Dr.V.Gomathy Professor & Head, Department of Electrical and Electronics Engineering.	**Photo**
Qualification	**B.E.,M.E.,Ph.D**
Area of Specialization	**Power Electronics, Power System, Soft Computing, Renewable Energy System**
Email	**gomathy@kathir.ac.in** **eeehod@kathir.ac.in**
Mobile Number	**9894733513**
Membership in Professional Bodies	**InSC, ISTE, IAENG**

Total Experience in (Years) :	
Industry	**Academic**
NIL	12.10 Years

Publication Details		
Number of Papers Published	**Journal Publications**	**Conference Publications**
	36	**11**

BOOKS & BOOK CHAPTERS:

- '**Detection and Isolation of Faults in Electrical Systems with Optimization**' by Lambert Academic Publishing (ISBN No: 978-3-330-35270-4).

- '**Embedded Codesign for Real time Operating System**' by Lambert Academic Publishing (ISBN No: 978-613-8-23530-9).
- '**Utilization of FACTS Devices in Power System**' by OmniScriptum Publishing , ISBN:978-613-9-86342-6

- **'Internet of Medical Things (IoMT) Enabled Skin Lesion Detection and Classification Using Optimal Segmentation and Restricted Boltzmann Machines'**, **Springer Book Chapter,** Studies in Systems, Decision and Control, Volume 311

JOURNAL PUBLICATION:

- **A novel deep learning-based approach for detecting attacks in social IoT (SCI),** Soft Computing, Pages 1-11, Springer Berlin Heidelberg publisher, 2023/5/10.
- **Energy efficient data transmission in intelligent transportation system (ITS): Millimeter (mm wave) based routing algorithm for connected vehicles (WOS, SCI),** OPTIK, volume 273, pages 170374, Urban & Fischer, 2023/2/1.
- **Optimal neutrosophic rules based feature extraction for data classification using deep learning model (SCOPUS, SCI),** Soft Computing for Data Analytics, Classification Model, and Control, pages 57-79, Springer International Publishing, 2022/1/30.
- **Quick Search Optimization Algorithm-Based Implementation of Virtual Power Plant for Distribution Network (SCI),** Advances in Intelligent Systems and Computing book series (AISC,volume 1163) , Pages 261-272, Publisher Springer Singapore, 2021.
- **An intelligent COVID-19 classification model using optimal grey-level co-occurrence matrix features with extreme learning machine,** International Journal of Computer Applications in Technology (SCOPUS), pages, 334-342, Inderscience Publishers (IEL), 2021.
- **Investigating the spread of coronavirus disease via edge-AI and air pollution correlation,** ACM Transactions on Internet Technology, Volume 21, Issue 4, Pages 1-10, July 2021.
- **Internet of Things-Based Advanced Metering Infrastructure (AMI) for Smart Grids (WOS),** Integration of renewable energy sources with smart grid, Pages 77-100, John Wiley & Sons, Inc, October 2021.
- **Internet of Medical Things (IoMT) Enabled Skin Lesion Detection and Classification Using Optimal Segmentation and Restricted Boltzmann Machines (SCI),** Studies in Systems, Decision and Control book series (SSDC,volume 311), pages 195-209, Springer International Publishing, 2021.
- **Malicious node detection using heterogeneous cluster based secure routing protocol (HCBS) in wireless adhoc sensor networks (WOS)** , Journal of Ambient Intelligence and Humanized Computing, https://doi.org/10.1007/s12652-020-01797-3, Received: 9 December 2019 / Accepted: 18 February 2020 © Springer-Verlag GmbH Germany, part of Springer Nature 2020.
- **Distribution Simulation for smart Farming Using UAV,** TEST Engineering and Management, volume 83, page.number:25209-25214, Publication Issue: March-April 2020.
- **A 2 × 20 Gbps hybrid MDM-OFDM–based high-altitude platform-to-satellite FSO transmission system,** J. Opt. Commun. 2020; aop, https://doi.org/10.1515/joc-2020-0075 Received April 3, 2020; accepted July 27, 2020
- **Design of Multivariable PI Controller for Distillation Column using Simulated Annealing Algorithm,** International Journal of Advanced Science and Technology, Vol. 29, No. 9s, (2020), pp. 2807-2814.
- **Non integer order PID controller tuning using grey wolf optimization method for Sea Water Reverse Osmosis Desalination process,** International Journal of Control and Automation Vol. 13, No. 2s, (2020), pp. 282-291
- **FAULT ANALYSIS IN POWER SYSTEM NETWORK USING FIRE FLY OPTIMIZATION TECHNIQUES** in Caribbean Journal of Science, Volume 53, and ISSUE 2 (MAY - AUG), 2019, ISSN: 0008-6452.
- **An Integrated algorithm for Detecting and Classifying the Faults in Power Systems in Journal of Electrical Engineering, pp.1-15, 2019.**
- **Feature Extraction and Application of Bio-Signal,** International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249 – 8958, Volume-8 Issue-6S2, August 2019.
- **Feature Extraction and Application of Bio-Signal,** International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-8 Issue-6S2, August 2019.
- "**Soft switched solar integrated power optimizer**" in Int. Journal of Pure and Applied Mathematics, **(Scopus Indexed)** Volume.119, No.12, 2018, pp 1655-1662, June 2018.

- **"Elliptic public key cryptosystem using DHK and partial reduction Modulo techniques"** in Int. Journal of Pure and Applied Mathematics , **(Scopus Indexed)** Volume.119, No.12, 2018, pp 1655-1662, June 2018
- **"Turbulence Mitigation Using Vibration Sensor and Imaging Processing Techniques"** Int. Journal of Pure and Applied Mathematics , **(Scopus Indexed)** Volume.119, No.12, 2018, pp 1773-1785, June 2018
- **"Early Heart Disease Detection Using Data Mining Techniques with Hadoop Map Reduce"** in Int. Journal of Pure and Applied Mathematics , **(Scopus Indexed)** Volume.119, No.12, 2018, pp 1915-1920, June 2018
- **"Iot driven vehicle license plate extraction approach"** in International Journal of Engineering and Technology(IJET) , **(Scopus Indexed)** Volume.7, 2018, pp 457-459, April 2018
- **"Embedded design in synchronistaion of alternator automation"** in International Journal of Engineering and Technology(IJET) , **(Scopus Indexed)** Volume No.7, 2018, pp 460-463, April 2018
- **"Real Time Environment Simulation through Virtual Reality"** in International Journal of Engineering and Technology(IJET) , **(Scopus Indexed**) Volume.7, No.7, 2018, pp 404-406, April 2018
- **"Voting scheme based estimation of vanishing points for road detection "** in Int.Journal of Current Engineering and Scientific Research(IJCESR-**UGC Journal)** Vol No. 5,Issue 2, 2018, 71-76,ISSN:2393-8374.
- **"IPSO based fault analysis in power transformer"** in Int.Journal of Pure and Applied Mathematics, (Scopus Indexed) Volume.117, No.22, 2018, pp 247-251, January 2018.
- **"Solar powered system-on-chip for meteorological data station"** in Int.Journal of Pure and Applied Mathematics, (Scopus Indexed).
- **"REAL TIME INTRUDER DETECTION USING PASSIVE INFRARED SENSORS"** in Int.Journal of Pure and Applied Mathematics, (Scopus Indexed).
- **"AN EXPERIMENTAL STUDY OF PRODUCTION OF BIO METHANE FROM KITCHEN WASTE"** in Int.Journal of Pure and Applied Mathematics, (Scopus Indexed).
- '**Fault Detection and Classification with Optimization Techniques for Three Phase Single Inverter Circuit**' in Journal of Power Electronics, vol. 16, no. 3, pp. 1097-1109,ISSN(Print): 1598-2092 / ISSN(Online): 2093-4718 , May 2016, (ANNEXURE-I).IF—0.777.
- **"A HYBRID OPTIMIZATION TECHNIQUE FOR FAULT CLASSIFICATION IN POWER TRANSFORMER USING DISSOLVED GAS ANALYSIS"** in Applied Mechanics and Materials (Annexure-II, Sl.No-1434), Volume.573, pp.708-715, June 2014.
- **"FAULT CLASSIFICATION IN ANALOG CIRCUITS USING EVOLUTIONARY ALGORITHMS"**, International Journal of Advanced Computing & Communication Systems, Volume.1, Issue.1, pp.1-6, March 2014.
- **"IMPLEMENTATION OF SVM USING SEQUENTIAL MINIMAL OPTIMIZATION FOR POWER TRANSFORMER FAULT ANALYSIS USING DGA"**, International Journal of Computers and Technology vol 10. No 5, pp.1596-1608, August 20, 2013. (Impact factor 1.341).

PATENT PUBLICATION:
- IPR-Patent titled '**INTELLIGENT TRACKING SYSTEM FOR VEHICLES**', Application No.202041045939 A, Date of filing of Application :21/10/2020
- IPR-Patent titled '**Sensor Based Acoustic Energy Harvester for Low Voltage Actuation**' Application No.202041000387, Date of filing of Application :17/01/2020
- IPR-Patent titled '**ONLINE MONITORING SYSTEM FOR FAULT ANALYSIS IN POWER TRANSFORMER USING DISSOLVED GAS ANALYSIS METHOD',** Application Number-201741041404//E-2/3537/2017-CHE was filed on 20.11.2017.
- IPR-Patent titled 'Internet **of things based Toggler device for Hybrid vehicle power pack**', Application Number-201841006122/E-1/6467/2018-CHE was filed on 17.02.2018.

Research Interests	*Type your Research Interests here:*
	Research Interests:
	- **FAULT DETECTION AND CLASSIFICATION OF TRANSFORMER AND THREE PHASE INVERTER BY USING OPTIMIZATION TECHNIQUES**
	Fault detection and isolation is an integral part of the fault diagnostic system to ensure the safety and reliability of the power system. The faults can be either open circuit fault or short circuit fault and it may lead to create failure on other components. This research methodology introduces a hybrid technique of Improved Particle Swarm Optimization (IPSO) with Support Vector Machine (SVM) for classifying the fault in power transformer by Dissolved Gas Analysis (DGA).Because, the optimization of SVM with the IPSO is needed to obtain better fault diagnosis rate so as to improve the service level of the power transformer. It also has high interpretation accuracy for DGA of power transformer by extracting positive features from the both SVM and IPSO techniques.
	Future Research Plans:
	➢ Drone Technology – Agricultural field
	➢ Electric Vehicle – Battery Management System
	➢ Breath Analyzer – Breast Cancer detection
	➢ Analysis on Switches – Energy efficient and long life
Other relevant achievements, awards and links:	*Type any other relevant links/Information here:*
	- **Google scholar :** https://scholar.google.com/citations?user=GDx_hGAAAAAJ
	- **SCOPUS ID :** https://www.scopus.com/authid/detail.uri?authorId=57201292613
	- **ORCID ID :** https://orcid.org/0000-0002-2023-140X
	- **LINKEDIN ID :** https://www.linkedin.com/in/gomathy-velmayil-6933b854/
	- **AU Supervisor Ref.No :** 4130011
	AWARDS RECEIVED:
	- Academic Excellence Award by Institute of Scholars(InSC)
	- Speaker for IEEE sponsored Workshop
	- University 2nd Rank in PG
	- Best Patent Publication Award
	- Best Book Publication Award
	- Best Research Paper Award
	- Installed Power System Simulation Lab for PG
	- Defended for DST DDP proposal at IIT Delhi
	Certification Courses Completed, (such as NPTEL, Coursera.):
	NPTEL:
	- Power System Analysis,
	- Emotional Intelligence,
	- Accreditation and Outcome Based Learning
	Coursera :
	- Child Nutrition and Health,
	- Electric Vehicle Design
	UDEMY:
	- Master Your Brain