CURRICULUM VITAE

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INTERNATIONAL JOURNALS PUBLICATIONS

2020	
1	J.Ajayan, **D.Nirmal**, P.Mohankumar, M.Saravanan, M.Jagadesh and L.Arivazhagan, "A review of photovoltaic performance of organic/inorganic solar cells for future renewable and sustainable energy technologies" *Superlattices and Microstructures*, https://doi.org/ 10.1016/j.spmi.2020. 106549, (2020) pp 1-53 **(Impact Factor:2.385).**
2	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**)
3	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 Low-Dimensional Systems and Nanostructures Vol.118 (2020)* **(Impact Factor:3.176).**
4	S.Angen, J. Grace jency and **D.Nirmal**, " A wearable energy storage capacitor using graphene oxide and magnesuim oxide as electrodes" *Physica E Low-Dimensional Systems and Nanostructures 115 (2020)* **(Impact Factor:3.176).**
5	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**)
2019	
6	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).**
7	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, **(Impact Factor:2.385).**
8	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).**
9	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-millitary and communication system applications: A review" *Microelectronics journal,* https://doi.org/10.1016/j.mejo. 2019.104604 Vol 108, (2019) **(Impact Factor:1.284).**
10	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).**
11	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**)
12	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**)
13	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**)
14	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**)
15	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**)
2018	
16	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).**

17	R.Ratheskumar,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).**
18	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).**
19	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).**
20	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).**
21	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).**
22	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).**
23	J. charles pravin, p. prajoon, flavia princess nesamania, p. senthil kumar, **D. Nirmal** , and G.srikesh," 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: 1.676)**
24	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).**
2017	
25	**D. Nirmal,** L. Arivazhagan, A.S.Augustine Fletcher, J. Ajayan, P. Prajoon " Current collapse modeling in AlGaN/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)**
26	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).**
27	A.S. Augustine Fletcher, and **D.Nirmal**, " A survey of Galliaum Nitride HEMT for RF and highpower applications" " *Superlattices and Microstructures* DOI: 10.1016/j.spmi.2017.05.042**(Impact factor: 2.123)**
28	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)**
29	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)**
30	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.
31	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)**
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32	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)**
33	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).**
34	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)**

35	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)**
36	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).**
37	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).**
38	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).**
39	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).**

INTERNATIONAL CONFERENCE PUBLICATIONS

2020	
1	L. Arivazhagan, Anwar Jarndal, Subhash Chander, 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.
2	Husna Hamza K, **D.Nirmal** and L. Arivazhagan, "Impact of AlGaN Back Barrier in AlGaN/GaN HEMT on GaN substrate" IEEE Conference Proceedings on 2020 5th International Conference on Devices, Circuits and Systems, ICDCS20, Coimbatore, India, 5th-6th March 2020.
3	Godfrey D, **D.Nirmal**, L. Arivazhagan, Brigis Roy, Yu-Lin Chen, Tien-Han Yu, Wen-Kuan Yeh and Godwinraj D, "Investigation of AlGaN/GaN HEMT 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	
4	Arivazhagan.L, **D.Nirmal**, Ajayan.J, Rajkumar.J.S, Godfry.D, Bhagya.S, "Modeling of self-heating for AlGaN/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.
5	Arivazhagan.L, **D.Nirmal**, Ajayan.J, Rajkumar.J.S, Godfry.D, Bhagya.S, "Enhancement of drain current in AlGaN/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.
2018	
6	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	Pandit.P.P, Arivazhagan.L, **D.Nirmal**, Prajoon.P, Ajayan.J, Rajkumar.J.S, "DC Performance analysis of AlGaN/GaN HEMT for future High power applications" IEEE International Conference on Devices, Circuits and Systems, ICDCS 2018; Karunya University, Coimbatore, pp- 313-318.
2017	
8	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.
9	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.

10	Subash Chander, Ajay, **D.Nirmal**, Mridula Gupta,"30nm Normally Off Enhancement Mode AlGaN/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.
2016	
11	AnujaMenokey, **D Nirmal**, Prajoon P**,** J Charles Pravin, "Green InGaN/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.
12	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.