

Dr. D. NIRMAL. M.E.,Ph.D.,FIETE.,SMIEEE.,MISTE.,C.Eng(l).,
Dean Academic Affairs, Associate Dean Engineering and Technology & Professor
(Department of Electronics and Communication Engineering)
Karunya Institute of Technology and Sciences
(Deemed to be University), Coimbatore, India - *641114*.
***NAAC ASSESSOR**, Government of India,*
R10 IEEE EDS SRC Chair,
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ABOUT MYSELF

Serving Humanity through Teaching, Research, Collaboration and Leadership with passion. Has a good record with 19+ years of experience in Electronics and communication Engineering.

RESEARCH INTERESTS

Nanoelectronics,1D / 2D Materials, Graphene, Carbon nanotubes, GaN Technology, Nanoscale device design and modelling, Device and circuit simulation- GSI,Sensors.

EXPERIENCE

- Professor, Electronics and communication Engineering, Karunya Institute of Technology and Sciences, Coimbatore, India , Nov 2020- Till Date
- Associate Professor, Electronics and communication Engineering, Karunya Institute of Technology and Sciences, Coimbatore, India , July 2013- October 2020
- Assistant Professor, Electronics and communication Engineering, Karunya Institute of Technology and Sciences, Coimbatore, India, June 2009- June 2013
- Lecturer, Electronics and communication Engineering, Karunya Institute of Technology and Sciences, Coimbatore, India , June 2007- May 2009

POSITIONS OF RESPONSIBILITY

- **Dean Academic Affairs**, Karunya Institute of Technology and Sciences, Period- May 2026- Till Date
- **Associate Dean Engineering and Technology**, Karunya Institute of Technology and Sciences, Period- July 2023- Till Date.
- **Head of The Department**, Electronics and communication Engineering, Period- June 2018- June 2023.
- **Teaching and Research,** VLSI Laboratory and Centre for research in Semiconductor Devices, Karunya University, Period – July 2007 to Till Date.
- **Co-ordinator Post Graduate programme,** Place- Department of Electrical Technology (EEE,ECE,E&I and Media) Karunya University, June 2016- June 2018.
- **IEEE Student branch counsellor,** Karunya University, June 2016- till date.

RESEARCH PROFILES

1	Google Scholar Profile	https://scholar.google.co.in/citations?user=IdAzwA8AAAAJ&hl=en
2	Scopus Profile	https://www.scopus.com/authid/detail.uri?authorId=36816416200
3	LinkedIn Profile	https://in.linkedin.com/in/dr-d-nirmal-m-e-ph-d-smieee-lmiete-miste-558a3963
4	Research Gate Profile	https://www.researchgate.net/profile/Dnirmal_Phd
5	ORCID Profile	https://orcid.org/0000-0002-9751-2816
6	Publons - Web of Science Profile	https://publons.com/researcher/1407130/drnirmal-mephd/
7	Web of Science Profile-Researcher ID	http://www.webofscience.com/wos/author/record/A-8563-2015

PATENTS

1	A Multilayer GATE MOSFET for Reducing Short Channel Effect, Indian Patent Application No:20204109570– Granted.
2	Biowaste Derived Carbon Electrode Super Capacitor, Indian Patent Application No: 20204 047605A – Granted.

RESEARCH PROJECTS ONGOING

#	Tittle of the project	Funding Agency	Amount	Year
1	Micromovement-Based Analytics for Mental Health Monitoring and Intervention	Analog Devices India Pvt. Ltd. (ADI)	15.41Lakh	2025-2026

RESEARCH PROJECTS COMPLETED

#	Tittle of the project	Funding Agency	Amount	Year
1	Design and Fabrication of Hyperspectral Camera for remote sensing	IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF)	80.89 Lakh	2024-2025
2	Design and Development of GaN HEMT for 18 GHz to 40 GHz	Defense Research and Development Organization, Govt. of India	27.756 Lakh	2022-2025
3	Design and Fabrication of Cascode Driver Circuit using GaNHEMT on Si for space applications	Indian Space Research Organization, Govt. of India	30.44 lakh	2019-2022
4	Modernization of RF laboratory with MIMO-SDR platform	All India Council for Technical Education	12.43 Lakh	2019-2021
5	Modelling And Simulation of Tunnel FETS for Low Power Applications	Department of Electronics and Information Technology, Govt. of India	25 lakh	2016-2021
6	A compact modelling of GaN Based FP-HEMT Device for High power microwave Applications	Defense Research and Development Organization, Govt. of India	21.98 lakh	2017-2019
7	Development Of Bio-Compatible Cellulosic Printed Circuit Board For Flexible Electronics	Tamil Nadu State Council for Science And Technology	0.1 lakh	2017-2018
8	Growth of GaN Thin Film On Silicon Using PLD Method For High Electron Mobility Transistor	Karunya University	0.25 lakh	2017

SUMMARY OF INTERNATIONAL JOURNAL/ CONFERENCE/ BOOKPUBLICATIONS – (Given in Annexure)

Year	International Journal Publications	International Conference Publications	National Conference Publications	Book/Chapter
2009 – 2026	**126**	**57**	**5**	**14**

FELLOWSHIPS, AWARDS AND ACADEMIC ACHIEVEMENTS

1	Best Researcher award – IEEE Madras section 2023
2	Best Publication Award – IEEE Madras section 2023
3	Received IETE Smt. Manorama Rathore memorial award 2022 from IETE.
4	Karunya university Achievers Award 2019-2020 for obtaining funded project from AICTE
5	Karunya university Achievers Award 2018-2019 for obtaining funded project from ISRO
6	Young Achiever Award 2020 from Institution of Engineers, Coimbatore Chapter
7	Certificate of recognition for publishing in IEEE journal from Madras Section 2020
8	Received Best IEEE Volunteer Award 2020 from IEEE Madras Section
9	Received Young Scientist Award 2019 from the Academy of Sciences, Chennai
10	IEI Young Engineers Award- Electronics and Telecommunication Engineering- 2017.
11	Karunya university Achievers Award 2016-2017 for obtaining funded project from DRDO.
12	IEEE Madras Section Professional Achievement in the year 2016.
13	IEEE Electron Device Coimbatore Founding Chapter Chair (2015-2020).

14	Best Researcher Award from Karunya University in the year 2014.
15	Shir.P.K.Das Memorial Best Faculty Award in the Year 2013 by Nehru College of Educational and Charitable Trust.
16	Best Research Paper Award with high impact factor from Karunya University in the year 2012.
17	Received Shiksha Rattan Puraskar Award 2012 from Indian International friend ship Society.
18	Distinction in Master of Engineering (VLSI DESIGN)
19	Best Paper Award from Solid State Electronics Letters on January, 2021.

TEACHING INTERESTS

VLSI Design, CMOS VLSI Technology, Nano electronics, Solid State Device Modeling, Microelectronics, Solid State Electronics, Electron Devices, Microwave and Optical Engineering.

RESEARCH GUIDANCE

Research guidance as supervisor	Completed	Ongoing
Doctor of Philosophy - PhD	11	6
Post Doctoral Fellow - PDF	-	1

EDUCATION

Ph.D., Faculty of Information and Communication Engineering, Highly Commended.

(Specialization in Nano Device Modelling), Anna University, Chennai- 2012, India

MEng VLSI Design, 2007 [First Class with Distinction] , Karunya University, India

BEng Electrical and Electronics, 2005, Anna University, Chennai, India

Post Graduate Diploma in Higher Education Indira Gandhi National Open University, 2015, India

PROFESSIONAL SOCIETY ACTIVITIES

- Fellow of IETE (The Institution of Electronic and Telecommunication Engineers) M-215257
- Senior Member of IEEE (Institute of Electrical and Electronics Engineering)SM-92838928.
- Life Member of ISTE(Indian Society for Technical Education)LM-56881
- Life Member of SSI(Semiconductor Society of India)
- Member of Institute of Engineers (India)M-1544705.
- Life Member of IAENG(International Association for engineers)

REVIEW ASSIGNMENTS FOR SCIENTIFIC JOURNALS/ SOCIETIES

- 2025 Golden reviewer of IEEE Electron Device Letters
- 2025 Golden reviewer of IEEE Transactions on Electron Devices
- International journal of Microelectronics (MJS) Elsevier.
- International Journal of Microelectronics Reliability Elsevier.
- International journal of Superlattices and Microstructures Elsevier.
- All IEEE Young Engineer's Humanitarian Challenge 2016- Jury member.

EDITORIAL MEMBER FOR JOURNAL

- AEÜ - International Journal of Electronics and Communications - Editor
- Microelectronics Journal – Editor
- IEEE Transactions on Nanotechnology - Guest Editor
- Materials Today: Proceedings - Guest Editor
- Computers & Electrical Engineering - Guest Editor

INTERNATIONAL ADVISORY COMMITTEE: **Several.**

NATIONAL & INTERNATIONAL COLLABORATION:

- ISRO(Indian Space research organization), Government of India- Dr. Manish K Hooda
- DRDO(Defence research and Development Organization), Ministry of Defence- Dr. Subash Chandar.
- Arizona State University,USA – Prof.Dragica Vasileska
- Universiti Sains Malaysia (USM),Malaysia - Dr. Mohd Syamsul Nasyriq
- Lund University,Sweden - Prof. Maria Messing
- National Yang Ming Chiao Tung University, Taiwan – Prof. Pei-Wen Li

TITLE: (Attached in Annexure)

- International conference resource person: 28
- National conference resource person : 2
- Workshop organized : 5
- International / national resource person: 78
- International courses/seminar attended: 9
- National courses / seminars attended: 27

RESEARCH CONSULTANCY

Consultancy work is carried out for DRDO in Technology Computer aided tool(TCAD) in 2017.

REFERENCE

Dr Manish Kumar Hooda
Director (Technologies)
Indian semiconductor Mission,
Ministry of Electronics and Information Technology, Government of India
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BRIEF BIO-SKETCH IN PARAGRAPH FORMAT

Dr. D. Nirmal is a Full Professor in the Department of Electronics and Communication Engineering and currently serves as Dean Academic Affairs, Associate Dean – Engineering and Technology at Karunya Institute of Technology and Sciences, India. He has been instrumental in leading academic reforms with a focus on outcome-based education, competency-driven curriculum architecture, and continuous outcome assessment systems, while also contributing to national-level accreditation frameworks and institutional quality enhancement initiatives.His research expertise spans physics-based modeling and TCAD simulation of advanced power semiconductor devices, Gallium Nitride (GaN) High Electron Mobility Transistors (HEMTs), device design and fabrication, reliability and failure analysis, and system-level circuit integration. His work emphasizes predictive modeling for device performance optimization, electro-thermal effects, and long-term reliability assessment in wide-bandgap semiconductor technologies. Dr. Nirmal has attracted research funding amounting to ₹2.1Crores from premier Indian funding agencies including DRDO, ISRO, the Ministry of Electronics and Information Technology, and AICTE. He has also secured innovation-oriented grants for product development through industry and research collaborations with the IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF) and Analog Devices India Pvt. Ltd.

Dr. Nirmal is the founding Chair of the IEEE Electron Devices Society (EDS) Coimbatore Chapter and presently serves as the IEEE EDS Region 10 SRC Chair, contributing to strategic planning and student engagement across the Asia–Pacific region. In addition, he actively participates in several IEEE technical committees and serves as a technical committee member for the EDS Compound Semiconductor Devices and Circuits community.His contributions to semiconductor research and technical education have been widely recognized, including the IEI Young Engineer Award, the IETE Smt. Manorama Rathore Memorial Award (2022), and the Young Scientist Award (2019) from the Academy of Sciences.A prolific researcher and technologist, Dr. Nirmal has authored over 180 peer-reviewed publications and holds three patents. He is a Fellow of IETE and a Senior Member of IEEE, and is frequently invited as a keynote speaker at national and international technical forums, where he presents on emerging device technologies, reliability engineering, and advanced semiconductor system design.

ADDRESS FOR COMMUNICATION

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D. Nirmal

INTERNATIONAL JOURNALS PUBLICATIONS

2026	
126	Raj, A.T., Michel, A., Angelin, A.D., Messing, M. and **D Nirmal**., "A nanogenerator review of current trends, advancement and future directions"*(2026) Materials for Renewable and Sustainable Energy* , *15*(2). **(Impact Factor : 6.6)**
125	Kumar, V., Priyadharshni, R., **D. Nirmal** and Balanethiram, S., "Improving spike reliability of high-speed, energy-efficient TFET-based LIF neurons through Miller capacitance suppression" (2026) *Micro and Nanostructures*, 208690. **(Impact Factor : 3.0)**
124	Michel, A., Syamsul, M., Arun Samuel, T.S., Anand, I.V., George, N.M. and **D. Nirmal**., "Analytical Modeling on Investigating the Electric Field Shift Behavior of GaN Vertical FinFETs"(2026) *ACS omega, 11 (24), 36246-36256* . **(Impact Factor : 5.2)**
123	Hinn, K.P.F., Michel, A., Jebalin IV, B.K., Wu, T.L., Samuel, T.A. and **D. Nirmal**., "Drift Layer Engineering for Electric Field Management in Vertical Gallium Nitride Fin Field Effect Transistors for Power Electronic Applications" (2026) *physica status solidi (a)*, *223*(7), e202500885. **(Impact Factor : 1.9)**
2025	
122	Franklin, S.A., Jebalin, B.K., Chander, S., Rawal, D.S., Du John, H.V. and **D. Nirmal**., "Demonstration of Fe-Doped GaN Buffer HEMT to Achieve fMAX of 167 GHz"(2025) *physica status solidi (a)*, *222*(24), e202500706. **(Impact Factor : 1.9)**
121	Justeena, A.N., Rajendiran, P., Mrabet, J., Ramasamy, S. and **D. Nirmal.,** "Investigation of Heavy-ion impact on Silicon Nanotube Tunnel FET SRAM"(2025) Silicon, 17(13), 3157-3165. **(Impact Factor : 3.3)**
120	Gracia, D., D. Jackuline Moni, and **D. Nirmal**., "Optimisation of Ion/Ioff and transconductance of germanium based dual metal gate hetero-dielectric TFET" (2025) *Micro and Nanostructures*, 202, 208128. **(Impact Factor : 3.0)**
119	Repaka, Lavanya, J. Ajayan, Sandip Bhattacharya, B. Mounika, A. Akshaykranth, and **D. Nirmal**., "A review of microelectronic AlGaN/GaN HEMT biosensors for the detection of various cancer diseases and bacterial/viral pathogens" (2025) *Microsystem Technologies*, 1-16. **(Impact Factor : 1.6)**
118	Angelin Delighta, A., J. S. Raj Kumar, I. V. Binola K Jebalin, and **D. Nirmal** (2025) "Nanosheet transistors: materials, devices, systems and applications" *Journal of Materials Science*, 1-38. **(Impact Factor : 3.5)**
117	Angen Franklin, S., Binola K. Jebalin IV, Subhash Chander, Sylvia Juliet Rani, and **D. Nirmal.,** "253 GHz fT Graded-Channel AlGaN/GaN High-Electron-Mobility Transistors with New Cliff Barrier for Millimeter Wave High-Frequency Applications" (2025) *physica status solidi (a),* 222(7), 2400552. **(Impact Factor : 1.9)**
116	Deshpande, Gauri, J. Ajayan, Sandip Bhattacharya, B. Mounika, Amit Krishna Dwivedi, and **D. Nirmal.,** "Impact of Gate Metals/High-K Materials and Lateral Scaling on the Performance of AlN/GaN/AlGaN-MOSHEMT on SiC Wafer for Future Microwave Power Amplifiers in RADAR & Communication Systems" (2025) *Results in Engineering*, 104156. **(Impact Factor : 7.9)**
115	Akshaykranth, A., J. Ajayan, Sandip Bhattacharya, **D. Nirmal**, Santhosh Paramasivam, Gianluca Gatto, and Amit Kumar., "Aggressively Scaled T-Gated GaN-on-Silicon RF Power HEMT Featuring Step Graded SRL-AlGaN Buffer for Next Generation Broad Band Power Amplifiers." (2025) *Results in Engineering*, 104151. **(Impact Factor : 7.9)**
114	Fletcher, AS Augustine, **D. Nirmal**, J. Ajayan, and P. Murugapandiyan., "Is SiC a predominant technology for future high power electronics?: a critical review" (2025) *Current Nanoscience*, 21(1), 37-51. **(Impact Factor : 1.4)**
113	Angen Franklin, S., Chander, S., Rawal, D. S., Victor Du John, H., & **D, Nirmal.,** "Optimization and High-Frequency Performance Evaluation of AlGaN/GaN High-Electron-Mobility Transistors Aspect Ratio Scaling for Millimeter-Wave Applications" (2025) *physica status solidi (a),* 2500251. **(Impact Factor : 1.9)**

2024	
112	Geege, A. Sharon, TS Arun Samuel, P. Vimala, and **D. Nirmal** ., "Label-free biomolecule detection with dielectrically modulated double gate single cavity InGaAs/GaAsSb HTFET: Design considerations and performance evaluation" (2024) *Micro and Nanostructures*, 196, 207992. **(Impact Factor : 3.0)**
111	Mounika, B., J. Ajayan, Sandip Bhattacharya, **D. Nirmal**, and Amit Krishna Dwivedi., "L_G= 50 nm T-gated and Fe-doped double quantum well GaN–HEMT on SiC wafer with graded AlGaN barrier for future power electronics applications" (2024) *Journal of Science: Advanced Materials and Devices*, 9(4), 100795. **(Impact Factor : 6.7)**
110	Shivaram, S., Paul, D. R., SK, S. B., Vigneshwaran, B., Johns, R., & **D. Nirmal.,** "Optimizing deposition parameters and characterizing TiO2 thin films for future memristor applications" (2024) *Physica Scripta*, 99(11), 115929. **(Impact Factor : 2.6)**
109	Michel, A., IV, B. K. J., Franklin, S. A., Juliet Rani, S., Angelin Delighta, A., & **D. Nirmal.** "Influence of Doping Engineering in 1 µm Drift Layer Quasi-Vertical Fin Field-Effect Transistor for Achieving> 139 V Breakdown Voltage" (2024) *physica status solidi (a)*, 221(20), 2400137. **(Impact Factor : 1.9)**
108	Mounika, B., Panigrahy, A.K., Ajayan, J., Khadar Basha, N., Bharath Sreenivasulu, V., Durga Prakash, M., Bhattacharya, S., **D. Nirmal**. ,"A Novel LG = 40 nm AlN-GDC-HEMT on SiC Wafer With fT/IDS,peak of 400 GHz/3.18 mA/mm for Future RF Power Amplifiers" (2024) *IEEE Access*, 12, pp. 131906-131914, (**Impact Factor : 3.55)**
107	Rajendiran, P., Justeena, A.N., Mrabet, J., Ramasamy, S., Selvam, P.D., **D. Nirmal**., "Sensitivity analysis of junctionless silicon NT-TFET and performance metrics comparison with the silicon NT-TFET" (2024) *Journal of Nanoparticle Research*, 26 (6), art. no. 129. (**Impact Factor : 2.1)**
106	Dason, I.B.M., Kasthuri, N., **D. Nirmal**., "Influence of buffer layer engineering in MoS2/CIPS vdW NCFET logic transistor" (2024) *Physics Letters, Section A: General, Atomic and Solid State Physics*, 523, art. no. 129763. (**Impact Factor : 2.3)**
105	Deshpande, G., Bhattacharya, S., Ajayan, J., Mounika, B., **D. Nirmal**., "A Review of GaN Channel-Based MOSHEMTs for Next-Generation Medium/Low-Voltage Rating and High-Speed RF Power Applications" (2024) *Journal of Electronic Materials*, 53 (8), pp. 4287-4307. (**Impact Factor : 2.1)**
104	Jebalin, I.V.B.K., Franklin, S.A., G, G., P, P., **D. Nirmal.** ,"Revolutionizing Fe doped back barrier AlGaN/GaN HEMTs: Unveiling the remarkable 1700V breakdown voltage milestone" (2024) Microelectronics Journal, 147, art. no. 106158, (**Impact Factor : 1.993)**
103	A. S. Augustine Fletcher, S. Angen Franklin, P. Murugapandiyan, J. Ajayan and **D. Nirmal.,** "4.87 kV SiC MOSFET Using HfSiOx/SiO2 Gate Dielectrics Combined with PN Pillars" (2024) *Journal of Electronic Materials* 53:2601–2608 (**Impact Factor : 2.1)**
102	I Blessing Meshach Dason, N Kasthuri and **D .Nirmal.,** "TMD material investigation for a low hysteresis vdW NCFET logic transistor" (2024) *Semicond. Sci. Technol.* Vol 39 , 045005 (8pp) (**Impact Factor : 1.9)**
101	G. Dhivyasri, M. Manikandan,J. Ajayan, S. Sreejith, R. Remya & **D. Nirmal.,** "A comparative study of AlGaN and BAlGaN based ultraviolet quantum well-based light emitting diodes" (2024) *Optical and Quantum Electronics* (2024) 56:649 (**Impact Factor : 3.0)**
100	A, Angelin Delighta, I.V, Binola K Jebalin. Ajayan J., Franklin, S. Angen, and **D. Nirmal.,** "A new Vertical C-shaped Silicon Channel Nanosheet FET with Stacked High-K Dielectrics for Low Power Applications" (2024) *Silicon*, 10.1007/s12633-024-02871-7 (**Impact Factor : 3.4)**
99	Anushya G., Benjamin M.,Sarika R.,Pravin, J. Charles, Sridevi R., **D. Nirmal.,** "A review on applications of molybdenum disulfide material: Recent developments" (2024) *Micro and Nanostructures*, Volume 186, Article number 207742.
2023	
98	G. Gifta, I. V.Binola K. Jebalin, S. Angen Franklin, D. Gracia Nirmala Rani, and **D.Nirmal**, "Analytical Modelling and Simulation of Graphene Based Biosensor to Detect SARS-COV-2 from Aerosal Particles" (2023), *ECS Journal of Solid State Science and Technology*, 2023, 12(5), 057012 **(Impact Factor : 2.070)**

97	B. Mounika, J. Ajayan , Sandip Bhattacharya, **D. Nirmal**, V. Bharath Sreenivasulu, N. Aruna Kumari, "Investigation on effect of AlN barrier thickness and lateral scalability of Fe-doped recessed T-gate AlN/GaN/SiC HEMT with polarization-graded back barrier for future RF electronic applications" (2023), *Microelectronics Journal*, (**Impact Factor : 1.993)**
96	Jebalin, B.K., IV, Gifta, G., Angen, S., Prajoon, P**., D. Nirmal.,** "Investigation of variable field plate length in GaN HEMT on SiC substrate for MMIC applications"(2023) *Microelectronics Journal*, 138, art. no. 105866, (**Impact Factor : 2.2)**
95	Ajayan, J., Mohankumar, P., Mathew, R., Thoutam, L.R., Kaushik, B.K., **D. Nirmal** "Organic Electrochemical Transistors (OECTs): Advancements and Exciting Prospects for Future Biosensing Applications" (2023) *IEEE Transactions on Electron Devices*, pp. 1-12. **(Impact Factor : 3.72)**
94	Ajayan, J., Mohankumar, P., **D. Nirmal.**,Tayal, S., Mounika, B. "Ferroelectric Field Effect Transistors (FeFETs): Advancements, challenges and exciting prospects for next generation Non-Volatile Memory (NVM) applications"(2023) *Materials Today Communications*, 2023, 35, 105591**(Impact Factor : 3.662)**
93	Angen Franklin, S., Binola K Jebalin, I.V., Chander, S., ...Ajayan, J., **D. Nirmal**., "Investigation on Fe-Doped AlGaN/GaN HEMT at 148 GHz Using E-FPL Technology for High-Frequency Communication Systems"(2023) *ECS Journal of Solid State Science and Technology*, 2023, 12(3), 035006**(Impact Factor : 2.070)**
92	Mukherjee, A., Debnath, P., **D. Nirmal.,** Chanda, M. "A new analytical modelling of 10 nm negative capacitance-double gate TFET with improved cross talk and miller effects in digital circuit applications"(2023) *Microelectronics Journal*, 2023, 133, 105689**(Impact Factor : 1.992)**
2022	
91	Ajayan, J**., D. Nirmal.,** Jebalin I.V, B.K., Sreejith, S. "Advances in neuromorphic devices for the hardware implementation of neuromorphic computing systems for future artificial intelligence applications: A critical review"(2022) *Microelectronics Journal*, 130, 105634 **(Impact Factor : 1.992)**
90	Kumar, T.A., Rajakumar, G., Samuel, T.S.A., **D. Nirmal**. "An In Situ Design/Analysis Method of Antimicrobial Effect Using Nano TiO_2 for Disinfecting COVID-Affected Places" (2022), *Journal of Testing and Evaluation*, 50 (5), DOI: 10.1520/JTE20220009. **(Impact Factor : 1.264)**
89	Kumar, J.S.R., **D. Nirmal**., Hooda, M.K., Singh, S., Ajayan, J., Arivazhagan, L. "Intensive Study of Field-Plated AlGaN/GaN HEMT on Silicon Substrate for High Power RF Applications" (2022) *Silicon*, 14 (8), pp. 4277-4282. DOI: 10.1007/s12633-021-01199-w. **(Impact Factor : 2.941)**
88	Mounika, B., Ajayan, J., Bhattacharya, S., **D. Nirmal**. "Recent developments in materials, architectures and processing of AlGaN/GaN HEMTs for future RF and power electronic applications: A critical review" (2022) *Micro and Nanostructures*, 168, art. no. 207317, . 1) DOI: 10.1016/j.micrna.2022.207317. **(Impact Factor : 3.22)**
87	Ravindran, A., **D. Nirmal**., Jebalin. I. V, B.K., Pinkymol, K.P., Prajoon, P., Ajayan, J. " InGaAs based gratings for UV–VIS spectrometer in prospective mRNA vaccine research"(2022) *Optical and Quantum Electronics*, 54 (9), art. no. 555, .DOI: 10.1007/s11082-022-04002-1. **(Impact Factor : 2.794)**
86	Husna Hamza, K., **D. Nirmal**., Augustine Fletcher, A.S., Ajayan, J., Natarajan, R. "Enhanced drain current and cut off frequency in AlGaN/GaN HEMT with BGaN back barrier" (2022) *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, 284, art. no. 115863, DOI: 10.1016/j.mseb.2022.115863 **(Impact Factor : 3.407)**
85	Ajayan, J., **D. Nirmal**., Mohankumar, P., Mounika, B., Bhattacharya, S., Tayal, S., Fletcher, A.S. "A Challenges in material processing and reliability issues in AlGaN/GaN HEMTs on silicon wafers for future RF power electronics & switching applications: A critical review" ,(2022) *Materials Science in Semiconductor Processing*, DOI: 10.1016/j.mssp.2022.106982, **(Impact Factor : 4.64)**
84	Kumar, J.S.R., **D. Nirmal**., Ajayan, J., Tayal, S. " Investigation on LG = 50 nm Tapered T-Gated AlGaN/GaN HEMT on Silicon Wafer with a fT/fmax of 264/312 GHz for beyond 5G (B5G) Applications" (2022) *Silicon*. DOI: 10.1007/s12633-022-01860-y**(Impact Factor : 2.941)**
83	Manikandan, M., **D. Nirmal**., Ajayan, J., Arivazhagan, L., Prajoon, P., Dhivyasri, G.,

	Jagadeeswari, M. "Physics based modeling of AlGaN/BGaN quantum well based ultra violet light emitting diodes" (2022) *Optical and Quantum Electronics*, 54 (3), art. no. 168, DOI: 10.1007/s11082-022-03552-8 **(Impact Factor : 2.794)**
82	Gracia, D., **D. Nirmal**., Moni, D.J. "Analysis of nanoscale digital circuits using novel drain-gate underlap DMG hetero-dielectric TFET" (2022*) Microelectronics Journal*. DOI: 10.1016/j.mejo.2021.105323**(Impact Factor : 1.992)**
81	Fletcher, A.S.A., **D. Nirmal**., Arivazhagan, L., Ajayan, J., Raj, M.G., Hamza, K.H., Murugapandiyan,P., Natarajan, R. "A 28-GHz Low-Loss AlGaN/GaN HEMT for TX/RX Switches in 5G Base Stations"(2022) *Journal of Electronic Materials*. DOI: 10.1007/s11664-021-09367-9 **(Impact Factor : 2.047)**
2021	
80	Godfrey, D., **D. Nirmal**., Arivazhagan, L., Godwinraj, D., Mohan Kumar, N., Chen, Y., Yeh, W. "Current collapse degradation in GaN High Electron Mobility Transistor by virtual gate"(2021) *Microelectronics Journal*. DOI: 10.1016/j.mejo.2021.105293 **(Impact Factor : 1.992)**
79	Arivazhagan, L., **D. Nirmal**., Jarndal, A., Huq, H.F., Chander, S., Bhagyalakshmi, S., Reddy, P.K.,Ajayan, J., Varghese, A. "Applicability of double Channel Technique in AlGaN/GaN HEMT for future biosensing applications"(2021) *Superlattices and Microstructures*. DOI:10.1016/j.spmi.2021.107086 **(Impact Factor : 3.12)**
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44	Husna, H.K., **Nirmal, D**., Merlin Gilbert Raj, S., Ajayan, J., Arivazhagan, L., Augustine Fletcher, A.S. 6 GHz GaN HEMT linear power amplifier (2021*) 2021 3rd International Conference on Signal Processing and Communication, ICPSC 2021*, art. no. 9451754, pp. 219-222, DOI: 10.1109/ICSPC51351.2021.9451754
43	Manikandan, M., **Nirmal, D**., Dhivyasri, G., Arivahagan, L., Ajayan, J., Chandru, R., Rajeshwaran, K. Simulation analysis of UV -A band LEDs with BGaN single quantum well using SiC substrate for medical applications (2021) *2021 3rd International Conference on Signal Processing and Communication*, ICPSC 2021, art. no. 9451764, pp. 312-314, DOI: 10.1109/ICSPC51351.2021.9451764
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42	Husna, H.K., **Nirmal, D**., Merlin Gilbert Raj, S., Ajayan, J., Arivazhagan, L., Augustine Fletcher, A.S. 6 GHz GaN HEMT linear power amplifier(2021) *2021 3rd International Conference on Signal Processing and Communication*, ICPSC 2021,DOI: 10.1109/ICSPC51351.2021.9451754
41	Manikandan, M., **Nirmal, D**., Prajoon, P., Dhivyasri, G., Chandran, V., Luminous power improvement in InGaN V-Shaped Quantum Well LED using CSG on SiC Substrate, *IOP Conference Series: Materials Science and Engineering,* 2020, 906(1), 12011
40	P Pavan Kumar Reddy, S Bhagya Lakshmi, L Arivazhgan, J S Raj Kumar and **D Nirmal**, AlGaN/GaN HEMT for highly sensitive detection of Bio-molecules using transconductance methodIOP *Conference Series: Materials Science and Engineering*,doi:10.1088/1757-899X/872/1/012048
39	Godfrey D,Godwinraj D,**D.Nirmal**,N Mohan Kumar,Arivazhagan L,Wen Kuan YehStrain-Induced Ionic Polarization Dependent AlGaN/GaN High Electron Mobility Transistor *Proceedings of the 4th International Conference on Trends in Electronics and Informatics, ICOEI 2020*, 2020, pp. 463-466, 9142918, SCAD College of Engineering and Technology - 15-17 June 2020, pp. 463-466, 9142918
38	L. Arivazhagan, Anwar Jarndal, SubhashChander, Godfrey D, Raj Kumar J S, S Bhagyalakshmi, Pavan Kumar Reddy and **D.Nirmal,** "Self-Heating Analysis of GaN-HEMT for Various Ambient Temperature and Substrate Thickness" *IEEE Conference Proceedings on 2020 5th International Conference on Devices, Circuits and Systems, ICDCS20,* Coimbatore, India, 5th-6th March 2020.
37	Husna Hamza K, **D.Nirmal** and L. Arivazhagan, "Impact of AlGaN Back Barrier in AlGaN/GaNHEMT on GaN substrate" *IEEE Conference Proceedings on 2020 5th International Conference on Devices, Circuits and Systems, ICDCS20*, Coimbatore, India, 5th-6th March 2020.
36	Godfrey D, **D.Nirmal**, L. Arivazhagan, Brigis Roy, Yu-Lin Chen, Tien-Han Yu, Wen-KuanYeh and Godwinraj D, "Investigation of AlGaN/GaNHEMT Breakdown analysis with Source field plate length for High power applications" *IEEE Conference Proceedings on 2020 5th International Conference on Devices, Circuits and Systems, ICDCS20,* Coimbatore, India, 5th-6th March 2020.
2019	
35	Arivazhagan.L, **D.Nirmal**, Ajayan.J, Rajkumar.J.S, Godfry.D, Bhagya.S, "Modeling of self-heating for AlGaN/GaNHEMT with thermal conductivity degradation effect" *AIP Conference Proceedings 2nd International Conference on Material Science, Smart*

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2018	
33	Moni.D.J, Anucia.A.J, D.Gracia, **D.Nirmal**, "Performance Analysis of GaSb/InAs Tunnel FET for Low Power Applications" *IEEE International Conference on Devices, Circuits and Systems, ICDCS 2018;* Karunya University, Coimbatore, pp- 335-338.
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30	Pratik.P.Pandi, Grace Jency, J,MonicBabu, Kishore Kumar, **D.Nirmal**,"Fabrication of Ultra Flexible Super Capacitor using PVdf" *IEEE International Conference on Innovations in Electrical,Electronics, Instrumentation and Media technology (ICIEEIMT'17),* Karunya University, Coimbatore, pp-98-102, 4 March-2017.
29	SubashChander, Ajay,**D.Nirmal**, Mridula Gupta,"30nm Normally Off Enhancement Mode AlGaN/GaNHEMT on SiC Substrate for Future High Speed Nanoscale Power applications" " IEEE *International Conference on Innovations in Electrical,Electronics, Instrumentation and Media technology (ICIEEIMT'17),* Karunya University, Coimbatore, pp-293-296, 4 March-2017.
2016	
28	AnujaMenokey, **D Nirmal**, Prajoon P**,** J Charles Pravin, "Green InGaN/GaNLEDs with n-GaN Interlayer for efficiency droop improvement" *International Conference on Devices, Circuits and Systems (ICDCS'16),* Karunya University, Coimbatore, pp-216-219, 3 March-2016.
27	Charles Pravin**., D.Nirmal**, PrajoonP., Altrin Sharma., AnujaMenokey M "Impact of Gate Length on the Performance of a Junctionless Dual Metal Transistor with High-k dielectrics", *International Conference on Devices, Circuits and Systems (ICDCS'16),* Karunya University, Coimbatore, pp-291-294, 3 March-2016.
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19	T.D.Subash, Dr.T.Gnanasekaran, J. Jagannathan, **D. Nirmal** "Intend and portrayal of InSbQWFET for RF application" *proceedings of International Conference on Innovations in Information Embedded and Communication Systems ICIIECS'14,* Karpagam College of Engineering,Coimbatore,Tamil Nadu, March 2014 pp 787-790.
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16	Surya, **D. Nirmal,**J.Beulah, D.Rubavathy, Daphne and J.David " CMOS Based Instrumentation Amplifier For Neural Recording System" in *First International Conference on Communication , Computation and Control* held in Christian College of Engineering and technology from 11th- 13th April 2013.
15	Annie, **D. Nirmal,**SajithaSoman, Praba , Kingsly "Analysis of Gate Engineered SOIMOSFET FOR VLSI Applications" *proceedings of IEEE International Muti Conference on Automation, Computing, Contral, Communication and Compressed sensing , iMac4s-2013,* St. Joseph's College of Engineering and Technology. pp 498 - 501 Palai, Kottayam, March 2013.
14	Praba, **D. Nirmal,**SajithaSoman, Annie , Kingsly "Design and Simulation of GaN/AlGaNHEMTs with Low Leakage Current and High ON/OFF Current Ratio" *proceedings of IEEE International Muti Conference on Automation, Computing, Contral, Communication and Compressed sensing , iMac4s-2013,* St. Joseph's College of Engineering and Technology. PP 490 - 493 Palai, Kottayam, March 2013.

13	SajithaSoman, **D. Nirmal,**Praba, Annie , Kingsly "Analysis of Drain Current in Short Channel Drain ExtentedTripal Gate FinFETs" *proceedings of IEEE International Muti Conference on Automation, Computing, Contral, Communication and Compressed sensing , iMac4s-2013,* St. Joseph's College of Engineering and Technology. PP 494 - 497 Palai, Kottayam,March 2013.
12	**D. Nirmal,**Vijayakumar, DoreenJoy, Binola k Jebalin, and N.Mohankumar "Nanoscale Tri Gate MOSFET for Ultra Low Power Applications Using High-k Dielectrics " *5th IEEE International Nanoelectronics Conference, IEEE INEC 2013* held in Singapore, Page 12-16, on 2nd – 4th January 2013
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11	**D. Nirmal,**ShevinBobinVarughese, DoreenJoy, FlaviaPrincess and P.Vijayakumar "*Design and simulation of ALGaN/GaNHFET" 2012 International Conference on Devices, Circuits and Systems (ICDCS) Proceedings,* Karunya university Page. 199-201,2012.
10	**D. Nirmal,**DoreenJoy, ShevinBobinVarughese, FlaviaPrincess, and P.Vijayakumar "Low power analysis of triple gate MOSFET" *2012 International Conference on Devices , Circuits and Systems (ICDCS) Proceedings,* Karunya university Page. 126-129,2012.
9	FlaviaPrincess, P.Sindhu,M.Manikandan,V.LaksmiPrabha and **D.Nirmal** "Mixed mode simulation of SRAM FINFETs" *2012 International Conference on Devices , Circuits and Systems (ICDCS) Proceedings,*Karunya university Page. 280-283,2012.
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8	**D. Nirmal,** P.Vijaya Kumar, Patrick Chella Samuel, Shruti K, Divya Mary Thomas & N. Mohankumar "Analysis Of Dual Gate Mosfets Using High K Dielectrics" *2011 3rd IEEE International Conference on Electronics Computer Technology (ICECT 2011)Proceedings*, page VI:22-25.
7	**D. Nirmal,**P.Vijaya Kumar, Shruti K, Divya Mary Thomas, Patrick Chella Samuel & N. Mohankumar "Analysis Of Single Halo Double Gate Mosfets Using High-K Dielectrics" *2011 3rd IEEE International Conference on Electronics Computer Technology (ICECT 2011)Proceedings*, page VI:26-30.
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5	**D. Nirmal,**Divya Mary Thomas, Shruti K, Patrick Chella Samuel, Vijaya Kumar& N. Mohankumar " Analysis of Dual Material FinFETs using High-k Dielectrics*" International Conference on Communication and Signal processing ICCOS 2011 Karunya University, Coimbatore*-641 114. 17-18, March 2011
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4	**D.Nirmal,**Vijayakumar, Rekha, Soumya "Impact Of High-K Dielectrics On Device Performance Of SOIFinFETS" *ISCO (4th international conference on intelligent systems and control)*, karpagam college of engineering, India, 4th and 5th , Feb 2010.
3	**D.Nirmal,**Vijayakumar, Rekha "High-K Dielectrics On FinFETs Device Performance Using TCAD" *International Conference on Emerging Trends in Engineering Technologies ICETS*, Noorul Islam university,India, 25 & 26, March 2010.
2	**D.Nirmal,** Vijayakumar, Soumya "Device Design And Optimization Of NanoscaleFinFETs Using TCAD" *International Conference on Emerging Trends in Engineering Technologies ICETS*, Noorul Islam university, India, 25 & 26, March 2010.
2009	
1	**D.Nirmal,**Nalini, Vijayakumar "Nanosized High K Dielectric Material For Finfet" *ICE (International conference for Electro ceramics)* , Delhi University, India, 13-17, Dec 2009.

NATIONAL CONFERENCE PUBLICATIONS

5	**D. Nirmal**, Vijayakumaret,al. " Analysis of analog parameters using Multi Gate FET" *3rd National Conference on Signal Processing, Communications and VLSI Design (NCSCV'11)* Anna university of Technology coimbatore.6th & 7th May 2011. pp. 35-39.
4	**D. Nirmal,**Vijayakumar, Samjebaraj, Christopher, Arockia, Sunil "FinFETs For Future Nano Scale Technology" *National Conference on the theme 'Emerging trends in RF and Signal Processing*FISAT , Kerala,India, 25-27, March 2010,pp. 161-165.
3	**D. Nirmal,**Vijayakumar, Samjebaraj, Christopher, Arockia, Sunil "CMOS logic design with Double Gate Transistors" *National Conference on VLSI,Image processing and Wireless communication* ARASU Engineering College, India 20th March 2010,pp.1-7.
2	**D. Nirmal,** Vijay "Implementation of Low Power Circuits Using FinFETs" National Conference on Microwave and Optical Communication, AlagappaChettiar College Of Engineering And Technology, India, 2009.
1	**D. Nirmal,** Jackuline Moni "Floorplanning Based on Btree* and simulated Annealing" *National conference on Modeling, Analysis and Simulation of Computer and Telecommunication systems* Government College Of Engineering Salem, India, 2007.

BOOK PUBLICATION

4	**BOOK Title: Modeling of AlGaN/GaN High Electron Mobility Transistors** Editors: D. Nirmal, J. Ajayan. Publisher: Springer. ISBN: 978-981-97-7508-8 Linl: https://link.springer.com/book/10.1007/978-981-97-7506-4
3	**BOOK Title: Energy harvesting and storage devices: Sustainable materials and method** Editors: Thoutam, L.R., Ajayan, J., Nirmal, D. Publisher: CRC Press Taylor & Francis ISBN: 978-100334053-9 **Link: https://doi.org/10.1201/9781003340539**
2	**BOOK Title: Semiconductor Devices and Technologies for Future Ultra Low Power Electronics** Editors:D. Nirmal, J. Ajayan and Patrick Fay Publisher: CRC Press Taylor & Francis ISBN: 9781032061610 Link: https://doi.org/10.1201/9781003200987
1	**BOOK Title: Handbook for III-V High Electron Mobility Transistor Technologies** Editors: D. Nirmal and J. Ajayan Publisher: CRC Press Taylor & Francis ISBN: 9781138625273 Link: https://doi.org/10.1201/9780429460043

BOOK CHAPTER PUBLICATION

10	**Chapter Title: Impact of Semiconductor Materials and Architecture Design on TFET Device Performance** Authors: Saravanan, M., Parthasarathy, E., Ajayan, J., Nirmal, D. Publication Title: Emerging Low-Power Semiconductor Devices: Applications for Future Technology Nodes, Publisher: CRC Press ISBN: 978-100064018-2
9	**Chapter Title: Negative Capacitance Field Effect Transistors for Future Low Power Electronics** Authors: D. Nirmal and J. Ajayan Publication Title: Low-Dimensional Nanoelectronic Devices Theoretical Analysis and Cutting-Edge Research Publisher: CRC Press ISBN: 9781774638668

8	**Chapter Title: Phosphorene based Intelligent Nanosensor for Wearable Electronics Applications** Authors: R.Ramesh, Arkaprava Bhattacharyya, Adhithan Pon, D. Nirmal, J. Ajayan Publication Title: Handbook of Nanomaterials for Sensing Applications Publisher: Elsevier ISBN: 9780128207833
7	**Chapter Title: III-V Nanoscale Quantum Well Field Effect Transistors for Future High Performance and Low Power Logic Applications** Authors: D. Nirmal and J. Ajayan Publication Title: Nanoscale VLSI Devices, Circuits and Applications Publisher: Springer ISBN: 978-981-15-7936-3.
6	**Chapter Title: III-V Compound Semiconductor Transistors-From Planar to Nanowire Structures** Authors: D. Nirmal and J. Ajayan Publication Title: VLSI and Post-CMOS Devices, Circuits and Modelling Publisher: IET Digital Library ISBN: 1785618199, 9781785618192.
5	**Chapter Title: Impact of Semiconductor Materials and Architecture Design on TFET Device Performance** Authors: M. Saravanan, Eswaran Parthasarathy, J. Ajayan, D. Nirmal Publication Title: Emerging Low-Power Semiconductor Devices Publisher: CRC ISBN: 9781032147291
4	**Chapter Title: Performance Analysis of Dual Metal Double Gate Tunnel-FETs for Ultralow Power Applications** Authors: D. Gracia and D. Nirmal Publication Title: Nanoelectronic Materials and Devices. Publisher: Springer ISBN: 978-981-10-7190-4
3	**Chapter Title: InP-Based High-Electron-Mobility Transistors for High-Frequency Applications** Authors: D. Nirmal and J. Ajayan Publication Title: Nanoelectronics Devices, Circuits and Systems Publisher: Elsevier ISBN: 9780128133538
2	**Chapter Title: Modeling of Double gate MOSFETs** Authors: D. Nirmal and J. Ajayan Publication Title: Nanoscale Devices Physics Modeling and their Application Publisher: CRC Press Taylor & Francis ISBN: 9781138060340
1	**Chapter Title: A Fundamental Overview of High Electron Mobility Transistor and its Applications** Authors: D. Nirmal and J. Ajayan Publication Title: Nanoscale Devices Physics Modeling and their Application Publisher: CRC Press Taylor & Francis ISBN: 9781138060340

INTERNATIONAL CONFERENCE RESOURCE PERSON

28	Technical Reviewer for the manuscripts submitted for the **IEEE Madras Section International Conference 2021** (MASCON2021) held at Hotel Le-Royal Meridien, Chennai, Tamil Nadu, India during 27th-28th August 2021.
27	Session Chair in the " **2nd International conference on VLSI Devices, Circuits and Systems**" held in Meghnad saha Institute of Technology Kolkata, India 18th and 19thJuly 2020
26	Sharing in the "**Virtual Conference Organizers' Panel**" held in IEEE Bangladesh Section,Bangladesh1st and 2nd , July 2020
25	Session Chair in the " **IEEE Sponsored 4th International conference on Communication and Electronic systems**" held in PPG Institute of Technology, India

	17th, July 2019
24	Session Chair in the **2019 International Conference on Computer Communication and Informatics** (ICCCI 2019) Organized by Sri Shakthi Institute of Engineering and Technology – CoimbatoreIndia on 23th -25th January 2019.
23	Session Chair in the " 3rd**IEEE International conference on Communication and Electronic systems**" held in PPG Institute of TechnologyIndia 15th and 16thOctober 2018.
22	Session Chair in the **2018 International Conference on Computer Communication and Informatics** (ICCCI 2017) Organized by Sri Shakthi Institute of Engineering and Technology – Coimbatore, India on 5th January 2018.
21	Session Chair in the " **IEEE Sponsored 2nd International conference on Communication and Electronic systems**" held in PPG Institute of Technology, India 19th October 2017.
20	Session Chair in the " **IEEE Sponsored International conference on Signal processing and communication**" held in Karunya University, India 28th July 2017.
19	Session Chair in the " **IEEE Sponsored International conference on Innovations in Electrical ElectronicsInstrumentation and Media Technology**" held in Karunya University, India 4th February 2017.
18	Session Chair in the **IEEE Sponsored International conference on Inventive systems and Control** Organized by JCT College of Engineering and technology, India on 19th January 2017.
17	Session Chair in the **2017 International Conference on Computer Communication and Informatics**(ICCCI 2017) Organized by SreeShakthi Institute of Engineering and Technology - Coimbatore India on 7th January 2017.
16	Session Chair in the **IEEE International Conference on Communication and Electronics Systems**(ICCES 2016) Organized by PPG Institute of Technology – Coimbatore, India on 21st October 2016.
15	Session Chair in the **IEEE International Conference on Inventive Computation Technologies**(ICICT 2016) Organized by RVS Technical Campus- Coimbatore, India on 26th to 27th August 2016.
14	Session Chair in the IEEE EDS and IETE sponsored 3rd **International Conference on Devices, Circuits and Systems** Organized by Karunya University, India on 3rd to 5th March 2016.
13	Session Chair in the **IEEE sponsored International conference on Electronics and Communication Systems** Organized by Karpagam College of Engineering, India on 25th February 2016.
12	Session Chair in the **International conference on Systems Science Control Communication Engineering and Technology** Organized by Karpagam Institute of Technology, India on 10th August 2015.
11	Session Chair in the **International conference on Networks Electronics Communication and Control** Organized by Cape Institute of Technology, India on 5th and 6th March 2015.
10	Session Chair in the **IEEE 9th International conference on Intelligent Systems and Control"** Organized by Karpagam college of Engineering, India on 9th and 10thJanuary 2015.
9	Session Chair in the **IEEE SSCS Sponsored Conference On "Solid State Circuits"** Organized by Saint Gits college of Engineering, India on 29th August 2014.
8	I have served as a organizing secretary of **2nd International conference on Devices, Circuits and Systems** sponsored by **IEEE EDS INDIA** and **IETE INDIA** March 6th to 8th 2014.
7	Session Chair in the **International Conference Innovations in InformationEmbedded and Communication systems** Organized by Karpagam college of Engineering, India on 13th and 14th of March 2014.
6	Session Chair in the I**nternational Conference on Devices circuits and systems** Organized by Karunya University, India on 6th to 8th March2014.
5	Session Chair in the **International Conference on Electronics and Communication Systems** Organized by Karpagam college of Engineering, India on 13th and 14th of February 2014.
4	I have served as a organizing secretary of **International conference on DevicesCircuits and Systems** sponsored by **IEEE EDS INDIA** and **IETEINDIA**March 15th and 16th 2012.
3	Session Chair in the **International Conference on Innovations in Intelligent**

	InstrumentationOptimization and Signal Organized by Karunya UniversityIndia on 1st March 2013.
2	Session Chair in the **IEEE International Multi Automation Computing Control Communication and Compressed Sensing** Organized by St. Joseph's College of Engineering and Technology, India on 22th and 23th March 2013.
1	Session Chair in the **2013 IEEE International Conference on Emerging Trends in Computing,** India on 25th and 26th March 2013 **Communication and Nanotechnology** Organized by Infant Jesus College of Engineering

NATIONAL CONFERENCE RESOURCE PERSON

2	Session Chair in the **National Conference on Innovations in future communication Technologies**, (NCIFCT'17) Organized by Karunya university, India on 30th March 2017
1	Session Chair in the **Fourth National Conference on Communication, Computation, Control and Automation**, CCCA 2014 Organized by Sri Ramakrishna Institute of Technology, India on 28th and 29th March 2014.

WORKSHOP ORGANIZED

5	Organized One day workshop on "2nd**National Workshop on Semiconductor device modeling and applications"** in Karunya University11th January 2017.
4	Organized One day IEEE ED Coimbatore Chapter sponsored workshop "**National Workshop on Semiconductor device modeling and applications"** in Karunya University9th October 2015.
3	Organized One day IEEE ED Coimbatore Chapter sponsored workshop "**National Workshop on semiconductor memories"** in 18th September 2015.Karunya University
2	Organized two day workshop on "**National Workshop on circuit simulation on TANNER EDA Tool"** in Karunya25th and 26th March 2011. University
1	Organized one day DIT sponsored workshop on "**Electronic System Design Manufacturing**" in Karunya University14th October 2012.

INTERNATIONAL / NATIONAL RESOURCE PERSON

78	Keynote address on **"Trending GaN technology for high power systems" in** 3rd IEEE International conference on Electrical electronics, Information and communication technologies held in K Ramakrishnan collage of engineering, India 24th – 26th , July 2024.
77	Resource person SERB Sponsored National level seminar on **"Semiconductor confluence: Innovations, real time applications and diversities" ,** conducted on July 04th to July 5th , 2024 at Karpagam academy of higher education, Coimbatore
76	Resource person for Workshop on **"Scientific manuscript writing" ,** conducted on April 30th , 2024 at Chemists college of pharmaceutical science and research, Kerala.
75	Resource person for Guest lecture on **"Matrices and measurement for research validity"** conducted on April 4th , 2024 at Builders engineering college,Tirupur.
74	Resource person for Guest lecture on '**Effective research proposal writing for funded projects ,** conducted on February 27th , 2024 at Noorul Islam center for higher education, Kanyakumari
73	Resource Person for FDP on '**Enhancing VLSI design with machine learning opportunities and challenges ,** conducted on January 09, 2024 at Government Engineering College , Coimbatore.
72	Resource Person for AICTE ATAL FDP on '**Power management and energy efficient semiconductor design,** conducted on December 12, 2023 at KGISL Institute of Technology , Coimbatore.
71	Resource Person for AICTE ATAL FDP on '**Semiconductor Design and Development,**

	conducted on November 21, 2023 at National Engineering college, Kovilpatti.
70	Resource Person for FDTP on '**Scaling and fabrication challenges in MOS Transistors ,** conducted on July 24, 2023 at PSG Institute of Technology and Applied research, Coimbatore.
69	Plenary Talk on '**Various substrate impact on GaN HEMT for high power applications,** in 2nd international conference in recent advances in electrical electronics ubiquitous communication and computational intelligence held on April 19to 21 , 2023 at SRM institute of Technology and sciences, Chennai.
68	Guest speaker for SERB sponsored Nation seminar on '**Roll of smart electronics and renewable energy systems for sustainable developments,** conducted on March 14-18th , 2023 at Gayan Ganga Institute of Technology and sciences, Jablpur.
67	Resource Person for DRDO sponsored Nation seminar on '**3D Monolithic, Microwave Integrated Circuits Design Fabrication and Applications,** conducted on November 09, 2022 at Dhanalakshmi Srinivasan College of Enginneirng, Coimbatore.
66	Resource Person for IEEE Day seminar on '**Electronic materials, devices and Systems for Beyond 5G systems'** conducted on September 19,2022 at Karpagam College of Engineering , Coimbatore.
65	Resource Person on '**Workshop on Manuscript Preparation and Submisison'** conducted on September 13,2022 at Avinashilingam Institute for Home Sciences and Higher Education for women , Coimbatore
64	Resource Person for the Guest lecture on '**Werable sensor devices'** conducted on September 10,2022 at Karpagam Institute of Technology , Coimbatore
63	Resource Person for the Anna University sponsored FDP on '**Electronics Packing and Testing,** conducted on Auguest 08,2022 at KPR Institute of Engineering and Technology , Coimbatore
62	Resource Person for the lecture on '**Memory Core and Memory Peripheral Security, in the FDP** conducted on January19,2022 at PSNA College of Technology, Dindigul
61	Resource Person for the lecture on '**Electronics System Design and Manufacturing in Technology Node Perspective and Blended Research Outputs Metrics'**,conducted on January20,2022 at United Institute of Technology, Coimbatore.
60	Exceptional contribution as Primary Evaluator in the **Toycathon 2021** conducted by Ministry of Education Innovation Cell.
59	Resource Person for the workshop on '**NanoMaterials & Devices: Physics and Applications**',conducted on March 11th and 12th at VIT Chennai.
58	Keynote talk on "**Sustainable Electronic system in current trends" at the 6thInternational Conference on Inventive Computation Technologies(ICICT-2021)** organized by RVS Technical Campus, Coimbatore, Tamilnadu, India, on 21.01.2021.
57	Resource Person in the 2 Day Online Faculty Development Program on **Future Perspective of Semiconductor Devices** organized by Kalasalingam Academy of Research and Education on 22-24 June 2021
56	Keynote talk in the **2nd International Conference on Electronics and Sustainable Communication Systems** held at Hindustan Institute of Technology and Sciences, Coimbatore, India on 04 August 2021
55	Resource Person in the 2 Day National Level workshop on **Modeling of semiconductor Quantum Devices for a Sustainable Energy System using TCAD**" organized by Kalasalingam Academy of Research and Education on 08 January 2021
54	Keynote address on **"Sustainable Electronic System in Current Trends"** in6thInternational conference on Inventive Computation Technologies (ICICT-2021) held RVS Technical Campus, India 21 January 2021.
53	Resource person in the Faculty Development Program on "**Innovative Research Approach for Cutting Edge Program**" in Bethlehem Institute of Engineering, Indiaon 19 November 2020
52	Delivered a talk in Faculty Development program on "**Smart materials and sensors:**

	Current updates and future perspective" organized by Stella mary's college of Engineering and Technology, India on 11th July 2020
51	Keynote address on **"Electronic Devices to Circuits systems"** inInternational conference on Electronic and Sustainable communication systems held at Hindusthan Institute of Technology and sciences, India 2nd , July 2020.
50	Delivered a talk in webinar on "**Nanoelectronics and its trending applications**" organized by Galgotias University, Delhi on 22th June 2020
49	Delivered a talk in webinar on "**Current Trending Devices for 5G Communication**" organized by Department of ECE, Kumaraguru College of Technology, Coimbatore on 28th June 2020
48	Resource person in the National level Three Day Online Faculty Development Program "**VLSI technology and hardware for AI and ML**" in GMR Institute of Technology, Rajam during 25th to 27th May 2020
47	Delivered a talk in Faculty orientation program on " **Future perspective in Research Mobilization**" on 13th , January 2020 in KPR Institute of Engineering and Technology
46	Resource person in the Guest lecture on " **VLSI and its Applications** " on 09th ,January 2020 in Avinashilingam Institute for Home Science and Higher Education for Women.
45	Resource person in AICTE sponsored Short Term training programm and delivered a lecture on "**Recent GaN power process for 5G applications**" on 20st August 2019 in PSNA College of engineering and Technology.
44	Keynote address on **"Silicon based Energy harvesting devices"** inInternational conference on communication and electronic systems held PPG institute of Technology, India 17th , July 2019.
43	Delivered a talk in Faculty development program on **"Bio medical solutions: Integrating new chips, Packages & Modules "** held in Jyothi Engineering college, Kerala, India on 10th July 2019.
42	Resource person in AICTE Sponsored Two week faculty development program and delivered a talk on **"Wearable and implantable Technologies"** held in VimalJyothi Engineering college, Kerala, India on 25th May 2019.
41	Keynote address on **"Nanogenerators for energy harvesting applications" in** International conference on Intelligent computing and control systems held Vaigai College of Engineering, India 15th , May 2018.
40	Delivered a technical talk on "**Semicondcutor Devices and its recent trends**" in IEEE Madras section symposium held in Sri Ramakrishna Engineering College, Coimbatore on 25th January 2018
39	Keynote address on **"Semiconductor devices and its applications" in** 3rd IEEE International conference on Inventive systems and control held in JCT College of Engineering and Technology, India 11th , January 2018.
38	Guest Speaker on " **Current Trends in Semicondcutor Devices** " in Francis Xavier Engineering College, Tirunelveli on 10th January 2018
37	Keynote address on **"Electronic system design and its reliability issues"** in " 3rd IEEE International conference on Communication and Electronic systems held in PPG Institute of Technology, India 15th and 16th , October 2018.
36	Delivered Guest Lecture on " **Technology node beyond 14nm in VLSI Systems**" in Vellor Institute of Technology, Vellore on 19th September 2018.
35	Keynote address on **"InP based HEMT and its frequency applications"** in IEEE Sponsored International conference on Inventive research in computing applications Organized by RVS technical campus coimbatore, India on 2nd July 2018.
34	Guest Lecture on " **Emerging semiconductor devices and its applications**" in ShaheedRajguru college of applied sciences for women, University of Delhi , Delhi on 4th April 2018.
33	Speech Delivered on " **Flexible electronics and future systems**" in Institution of Engineers(India), Coimbatore chapter , Coimbatore on 12th February 2018.

32	Keynote address on **"Flexible semiconductor devices and its applications in future" in** IEEE Sponsored 2nd International conference on Inventive systems and control held in JCT College of Engineering and Technology, India 19th , January 2018.
31	Guest Lecture on " **Recent Advancements in Electronics and Research opportunities in semiconductor devices**" in Kumarguru college of Technology , Coimbatore on 22nd November 2017.
30	Keynote address on **"Impact of High Electron Mobility Transistor in MMIC Systems" in** IEEE Sponsored 2nd International conference on Communication and Electronic systems held in PPG Institute of Technology, India 19th , October 2017
29	Resource person in the CSIR sponsored National seminar and delivered a lecture on "**Analysis of Carbon Nanotube and GrapheneNanoribbon Field Effect Transistors**" on 21st August 2017 in Karpgam college of engineering.
28	Keynote address on **"Current Trends in Junctionless Transistors for Ultra Low power Applications"** in IEEE Sponsored International conference on Inventive systems and Control Organized by JCT College of Engineering and technology, India on 19th January 2017.
27	Delivered a Talk on "**Semiconductor Devices and Applications** " in One day IEEE ED Coimbatore Chapter sponsored workshop " **2ndNational Workshop on Semiconductor device modeling and applications"** in Karunya University, 11th January 2017.
26	Guest Lecture on " **NPN and PNP Junctions**" in FDTP ON Electron Devices organized by Karpagam Institute of Technology , Coimbatore on 23th December 2016.
25	Invited talk on " **Semiconductor Nano Electronic Devices and its applications for Future Electronics**" in National seminar on MEMS and Nano Electronic Devices held on 19th and 20th December 2016 in Bharathiar University, India
24	Delivered a Keynote address on "**NanoscaleJunctionless Transistor Design and Its Applications** " in the IEEE International Conference on Communication and Electronics Systems(ICCES 2016) Organized by PPG Institute of Technology - Coimbatore, India on 21st October 2016.
23	Resource person in the TEQIP-II sponsored faculty development program on "**Multiscale modelling and simulation of Nanoelectronic Devices- A research Perspective**" on 28th July 2016 in PSG college of Technology.
22	Delivered a Keynote address on "**GaN based High Electron Mobility Transistor (HEMT): Trends and applications"** in the IEEE sponsored International **conference on Electronics and Communication Systems** Organized by Karpagam College of Engineering, India on 25th February 2016.
21	Resource person for a seminar on "**Research paper writing: Methodology & Aspect**" held on 17th February, organized by Department of Electronics and communication Engg ECHO association, Karunya University.
20	Delivered a Keynote address on "**Emerging trends in Nanotechnology and Integrated circuits**" in National Level Workshop on Recent trends of Nanotechnology in Electronics held at Arasu Engineering College, India on 8th February 2016.
19	Delivered a Technical Talk on "Introduction **to High Power & Low Power Devices in Nanotechnology**" in Alva's Institute of Engineering and Technology, India on 06thNovember 2015.
18	Resource person for IEEE EDS Coimbatore chapter sponsored workshop on "**National Semiconductor device modeling and applications**" in Karunya University, 9th October 2015.
17	Delivered a lecture on "VLSI **Technologies and research Trends**" in Royal college of Engineering and technology, India on 14th August 2015.
16	Keynote address in the **"International conference on Systems, Science, Control, Communication, Engineering and Technology" on** Next Generation Electronics and its Applications Organized by Karpagam Institute of Technology, India on 10th August 2015.

15	Keynote address in the **"International conference on Networks, Electronics, Communication and Control" on**Heterostructure based MOSFETs in Nano electronic Regime Organized by Cape Institute of Technology, India on 5th and 6th March 2015.
14	Keynote address in the "**IEEE 9th International conference on Intelligent Systems and Control" On** Advanced high power semiconductor devices and its application Organized by Karpagam college of Engineering, India on 9th and 10th January 2015.
13	Delivered a plenary talk in the IEEE**SSCS Sponsored Conference On "Solid State Circuits"** Organized by SaintGits college of Engineering, India on 29th August 2014.
12	Resource person for IEEE India EDS chapter sponsored workshop on "Nano **Electronics Device Modelling**" in Mahendra Engineering College on 14th July 2014.
11	Delivered a Talk on "Nano **electronics in recent trends**" in RevaITM,Bangalore India on 24thMarch 2014.
10	Delivered a Special Guest lecture on "VLSI **Design**" in Pavai College of Technology, India on 28th January 2014.
9	Delivered a Guest lecture in IETE Student forum inauguration on "**Nano electronics in Communication systems**" in Karpagam college of Engineering, India on 30th September 2013.
8	Delivered a special lecture in One day seminar on "**Advanced Research Methodologies in VLSI System**" in Cape Institute of Technology, India on 12th August 2013.
7	Delivered a Keynote Talk in **2013 IEEE International Conference on Emerging Trends in Computing, Communication and Nanotechnology** Organized by Infant Jesus College of Engineering, India on 25th and 26th March 2013.
6	Resource person in "**Workshop for Writing Journal Papers**" at Karunya University, Coimbatore on 6th March 2013.
5	Guest Lecture on " **Emerging Trends in Nano Electronics for VLSI Applications**" in Paavai College Of Engineering, Namakkal on 12th February 2013.
4	Technical Talk On **"Emerging Engineering Technologies Using FinFETwith High-K Dielectrics"** in the IEEE INDIA EDS chapter workshop on FinFET Circuit Design-An Alternate for CMOS Design conducted in Muthayammal Engineering College, Rasispuram, India 2012.
3	Guest lecture in National workshop on **"Low power VLSI methodologies"** organized by Hindustan Institute of Technology, Coimbatore conducted on 24th April 2010.
2	Resource person for National Workshop **"Find your way with Wonder Chip: VLSI"** organized by Karunya University conducted from 19th of September 2009 to 21st of September 2009.
1	Delivered an Invited lecture on the topic "**INTRODUCTION TO SYNOPSYS"** in Karunya University.

INTERNATIONAL COURSES / SEMINARS ATTENDED

16	Participated in the Webinar on "Pedagogy of Online Teaching andAssessment", 10th August, 2020 organized by the Department of Electrical andElectronics Engineering, PSG College of Technology, Coimbatore in association withThe Institution of Engineers (India), Coimbatore local center.
15	Attended online FDP on Patent Law for Engineers and Researchers conducted by AICTE ATAL from 26-30 July 2020 at Prathyusha Engineering College
14	Attended online FDP on Sensors Technology conducted by AICTE ATAL from 21-25 September 2020 at Dr. Ambedkar Institute of Technolgy,
13	Attended online FDP on Internet of Things conducted by AICTE ATAL from 07-11 December 2020 at Indian Institute of Information Technology, Kottayam.
12	Attended online FDP on Photonics conducted by AICTE ATAL from 01-05 February 2021 at National Institue of Technolgy

11	Participated in Indian Technology Congress – 2019 on 4th& 5th September 2019 at NIMHANS Convention Centre, Bengaluru.
10	Attended Five day International Faculty development programm on "Exploring the Nuances of Deep learning for research applications- A Deeper Experience" held on 13thto 17th July 2020 Karunya Institute of Technology and sciences, India.
9	Participated in IEEE EDS Distinguished Lecture on "Transparent and flexible large area electronics " Organized by IEEE EDS Delhi chapter in association with University of Delhi South Campus on 16th May 2020 .
8	Participated in IEEE EDS Distinguished Lecture on "Theory of Nano- Electron- Fluidic Logic(NFL): A New Digital Electronics concept " Organized by IEEE EDS Coimbatore chapter in association with ECE, Karunya institute of technology and sciences on 5th December 2017 .
7	Participated in the workshop on "Nanolithography and Nanofabrication" Organized by Raith India and Raith GmbH Germany, held in Indian Institute of Science , Bangalore on 16th Many 2017 .
6	Participated in " IEEE Sponsored International conference on Innovations in Electrical ,Electronics, Instrumentation and Media Technology" held in Karunya University, India on 3rd and 4th , February 2017.
5	Completed the course on "Crosscheck for conferences- Plagiarism Detection Tool" from IEEE on September 1st 2016.
4	Participated in the IEEE Volunteer Leadership Training programme (VOLT) Program Graduate 2015.
3	Participated in pre-conference workshop in "International Conference on signal processing, Image processing and pattern Recognition" on Lab View held on 6th February 2013 at Karunya University.
2	Attended the International workshop and IEEE EDS Mini-colloquia on "The past & future of Integrated Circuits Technologies" held during November 4-5, 2009 at S.K.P Engineering college, Tiruvannamalai.
1	Advanced International Workshop on "NANOSCIENCE AND TECHNOLOGY" Organized by Anna University Chennai on 2009.

NATIONAL COURSES / SEMINARS ATTENDED

29	Participated in the online IP awareness and Training program conducted by Intellectual Propery India on 12 February 2022
28	Attended a Webinar on "Quantum dot cellular automata: Emerging Technology for Nano architecture" held on 20thJuly 2020 in Sri Eshwar college of Engineering India.
27	Attended a Webinar on "Intellectual Property Rights and Patent Filing" held on 22nd May 2020 Aurora's Degree & PG College, Chikkadpally, Hyderabad, India.
26	Attended a Leadership talk byMHRDInnovaion Cell held on 16th May 2020 in Government Of India.
25	Attended a Webinar on "Selection of appropriate Statistical Tools: A critical way for successful Research " held on 12th May 2020 in St Mary's College, Thoothukudi, India.
24	Attended a Webinar on "Research Methodology and its tools" held on 12th May 2020 in Crescent Institute of Technology and sciences India.
23	Attended a Webinar on "Machine learning algorithms, applications and trends" held on 10th May 2020 in Shri ShankarlalSundarbaiShasun Jain college for women association with Computer society of India.
22	Participated an Training programme on " Question paper setting" held on 30th May to 1st June 2018 in Karunya Institute of technology and sciences conducted by National Institute of Technical Teachers Training and research (MHRD, Gov Of India).

21	Attended "One day Joint workshop on Patent Filing Procedure" on 7th June 2018 Organized by Rajiv Gandhi National Institute of Intellectual Property Management, Nagpur and Karunya Institute of technology and sciences.
20	Participated a One day workshop on " Intellectual property Rights Regime in India-IPRP17" held on 18th September 2017 in Karunya University, India.
19	Participated in National workshop on " Applications of Graph theory in Engineering" held on 28th April 2016 in Karunya University, India.
18	Participated in " National seminar on MEMS and Nano Electronic Devices 2016" held on 19th and 20th December 2016 in Bharathiar University, India.
17	Attended faculty development workshop on "Effective teaching Learning Methodology for Engineers" Organized by Department of Electrical Technology,Karunya University on 23th Jun 2016
16	Attended one day National level conclave on IOT for smart city on 16th April 2016 in karunya university.
15	Participated in "Virtual Labs Workshops" conducted at Karunya University on 20th February 2016.
14	Attended one day workshop on "Intellectual Property Rights" on 15th September, 2016 in Karunya University.
13	Attended a faculty development program on "Team building and Leadership skill" Organized by Dept. of ECE Karunya University on 6th September 2014.
12	Attended a workshop on "COMSOLMultiphysics Modeling" organized by Electronics and Instrumentation Engineering Department, Karunya University on February 14, 2014.
11	Attended the one day "Workshop on Project Proposal Writing" in Karunya University, Coimbatore, February 13th 2013.
10	Attended the one day National Workshop on "Recent trends in RF Design" in Anna University of Technology Coimbatore, 09th October 2010.
9	Underwent the one day training program in center for VLSI & Nanotechnology in S.K.P Engineering College, Tiruvannamalai, 24 September 2010.
8	Attended the 3rd INUP (Indian Nano electronics User Program) training program on Nanofabrication Technologies, IISC, Bangalore, 15-16 April 2010.
7	Attended the One day Hands-on-training program on "VLSI Back-end tools" organized by Kumaraguru college of Technology on 20th February 2010.
6	Attended the workshop on "ASIC Design using SYNOPSYS" Organized by Karunya University collaboration with D'gipro Design Automation and Marketing Pvt.Ltd., on 2009.
5	Attended a "Research Workshop on Nanochemistry" Organized by Karunya University under KRWG scheme on January 28 &29, 2009.
4	Work shop cum seminar on "RESEND TRENDS IN VLSI DESIGN & VERIFICATION-AN INDUSTRY PERSPECTIVE" at Manipal Centre for Information Science, Manipal University in 2008
3	Attended the one week "PEDAGOGIC TRANING" in Karunya University in 2007.
2	AICTE sponsored National seminar on "EMERGING TRENDS IN VLSI DEVICES USING EMBEDED SYSTEMS" conducted by NICE Kumaracoil in 2007
1	Underwent one week in-plant training in "Madurai Power Corporation Pvt.Ltd" in 2003.