-2014	Nooru Islam Centre for Education, Kumaracoil	2014
16.	A Novel Extension Method To Identify Power Transformer Faults Using Fuzzy Logic System	(ATEE'13)	Kamaraj College Of Engineering & Technology	2013
17.	Interpretation Of Dissolved Gas Analysis In Transformer Oil Using Fuzzy Logic	ICPEC'13	PSNA College of Engineering & Tech	2013
18.	Evaluation & Prediction of Contamination Level In Coastal Region Insulator Based On Leakage Current Characteristics	IEEE ICCPCT-2013	Nooru Islam Centre of Education, Kumaracoil	2013
19.	Computation Of Electro Magnetic Forces In Transformer Winding Under Short Circuit Currents	International Conference, 2013	-	2013
20.	Intelligent Control of Torque Ripple Minimization in SRM	ICEES'11	SSN College Of Engg, Chennai	2011
21.	Analysis of Magnetic Field Distribution In Power System Using FEM	ICCCET'11	National College Of Engg Maruthakulam	2011
22.	Torque Ripple Minimization in SRM using ANFIS	ICRAES'10	K.S.R College of Engg Tiruchencode	2010
23.	Torque Ripple Minimization in SRM based on TSF And Modified Multilevel Converter	ICETES'10	Nice College of Engg, Thakalay	2010
24.	Human Action Detection using Neuro Fuzzy Inference Systems	ISSIS '09 Coimbatore	Coimbatore Institute of Tech.	2009
25.	Surface Discharge Analysis of Insulators in EHV/UHV Line	ICEE 2009	Pondicherry Engg. College Pondicherry	2009

### National Conference Publications

S.No	Title of the Paper	Name of the Conference	Organizer	Month & Year
1	Extraction of Arc and Features for Arcing Discharge Pattern Recognition	11th National Conference on Trends in Modern Power Electronics And Drives	-	2016
2	Analysis of Pollution Performances in Insulator Under Artificial Polluted Condition	PEDAC'09	Kamaraj College of Engineering And Tech.	2009
3	Human Action Detection using Neuro Fuzzy Inference Systems	APECT'08	Kalasalingam University	2008
4	Application of Evolutionary Programming to Combine Economic and Emission Load Dispatch Problem using Weighting Method	CIEEPS'06	Pondicherry Engg. College Pondicherry	2006
5	Application of Computational Methods to Combined Economic and Emission Dispatch Problem in Power System	PSE'06	Sri Ramakrishna Engg. College Coimbatore	2006

### Sponsored Projects:

Sponsored Agency	Title of the Project	Period	Main or co-investigator
DRDO	Four Quadrant Operation Of Switched Reluctance Motor With A Single Controllable Switch	3 Years	Co Investigator
INSTITUTION OF ENGINEERS (IE), KOLKATA	Performance Analysis and Breakdown characteristics of XLPE cables under different artificial defects	2014-2015	Main
Institution of Engineers (IE), Kolkata	Performance Analysis and Breakdown characteristics of XLPE cables under different artificial defects	2014-2015	Main

### Contributions to the College

- ❖ Programme Coordinator (BE\_EEE)
- ❖ IQAC -Coordinator
- ❖ IEEE SB Counselor
- ❖ Convener of Disciplinary committee in the Department
- ❖ Expert member for UG project review
- ❖ Member Academic Council
- ❖ Board of study member-NEC (Autonomous scheme)

- ❖ Computer Lab Incharge
- ❖ R&D Incharge

**Reviewer of the following International/National Journals:**

- ❖ International Journal of Electrical Power and Energy Systems.
- ❖ Journal of Intelligent and Fuzzy Systems.
- ❖ Electric Power Components and Systems.
- ❖ Majlesi Journal of Electrical Engineering.

**Conference attended – Session Chair:**

- ICCPCT-2014 at Noorul Islam University, Kumaracoil, March 20<sup>th</sup> and 21<sup>st</sup>, 2014.

**Reviewer of the following International Conference:**

- ICCPCT-2014 at Noorul Islam University, Kumaracoil, March 20<sup>th</sup> and 21<sup>st</sup>, 2014.
- International Web Conference on Smart Engineering Technologies, Ramco institute of Technology, 26&27 June 2020