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Associate Professor & Head of the Department,
Electronics and Communication Engineering,
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EDUCATION

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

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

Master of Engineering

(Specialization in VLSI Design), Karunya University, India- 2007

Bachelor of Engineering

(Specialisation in Electrical and Electronics), Anna University, Chennai-2005

Post Graduate Diploma in Higher Education

Indira Gandhi National Open University, India- 2015.

EMPLOYMENT RECORD

Type of Employment	Place	Period
Associate Professor	Karunya University(Electronics and communication Engineering Department)	July 2013- Till Date
Assistant Professor	Karunya University(Electronics and communication Engineering Department)	June 2009- June 2013
Lecturer	Karunya University(Electronics and communication Engineering Department)	June 2007- May2009

RESEARCH EXPERIENCE

- Position-**Teaching and Research.**

Place – VLSI Laboratory and Centre for research in Semiconductor Devices, Karunya University.

Period – July 2007 to Till Date.

ADMINISTRATIVE EXPERIENCE

- Position- **Co-ordinator Post Graduate programme**

Place- Department of Electrical Technology(EEE,ECE,E&I and Media) Karunya University.

Period- June 2016- June 2018.

- Position- **IEEE Student branch counsellor**
Place- Karunya University.
Period- June 2016- till date.
- Position- **Department Library In-charge.**
Place- Electronics and communication engineering, Karunya University.
Period- June 2007 to 2013.

CAMPUS LIFE EXPERIENCE

- Position-**Joint Chief Warden.**
Place- Men's Hostel, Karunya University.
Period- January 2013- Till Date
- Position-**Warden.**
Place- Men's Hostel, Karunya University.
Period- June 2007 to December 2010
Experience- 3 years and 6 months.

HONORS & AWARDS

- **IEI Young Engineers Award**- Electronics and Telecommunication Engineering- 2017.
- Karunya university **Achievers Award 2016-2017** for obtaining funded project from DRDO.
- IEEE Madras Section **Professional Achievement** in the year 2016.
- IEEE Electron Device Coimbatore **Chapter Chair.**
- **Best Researcher Award** from Karunya University in the year 2014.
- Shir.P.K.Das Memorial **Best Faculty Award** in the Year 2013 by Nehru College of Educational and Charitable Trust.
- **Best Research Paper Award** with high impact factor from Karunya University in the year 2012.
- Received **Shiksha Rattan Puraskar Award** 2012 from Indian International friend ship Society.
- Distinction in Master of Engineering (VLSI DESIGN)

PROFESSIONAL SOCIETY ACTIVITIES

- Life Member of ISTE(Indian Society for Technical Education)LM-56881
- Senior Member of IEEE (Institute of Electrical and Electronics Engineering)SM-92838928.
- Life Member of SSI(Semiconductor Society of India)
- Member of Institute of Engineers (India)M-1544705.
- Member of IETE (The Institution of Electronic and Telecommunication Engineers) M-215257
- Life Member of IAENG(International Association for engineers)
- Member of IACSIT(International Association Of Computer Science And Information Technology)
- Member of ACCENT (Association of Computer Communication Education for National Triumph Social and Welfare Society)

SUBJECTS HANDLED

- VLSI Design.
- CMOS VLSI Technology.
- Nanoelectronics.
- Solid State Device Modeling.
- Microelectronics.
- Solid State Electronics.
- Electron Devices.
- Microwave and Optical Engineering.
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RESEARCH INTERESTS

- Semiconductor devices in Micro and Nanoscale.
- High power devices modelling, simulation and fabrication.
- MOS insulators: Study of MOS insulators, including high-k dielectrics
- Novel MOS devices for ULSI applications: Transistors with high-k dielectrics

REVIEW ASSIGNMENTS FOR SCIENTIFIC JOURNALS/ SOCIETIES

- IEEE Electron Device Letters.
- 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

- Editor- Microelectronics Journal(Elsevier)
- Editorial Board member – International journal of Electronics and communications (Elsevier)Till-January 2020.
- Guest Editor - IEEE Trans on Nanotechnology.

INTERNATIONAL ADVISORY COMMITTEE: Several.

COLLABORATION:

ISRO(Indian Space research organization), Government of India- Dr.Manish K Hooda

DRDO(Defense research and Development Organization), Ministry of Defense- Dr. Subash Chandar.

Taiwan semiconductor research Institute - Wen-Kuan Yeh , Director General.

University of Sharjah, College of Engineering- Anwar Hasan Mohammed Jarndal.

The University of Texas Rio Grande Valley (UTRGV)- Hasina F Huq PhD

RESEARCH PROJECTS ONGOING:

Title	Agency	Amount	Period
Design and Fabrication of Cascode Driver Circuit using GaN HEMT on Si for space applications	Indian Space Research Organization, Govt. of India	33.44 lakh	2019-2022
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
Modelling And Simulation of Tunnel FETS for Low Power Applications	Department of Electronics and Information Technology, Govt. of India	25 lakh	2016-2021

RESEARCH PROJECTS COMPLETED

Title	Agency	Amount	Period
Development Of Bio-Compatible Cellulosic Printed Circuit Board For Flexible Electronics	Tamil Nadu State Council for Science And Technology	0.1 lakh	2017-2018
Growth of GaN Thin Film On Silicon Using PLD Method For High Electron Mobility Transistor	Karunya University	0.25 lakh	2017

STUDENT PROJECTS HANDLED

- Bachelor of Engineering- (Many Projects in Electronics and Communication Engineering)
- Master of Engineering – (More than 25 VLSI Design)
1(Nanotechnology)

RESEARCH CONSULTANCY

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

RESEARCH PUBLICATIONS IN INTERNATIONAL JOURNALS

- [1]. K.Husna Hamza and **D. Nirmal**, " A review of GaN HEMT broadband power amplifiers", *International Journal of Electronics and Communications (AEU)*, Vol 116, (2020) DOI: 10.1016/j.aeue.2019.153040 (**Impact Factor:2.853**)
- [2]. D.Godfrey, **D.Nirmal**, L. Arivazhagan, R.Rathes kannan, P.Issac Nelson, S.Rajesh, B.Vidhya and N.Mohankumar " A novel ZnPc nanorod derived piezoelectric nanogenerator for energy harvesting " *Physica E Vol.118* (2020) (**Impact Factor:3.176**).
- [3]. S.Angen, J. Grace jency and **D.Nirmal**, " A wearable energy storage capacitor using graphene oxide and magnesuim oxide as electrodes" *Physica E 115* (2020) (**Impact Factor:3.176**).
- [4]. A.S. Augustine Fletcher, **D. Nirmal**, L. Arivazhagan, J. Ajayan and Varghese, A, " Enhancement of Johnson figure of merit in III-V HEMT combined with discrete field plate and AlGaN blocking layer", *International Journal of RF and Microwave Computer-Aided Engineering*, vol 30, Issue 2(2020). (**Impact Factor:1.472**)
- [5]. Rani, C.S.H., Bagan, K.B., **Nirmal, D** and Roach, R.S., " Enhancement of Performance in TFET by Reducing High-K Dielectric Length and Drain Electrode Thickness" *Silicon*, doi:10.1007/s12633-019-00328-w (2019) (**Impact Factor:1.210**).
- [6]. M.Manikandan, **D.Nirmal**, J.Ajayan, P.Mohankumar, P.Prajoon and L.Arivazhagan "A review of blue light emitting diodes for future solid state lighting and visible light communication applications", *Superlattices and Microstructures* 136 (2019). [https://doi.org/ 10.1016/j.spmi.2019.106294](https://doi.org/10.1016/j.spmi.2019.106294), (**Impact Factor:2.385**).
- [7]. J.Ajayan, **D.Nirmal**, Dheena Kurian, P.Mohankumar, L.Arivazhagan , A.S. Augustine Fletcher ,T.D.Subash and M.Saravanan" Investigation of impact of gate underlap/overlap on the analog/RF performance of composite channel double gate MOSFETs" *Journal of Vacuum Science & Technology B* 37, 062201 (2019); <https://doi.org/10.1116/1.5116199>(**Impact Factor:1.351**).
- [8]. J.Ajayan, **D.Nirmal**, P.Mohankumar, Dheena Kurian, A.S. Augustine Fletcher , L.Arivazhan and B.Santhosh kumar" GaAs metamorphic high electron mobility transistors for future deep space-biomedical-military and communication system applications: A review" *Microelectronics journal*, <https://doi.org/10.1016/j.mejo.2019.104604> Vol 108, (2019) (**Impact Factor:1.284**).
- [9]. J.Ajayan, **D.Nirmal**, P.Mohankumar, and L.Arivazhan, " Investigation of Impact of Passivation Materials on the DC/RF Performances of InP-HEMTs for Terahertz Sensing and Imaging" *Silicon*, doi.org/10.1007/s12633-019-00226-1 (2019) pp 1-6 (**Impact Factor:1.210**).
- [10]. L. Arivazhagan , , **D. Nirmal**, D.Godfrey, J. Ajayan , P.Prajoon A.S. Augustine Fletcher, A.Amir Anton Jone and J.S.Raj Kumar, "Improved RF and DC performance in AlGaN/GaN HEMT by P-type doping in GaN buffer for millimetre-wave applications", *International Journal of Electronics and Communications (AEU)*, Vol 108, (2019) Pg 189-194. (**Impact Factor:2.853**)
- [11]. A.S. Augustine Fletcher, **D. Nirmal**, J. Ajayan and L. Arivazhagan, "Analysis of AlGaN/GaN HEMT using discrete field plate technique for high power and high frequency applications", *International Journal of Electronics and Communications (AEU)*, Vol 99, (2019) Pg 325-330. (**Impact Factor:2.853**)
- [12]. Suresh Subramanian, B. Sundarambal and **D. Nirmal**, "Investigation on Simulation-Based Specific Absorption Rate in Ultra-Wideband Antenna for Breast Cancer Detection", *IEEE Sensors Journal*, Vol 18 No.24, 20 Dec 2018, (**Impact Factor:2.617**)
- [13]. D. Gracia, **D. Nirmal** and D. Jackuline Moni, "Impact of Leakage Current in Germanium Channel based DMDG TFET using Drain-gate underlap technique", *International Journal of Electronics and Communications (AEU)*, Vol 96, (2019) Pg 164-169. (**Impact Factor:2.853**)

- [14]. P. Vanitha, T.S. Arun Samuel and **D. Nirmal**, "A New 2D Mathematical Modeling of Surrounding Gate Triple material Tunnel FET using Halo Engineering for Enhanced Drain Current", *International Journal of Electronics and Communications (AEU)*, Vol 99, (2019) Pg 34-39. (**Impact Factor: 2.115**)
- [15]. J.Ajayan, T.Ravichandran, P.Mohankumar, P.Prajoon, J.Charles Pravin and D.Nirmal, "Investigation of DC and RF Performance of Novel MOSHEMT on Silicon Substrate for Future Submillimeter Wave Applications" *Semiconductors*, vol. 52,No.16,(2018) pp 1191-1997 (**Impact Factor:0.672**).
- [16]. R.Rathes Kumar,P.Isaac Nelson, S.Rajesh, T.Ponmudi selvi, A.Mohan , B.Vidhya, **D.Nirmal** and Arivazhan "Curtailed recombination rate and fast carrier transport in ZnPc/Ga As/ Zn Pc Stacked hybrid structure " *Optical Materials*, vol. 85,(2018) pp 287-294.(**Impact Factor:2.320**).
- [17]. D.Gracia , **D.Nirmal** and D.Jackuline Moni, "Impact of leakage current in germanium channel based DMDG TFET using drain- gate underlap technique" " *International Journal of Electronics and Communications (AEÜ)*, vol.96,(2018) pp 164-169.(**Impact Factor:2.115**).
- [18]. J. Ajayan , **D. Nirmal** , T.Revichandran, P.Mohankumar, P. Prajoon, L. Arivazhagan , Chandran Kumar Sarkar "InP high electron mobility transistors for submillimeter wave and terahertz frequency applications: A review " *International Journal of Electronics and Communications (AEÜ)*, vol.94,(2018) pp 199-214.(**Impact Factor:2.115**).
- [19]. J. Hengsteler, P. Prajoon, **D. Nirmal**, "Analysis of High Efficiency InGaN Multiple-Quantum-Well Light-Emitting-Diodes Using InGaN Step-Graded Barriers" *Journal of Nanoelectronics and Optoelectronics*, vol.13,(2018) pp 939-943.(**Impact Factor:1.019**).
- [20]. J. Ajayan , T.Revichandran, P.Mohankumar, P. Prajoon, J. Charles Pravin, **D. Nirmal**, "Investigation of breakdown performance in $L_g = 20$ nm novel asymmetric InP HEMTs for future high-speed high-power applications" *Journal of Computational Electronics*, vol.17,(2018) pp 265-272.(**Impact Factor:1.431**).
- [21]. J. Ajayan , T.Revichandran, P.Mohankumar, P. Prajoon, J. Charles Pravin, **D. Nirmal**, "Investigation of DC-RF and breakdown behaviour in $L_g = 20$ nm novel asymmetric GaAs MHEMTs for future submillimetre wave applications" *International Journal of Electronics and Communications (AEÜ)*, vol.84,(2018) pp 387-393.(**Impact Factor:2.115**).
- [22]. J. charles pravin, p. prajoon, flavia princess nesamania, p. senthil kumar, **D. Nirmal** , and G.sriresh," Nanoscale High-k Dielectrics for Junctionless Nanowire Transistor for Drain Current Analysis" " *Journal of ELECTRONIC MATERIALS* " <https://doi.org/10.1007/s11664-018-6075-2> (**Impact factor: 1.573**)
- [23]. P. Prajoon , M. Anuja Menokey , J. Charles Pravin , J. Ajayan , S. Rajesh , **D. Nirmal**, "Investigation of efficiency enhancement in InGaN MQW LED with compositionally step graded GaN/InAlN/GaN multi-layer barrier" "*Superlattices and Microstructures* DOI:10.1016/j.spmi.2018.02.008 (**Impact factor: 2.123**).
- [24]. **D. Nirmal**, L. Arivazhagan, A.S.Augustine Fletcher, J. Ajayan, P. Prajoon "Current collapse modeling in AlGaIn/GaN HEMT using small signal equivalent circuit for high power application" " *Superlattices and Microstructures* <https://doi.org/10.1016/j.spmi.2017.12.027> (**Impact factor: 2.123**)

- [25]. J. Ajayan , **D. Nirmal**, P. Prajoon and J. Charles Pravin “Analysis of nanometer-scale InGaAs/InAs/InGaAs composite channel MOSFETs using high-K dielectrics for high speed applications” *International Journal of Electronics and Communications (AEÜ)*, vol.79,(2017)pp 151-157(**Impact Factor:1.147**).
- [26]. A.S. Augustine Fletcher, and **D.Nirmal**, “ A survey of Gallium Nitride HEMT for RF and highpower applications” " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2017.05.042(**Impact factor: 2.123**)
- [27]. P. Murugapandiyan, S.Ravimaran, J.William, J Ajayan and **D.Nirmal**, “ DC and microwave characteristics of 20 nm T-gate InAlN/GaN high electron mobility transistor for high power RF applications” " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2017.05.060 (**Impact factor: 2.123**)
- [28]. D.Gracia , **D.Nirmal** and A. Nisha Justeena, “ Investigation of Ge based Double Gate Dual Metal Tunnel FET Novel Architecture using Various Hetero dielectric Materials” " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2017.04.045 (**Impact factor: 2.123**)
- [29]. J. Ajayan and **D. Nirmal**, “20 nm In 0.75 Ga0.25 As channel-based HEMTs on Inp/GaAs substrates for future THz applications” *Journal of semiconductors*, vol.38,No.4(2017)pp 1-6.
- [30]. Charles Pravin J, **D.Nirmal** , Prajoon P , N.Mohan kumar and Ajayan J, “Investigation of 6T SRAM memory circuit using high-k dielectrics based nano scale junctionless transistor” " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2017.03.012(**Impact factor: 2.117**)
- [31]. J. Ajayan and **D. Nirmal**, “20 nm high performance enhancement mode InP HEMT with heavily doped S/D regions for future THz applications " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2016.10.011 (**Impact factor: 2.117**)
- [32]. P.Prajoon, **D. Nirmal**, Anuja Menokey and J.Charlespravin, “Temperature dependant efficiency droop analysis of In GaN MQW light emitting diode with modified ABC model.”, *J Comput Electron* , Vol 16 (2016) pp 1511–1520. (**Impact factor – 1.104**).
- [33]. J. Ajayan and **D. Nirmal**, “20-nm enhancement-mode metamorphic GaAs HEMT with highly doped InGaAs source/drain regions for high frequency applications" *International Journal of Electronics* DOI: 10.1080/00207217.2016.1218066 (**Impact factor:0.729**)
- [34]. J. Ajayan and **D. Nirmal**, “20-nm T-gate composite channel enhancement-mode metamorphic HEMT on GaAs substrates for future THz applications" *J Comput Electron* Vol 16(2016), pp 1291–1296. (**Impact factor:1.104**)
- [35]. Charles Pravin J, **D.Nirmal** , Prajoon P and Anuja Menokey M., “A New Drain Current Model for Dual Metal Junctionless Transistor for Enhanced Digital Circuit Performance” **IEEE** Trans. Electron Devices, VOL. 63, NO. 9(2016) pp 3782-3789. (**Impact Factor – 2.207**).
- [36]. Prajoon P, **D. Nirmal**, AnujaMenokey M, J Charles Pravin “Efficiency Enhancement of InGaN MQW LED Using Compositionally Step Graded InGaN Barrier on SiC Substrate” **IEEE J. Display Technology**, DOI: 10.1109/JDT.2016.2570814, (2016) 1117 - 1121. (**Impact Factor – 1.925**).
- [37]. P.Prajoon, **D .Nirmal**, AnujaMenokey and J.Charlespravin, “A Modified ABC Model in InGaN MQW LED Using Compositionally Step Graded Alternating Barrier for Efficiency Improvement”, *Superlattices and Microstructures*, 96 (2016) 155-163. (**Impact factor – 2.097**).

- [38]. J. Charles Pravin, **D. Nirmal**, P. Prajoon and J. Ajayan, "Implementation of nanoscale circuits using dual metal gate engineered Nanowire MOSFET with high-k dielectrics for low power applications" *Physica E* 83 (2016) 95–100. (**Impact Factor: 2.00**).
- [39]. J. Ajayan and **D. Nirmal**, "A review of InP/InAlAs/InGaAs based transistors for high frequency applications" *Superlattices and Microstructures* 86 (2015) 1–19. (**Impact factor: 2.097**)
- [40]. Binola k Jebalin, ShobhaRekh, Prajoon, N.Mohankumar and **D.Nirmal** , "The influence of high-k passivation layer on breakdown voltage of schottky AlGa_N/Ga_N HEMTs" *Microelectronics Journal. Vol. 46 (12), (2015), 1387–1391*. (**Impact factor: 0.836**).
- [41]. Binola k Jebalin, ShobhaRekh, Prajoon, N.Mohankumar and **D.Nirmal**, "Unique model of polarization engineered AlGa_N/Ga_N Based HEMTs for high power applications" *Superlattices and Microstructures* 78(2015)210-223. (**Impact factor: 2.097**).
- [42]. B. Padmanaban, R. Ramesh, **D. Nirmal** and S. Sathiyamoorthy, "Numerical modeling of triple material gate stack gate all-around (TMGSGAA) MOSFET considering quantum mechanical effects" *Superlattices and Microstructures* 82 (2015) 40–54. (**Impact factor: 2.097**)
- [43]. **D. Nirmal**, P. Vijayakumar , Shruthi and N.Mohan Kumar, "Nanoscale Channel Engineered Double Gate MOSFET for Mixed Signal Applications using High-k Dielectric", *International journal of circuit theory and applications*, Volume 41, Issue 6, pp 608-618,2013. (**Impact Factor: 1.759**).
- [44]. **D. Nirmal**, P. Vijayakumar , D. Divya and N.Mohan Kumar , "Subthreshold Performance of Gate Engineered FinFET Devices and circuit with High-k Dielectrics", *Microelectronics Reliability*, 53 (2013) 499–504. (**Impact factor: 1.167**).
- [45]. **D. Nirmal**, P. Vijayakumar , Shruthi and N.Mohan Kumar, " A review of Nanoscale channel and Gate Engineered FINFETS for VLSI mixed signal applications using Zirconium – di- oxide dielectrics" *Journal of Engineering sciences and Technology Review* Volume7(2) 2014, 119-124.
- [46]. I.Flavia Princess Nesamani, V.LakshmiPrabha,Aswathy Paul and **D.Nirmal**, "Synthesis and Dielectric Studies of Monoclinic Nanosized Zirconia", *International journal of Advances in Condensed Matter Physics*, Vol. 2014. <http://dx.doi.org/10.1155/2014/828492> (**Impact Factor: 1.175**).
- [47]. Surya A , **D. Nirmal**, "CMOS Based Instrumentation Amplifier For Neural Recording System" *IJCIC* Volume5, Issue 1,pp 51-55,2013.
- [48]. **D. Nirmal**, P. Vijayakumar , Patrick Chella Samuel and N.Mohan Kumar, "Subthreshold analysis of nanoscale FinFETs for ultra-low power application using high-k materials", *International Journal of Electronics*, Vol. 100, Issue 6,pp 803-817,2013. (**Impact factor: 0.440**).
- [49]. Cyril Robinson Azariah, B.Nalini and **D.Nirmal**, "Fabrication and Characteristics of Flexible Thin Film Depletion Mode Field Effect Transistor (FET) using High-κ Dielectric Nano Zirconia" *International Journal of Emerging Trends in Engineering and Development*, Issue 3, Vol.2 pp.295-299. (March 2013).
- [50]. **D.Nirmal** and P.Vijayakumar , "Fin Field Effect Transistors Performance in Analog and RF for High-k Dielectrics" *Defence Science Journal*, Vol. 61, No. 3, pp. 235-240, May 2011. (**Impact factor:0.304**)

- [51]. **D.Nirmal**, Shruti .K, Divya Mary Thomas, Patrick Chella Samuel, P.Vijayakumar and N.Mohan Kumar, "Impact of Channel Engineering on FINFETs using High-k dielectrics" International Journal of Micro and Nano Electronics, Circuits and Systems, 3(1), pp. 7-11, 2011.
- [52]. **D. Nirmal**, B.Nalini and P. Vijayakumar, "Nano sized High K Dielectric Material for FINFET", Integrated Ferroelectrics, Vol. 121, Issue 1, pp. 31-35, 2010. (**Impact Factor: 0.264**)
- [53]. **D.Nirmal**, P. Vijayakumar and Sam Jebaraj, "NAND Gate Using FINFET for Nanoscale technology", International Journal of Engineering Science and Technology Vol.2 (5), pp. 1351-1358, 2010.
- [54]. **D.Nirmal and P.Vijayakumar**, "Gate Engineering on the Analog Performance of DM-DG MOSFETs with High K Dielectrics", International Journal of Advanced Science and Technology Vol. 25, pp. 1-6, December, 2010.

RESEARCH PUBLICATIONS IN INTERNATIONAL / NATIONAL CONFERENCES

International conference:

- [1]. Arivazhagan.L, **D.Nirmal**, Ajayan.J, Rajkumar.J.S, Godfry.D, Bhagya.S, "Modeling of self-heating for AlGaIn/GaN HEMT with thermal conductivity degradation effect" AIP Conference Proceedings 2nd International Conference on Material Science, Smart Structures and Applications, ICMSS 2019, Erode, India, Volume 2201, 17 December 2019.
- [2]. Arivazhagan.L, **D.Nirmal**, Ajayan.J, Rajkumar.J.S, Godfry.D, Bhagya.S, "Enhancement of drain current in AlGaIn/GaN HEMT using AlN passivation" AIP Conference Proceedings 2nd International Conference on Material Science, Smart Structures and Applications, ICMSS 2019, Erode, India, Volume 2201, 17 December 2019.
- [3]. 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, 7 January 2019.
- [4]. Pandit.P.P, Arivazhagan.L, **D.Nirmal**, Prajoon.P, Ajayan.J, Rajkumar.J.S, "DC Performance analysis of AlGaIn/GaN HEMT for future High power applications" IEEE International Conference on Devices, Circuits and Systems, ICDCS 2018; Karunya University, Coimbatore, pp- 313-318, 7 January 2019.
- [5]. Nisha Justeena.A , **D.Nirmal**, Gracia.D,"Design and Analysis of Tunnel FET using High K Dielectric Materials" IEEE International Conference on Innovations in Electrical,Electronics, Instrumentation and Media technology (ICIEEIMT'17), Karunya University, Coimbatore, pp-177-180, 4 March-2017.
- [6]. Pratik.P.Pandi, Grace Jency, J,Monic Babu, 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.
- [7]. Subash Chander, Ajay, **D.Nirmal**, Mridula Gupta,"30nm Normally Off Enhancement Mode AlGaIn/GaN HEMT 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.
- [8]. AnujaMenokey, **D Nirmal**, Prajoon P, J Charles Pravin, "Green InGaIn/GaN LEDs 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.

- [9]. 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.
- [10]. S sreeram, J Ajayan, K Vivek, **D. Nirmal** and V Rajesh “ A high speed 256-bit carry look ahead adder design using 22 nm strained silicon technology” IEEE Sponsored 2nd international conference on electronics and communication system ICECS-2015, Karpagam College of Engineering, Coimbatore, Tamil Nadu, 26-27 Feb. 2015 pp 174 – 179.
- [11]. Jerrin K. Joy, **D. Nirmal** and P. Prajoon “Effect of quantum well thickness and molar concentration for obtaining different wavelength using AlGaAs/GaAs single quantum well LASER” IEEE sponsored 2nd international conference on electronics and communication systems (ICECS 2015), of IEEE International Conference on Electronics and Communication System ICECS’14, Karpagam College of Engineering, Coimbatore, Tamil Nadu Vol-3, (2015) pp:1738-174.
- [12]. Surya A, **D. Nirmal** and Charles Pravin “Performance enhancement of Junctionless Gate transistor with high ON/OFF ratio” International Conference on Innovation in Information, embedded and communication systems (ICIIECS-2015), Karpagam College of Engineering, Coimbatore, Tamil Nadu 19 Mar - 20 Mar 2015 pp 1-4.
- [13]. J. Ajayan, **D. Nirmal**, D. Sivaranjini, S. Sivasankari and M. Manikandan " High Performance Low Leakage power Full adder Circuit Design Using Rate Sensing Keeper" Proceedings of International Conference on Electronics and Communication Systems-ICECS-2014, Karpagam College of Engineering, Coimbatore, Tamilnadu, Feb.13, 14. pp.55-59.
- [14]. J. Ajayan, **D. Nirmal**, S. Sivasankari, D. Sivaranjini and M. Manikandan " High speed Low Power Full adder Circuit Design Using Current Comparison Domino" proceedings of Second International Conference on Device Circuits and Systems-ICDCS-2014. Karunya University, Coimbatore, Tamilnadu, pp.10-14, March-6-8, 2014.
- [15]. Prajoon.P, **D. Nirmal**, Aldona Mathew, AbinGeorge “Enhancement Mode GaN Based HEMT Using Polarization Engineering Technique” proceedings of International Conference on Innovations in Information Embedded and Communication Systems ICIIECS’14, Karpagam College of Engineering, Coimbatore, Tamil Nadu, March 2014 pp 208-211.
- [16]. A.Persiya, **D. Nirmal**, C.T.Sruthi “Investigation on the optical and structural properties of Thermally Evaporated tin selenide thin films for Phase Change Memory 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 482-484.
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- [20]. 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.
- [21]. Annie, **D. Nirmal**, Sajitha Soman, Praba , Kingsly “Analysis of Gate Engineered SOI MOSFET FOR VLSI Applications” proceedings of IEEE International Multi Conference on Automation, Computing, Control, Communication and Compressed sensing , iMac4s-2013, St. Joseph’s College of Engineering and Technology. pp 498 - 501 Palai, Kottayam, March 2013.
- [22]. Praba, **D. Nirmal**, Sajitha Soman, Annie , Kingsly “Design and Simulation of GaN/AlGaIn HEMTs with Low Leakage Current and High ON/OFF Current Ratio” proceedings of IEEE International Multi Conference on Automation, Computing, Control, Communication and Compressed sensing , iMac4s-2013, St. Joseph’s College of Engineering and Technology. PP 490 - 493 Palai, Kottayam, March 2013.
- [23]. Sajitha Soman, **D. Nirmal**, Praba, Annie , Kingsly “Analysis of Drain Current in Short Channel Drain Extended Triple Gate FinFETs” proceedings of IEEE International Multi Conference on Automation, Computing, Control, Communication and Compressed sensing , iMac4s-2013, St. Joseph’s College of Engineering and Technology. PP 494 - 497 Palai, Kottayam, March 2013.
- [24]. **D. Nirmal**, Vijayakumar, Doreen Joy, 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
- [25]. **D. Nirmal**, Shevin Bobin Varughese, Doreen Joy, Flavia Princess and P.Vijayakumar “Design and simulation of AlGaIn/GaN HFET” 2012 International Conference on Devices, Circuits and Systems (ICDCS) Proceedings, Karunya university Page. 199-201, 2012.
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- [29]. **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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- [31]. **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
- [32]. **D. Nirmal**, Nalini, Vijayakumar “Nanosized High K Dielectric Material For Finfet” *ICE (International conference for Electro ceramics)*, Delhi University, India, 13-17, Dec 2009.
- [33]. **D. Nirmal**, Vijayakumar, Rekha, Soumya “Impact Of High-K Dielectrics On Device Performance Of SOI FinFETs” *ISCO (4th international conference on intelligent systems and control)*, karpagam college of engineering, India, 4th and 5th, Feb 2010.
- [34]. **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.
- [35]. **D. Nirmal**, Vijayakumar, Soumya “Device Design And Optimization Of Nanoscale FinFETs Using TCAD” *International Conference on Emerging Trends in Engineering Technologies ICETS*, Noorul Islam university, India, 25 & 26, March 2010.

National conference:

- [1]. **D. Nirmal**, Vijayakumar et 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.
- [2]. **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.
- [4]. **D. Nirmal**, Vijay “Implementation of Low Power Circuits Using FinFETs” National Conference on Microwave and Optical Communication, Alagappa Chritiar College Of Engineering And Technology, India, 2009.
- [5]. **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

1. 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

2. 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

3. 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

4. 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

5. BOOK Title: Handbook for III-V High Electron Mobility Transistor Technologies

Editors: D. Nirmal and J. Ajayan

Publisher: CRC Press Taylor & Francis

ISBN: 9781138625273

GRANT FETCHED

- Grand-in-aid for organizing **International conference on Devices, Circuits and Systems** from DRDO for the year 2012 with Rs 40,000.
- Grand-in-aid for organizing **National workshop on Electronics system Design and Manufacturing(ESDM)** from DIT for the year 2012 with Rs 30,000.

INTERNATIONAL CONFERENCE RESOURCE PERSON

- Session Chair in the “ **IEEE Sponsored 4th International conference on Communication and Electronic systems**” held in PPG Institute of Technology, India 17th, July 2019.

- Session Chair in the **2019 International Conference on Computer Communication and Informatics (ICCCI 2019)** Organized by Sri Shakthi Institute of Engineering and Technology - Coimbatore, India on 23th -25th January 2019.
- Session Chair in the “ **3rd IEEE International conference on Communication and Electronic systems**” held in PPG Institute of Technology, India 15th and 16th , October 2018.
- 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.
- Session Chair in the “ **IEEE Sponsored 2nd International conference on Communication and Electronic systems**” held in PPG Institute of Technology, India 19th , October 2017.
- Session Chair in the “ **IEEE Sponsored International conference on Signal processing and communication**” held in Karunya University, India 28th , July 2017.
- Session Chair in the “ **IEEE Sponsored International conference on Innovations in Electrical ,Electronics, Instrumentation and Media Technology**” held in Karunya University, India 4th , February 2017.
- 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.
- Session Chair in the **2017 International Conference on Computer Communication and Informatics(ICCCI 2017)** Organized by Sree Shakthi Institute of Engineering and Technology - Coimbatore, India on 7th January 2017.
- 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.
- 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.
- 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.
- Session Chair in the IEEE sponsored **International conference on Electronics and Communication Systems** Organized by Karpagam College of Engineering, India on 25th February 2016.
- 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.
- 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.
- Session Chair in the **IEEE 9th International conference on Intelligent Systems and Control**” Organized by Karpagam college of Engineering, India on 9th and 10th January 2015.

- Session Chair in the **IEEE SSCS Sponsored Conference On “Solid State Circuits”** Organized by SaintGits college of Engineering, India on 29th August 2014.
- 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.
- Session Chair in the **International Conference Innovations in Information, Embedded and Communication systems** Organized by Karpagam college of Engineering, India on 13th and 14th of March 2014.
- Session Chair in the **International Conference on Devices circuits and systems** Organized by Karunya University, India on 6th to 8th March, 2014.
- 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.
- I have served as a organizing secretary of **International conference on Devices,Circuits and Systems** sponsored by **IEEE EDS INDIA** and **IETE INDIA** March 15th and 16th 2012.
- Session Chair in the **InternationalConference on Innovations in Intelligent Instrumentation, Optimization and Signal** Organized by Karunya University, India on 1st March 2013.
- Session Chair in the **IEEE International Multi Automation, Computing, Control, Communication and Compressed Sensing** Organized by St. Joseph’s College of Engineering and Technology, Kerala, India on 22th and 23th March 2013.
- Session Chair in the 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.

NATIONAL CONFERENCE RESOURCE PERSON

Session Chair in the National Conference on Innovations in future communication Technologies, (NCIFCT’17) Organized by Karunya university, India on 30th March 2017.

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

- Organized One day workshop on “2nd **National Workshop on Semiconductor device modeling and applications**” in Karunya University, 11th January 2017.
- Organized One day IEEE ED Coimbatore Chapter sponsored workshop “**National Workshop on Semiconductor device modeling and applications**” in Karunya University, 9th October 2015.
- Organized One day IEEE ED Coimbatore Chapter sponsored workshop “**National Workshop on semiconductor memories**” in Karunya University, 18th September 2015.

- Organized two day workshop on “**National Workshop on circuit simulation on TANNER EDA Tool**” in Karunya University, 25th and 26th March 2011.
- Organized one day DIT sponsored workshop on “**Electronic System Design Manufacturing**” in Karunya University, 14th October 2012.

INTERNATIONAL / NATIONAL RESOURCE PERSON

- Delivered a talk in Faculty orientation program on “ **Future perspective in Research Mobilization**” on 13th , January 2020 in KPR Institute of Engineering and Technology
- 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.
- 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.
- Keynote address on “**Silicon based Energy harvesting devices**” in International conference on communication and electronic systems held PPG institute of Technology, India 17th , July 2019.
- 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.
- Resource person in AICTE Sponsored Two week faculty development program and delivered a talk on “**Wearable and implantable Technologies**” held in Vimal Jyothi Engineering college, Kerala, India on 25th May 2019.
- 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.
- 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
- 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.
- Guest Speaker on “ **Current Trends in Semicondcutor Devices** ” in Francis Xavier Engineering College, Tirunelveli on 10th January 2018
- 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.
- Delivered Guest Lecture on “ **Technology node beyond 14nm in VLSI Systems**” in Vellor Institute of Technology, Vellore on 19th September 2018.
- 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.

- Guest Lecture on “ **Emerging semiconductor devices and its applications**” in Shaheed Rajguru college of applied sciences for women, University of Delhi , Delhi on 4th April 2018.
- Speech Delivered on “ **Flexible electronics and future systems**” in Institution of Engineers(India), Coimbatore chapter , Coimbatore on 12th February 2018.
- 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.
- Guest Lecture on “ **Recent Advancements in Electronics and Research opportunities in semiconductor devices**” in Kumarguru college of Technology , Coimbatore on 22nd November 2017.
- 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
- Resource person in the CSIR sponsored National seminar and delivered a lecture on “**Analysis of Carbon Nanotube and Graphene Nanoribbon Field Effect Transistors**” on 21st August 2017 in Karpagam college of engineering.
- 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.
- Delivered a Talk on “**Semiconductor Devices and Applications** ” in One day IEEE ED Coimbatore Chapter sponsored workshop “ **2nd National Workshop on Semiconductor device modeling and applications**” in Karunya University, 11th January 2017.
- Guest Lecture on “ **NPN and PNP Junctions**” in FDTP ON Electron Devices organized by Karpagam Institute of Technology , Coimbatore on 23th December 2016.
- 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
- Delivered a Keynote address on “**Nanoscale Junctionless 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.
- 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.
- 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.
- 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.

- 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.
- Delivered a Technical Talk on “**Introduction to High Power & Low Power Devices in Nanotechnology**” in Alva’s Institute of Engineering and Technology, India on 06th November 2015.
- Resource person for IEEE EDS Coimbatore chapter sponsored workshop on “**National Semiconductor device modeling and applications**” in Karunya University, 9th October 2015.
- Delivered a lecture on “**VLSI Technologies and research Trends**” in Royal college of Engineering and technology, India on 14th August 2015.
- 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.
- 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.
- 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.
- 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.
- Resource person for IEEE India EDS chapter sponsored workshop on “**Nano Electronics Device Modelling**” in Mahendra Engineering College on 14th July 2014.
- Delivered a Talk on “**Nano electronics in recent trends**” in Reva ITM, Bangalore India on 24th March 2014.
- Delivered a Special Guest lecture on “**VLSI Design**” in Pavai College of Technology, India on 28th January 2014.
- 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.
- 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.
- 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.
- Resource person in “**Workshop for Writing Journal Papers**” at Karunya University, Coimbatore on 6th March 2013.
- Guest Lecture on “**Emerging Trends in Nano Electronics for VLSI Applications**” in Paavai College Of Engineering, Namakkal on 12th February 2013.

- 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.
- Guest lecture in National workshop on **“Low power VLSI methodologies”** organized by Hindustan Institute of Technology, Coimbatore conducted on 24th April 2010.
- 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.
- Delivered an Invited lecture on the topic **“INTRODUCTION TO SYNOPSYS”** in Karunya University.

INTERNATIONAL COURSES / SEMINARS ATTENDED

- 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 .
- 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 .
- 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.
- Completed the course on “Crosscheck for conferences- Plagiarism Detection Tool” from IEEE on September 1st 2016.
- Participated in the IEEE Volunteer Leadership Training programme (VOLT) Program Graduate 2015.
- 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.
- 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.
- Advanced International Workshop on “NANOSCIENCE AND TECHNOLOGY” Organized by Anna University Chennai on 2009.

NATIONAL COURSES / SEMINARS ATTENDED

- 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).
- 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.
- Participated a One day workshop on “ Intellectual property Rights Regime in India-IPRP17” held on 18th September 2017 in Karunya University, India.
- Participated in National workshop on “ Applications of Graph theory in Engineering” held on 28th April 2016 in Karunya University, India.
- Participated in “ National seminar on MEMS and Nano Electronic Devices 2016” held on 19th and 20th December 2016 in Bharathiar University, India.
- Attended faculty development workshop on “Effective teaching Learning Methodology for Engineers” Organized by Department of Electrical Technology,Karunya University on 23th June 2016 .
- Attended one day National level conclave on IOT for smart city on 16th April 2016 in karunya university.
- Participated in “Virtual Labs Workshops” conducted at Karunya University on 20th February 2016.
- Attended one day workshop on “Intellectual Property Rights” on 15th September, 2016 in Karunya University.
- Attended a faculty development program on “Team building and Leadership skill” Organized by Dept. of ECE Karunya University on 6th September 2014.
- Attended a workshop on “COMSOL Multiphysics Modeling” organized by Electronics and Instrumentation Engineering Department, Karunya University on February 14, 2014.
- Attended the one day “Workshop on Project Proposal Writing” in Karunya University, Coimbatore, February 13th 2013.
- Attended the one day National Workshop on “Recent trends in RF Design” in Anna University of Technology Coimbatore, 09th October 2010.
- Underwent the one day training program in center for VLSI & Nanotechnology in S.K.P Engineering College, Tiruvannamalai, 24 September 2010.
- Attended the 3rd INUP (Indian Nano electronics User Program) training program on Nanofabrication Technologies, IISC, Bangalore, 15-16 April 2010.
- Attended the One day Hands-on-training program on “VLSI Back-end tools” organized by Kumaraguru college of Technology on 20th February 2010.
- Attended the workshop on “ASIC Design using SYNOPSYS” Organized by Karunya University collaboration with D’gipro Design Automation and Marketing Pvt.Ltd., on 2009.

- Attended a “Research Workshop on Nanochemistry” Organized by Karunya University under KRWG scheme on January 28 & 29, 2009.
- Work shop cum seminar on “RESEND TRENDS IN VLSI DESIGN & VERIFICATION-AN INDUSTRY PERSPECTIVE” at Manipal Centre for Information Science, Manipal University in 2008.
- Attended the one week “PEDAGOGIC TRAINING” in Karunya University in 2007.
- AICTE sponsored National seminar on “EMERGING TRENDS IN VLSI DEVICES USING EMBEDDED SYSTEMS” conducted by NICE Kumaracoil in 2007
- Underwent one week in-plant training in “Madurai Power Corporation Pvt.Ltd” in 2003.

REFERENCE

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Declaration:

I hereby declare that all the information presented above are true and correct to the best of my knowledge and belief.

(D NIRMAL)