Dr.D.Nirmal Publications

A Numerical Investigation of Heat Suppression in HEMT for Power Electronics Application	2020
L Arivazhagan, D Nirmal, PPK Reddy, J Ajayan, D Godfrey, P Prajoon, Silicon, 1-8	2020
Variable thermal resistance model of GaN-on-SiC with substrate scalability	
L Arivazhagan, D Nirmal, S Chander, J Ajayan, D Godfrey, JS Rajkumar, Journal of Computational Electronics, 1-9	2020
Luminous power improvement in InGaN V-Shaped Quantum Well LED using CSG	╁
on SiC Substrate	
M Manikandan, D Nirmal, P Prajoon, G Dhivyasri, V Chandran	2020
IOP Conference Series: Materials Science and Engineering 906 (1), 012011	
An Intensive Study on Assorted Substrates Suitable for High JFOM AlGaN/GaN HEMT	
ASA Fletcher, D Nirmal, J Ajayan, L Arivazhagan	2020
Silicon, 1-8	
,	<u> </u>
Strain-Induced Ionic Polarization Dependent AlGaN/GaN High Electron Mobility	
Transistor D. Codfray, D. Nigger, I. Agiyanhagan, D. Codyyingoi, NM Kyanan, WK Vah	2020
D Godfrey, D Nirmal, L Arivazhagan, D Godwinraj, NM Kumar, WK Yeh	
2020 4th International Conference on Trends in Electronics and Informatics	
AlGaN/GaN HEMT for highly sensitive detection of Bio-molecules using	
transconductance method	2020
PPK Reddy, SB Lakshmi, L Arivazhgan, JSR Kumar, D Nirmal	
IOP Conference Series: Materials Science and Engineering 872 (1), 012048	
On the performance of GaN-on-Silicon, Silicon-Carbide, and Diamond substrates	
A Jarndal, L Arivazhagan, D Nirmal	2020
International Journal of RF and Microwave Computer-Aided Engineering 30 (6	
A review of photovoltaic performance of organic/inorganic solar cells for future	
renewable and sustainable energy technologies	2020
J Ajayan, D Nirmal, P Mohankumar, M Saravanan, M Jagadesh,	2020
Superlattices and Microstructures, 106549	
A novel ZnPc nanorod derived piezoelectric nanogenerator for energy harvesting	
D Godfrey, D Nirmal, L Arivazhagan, RR Kannan, PI Nelson, S Rajesh,	2020
Physica E: Low-dimensional Systems and Nanostructures 118, 113931	
Investigation of AlGaN/GaN HEMT Breakdown analysis with Source field plate	╁═┤
length for High power applications	
D Godfrey, D Nirmal, L Arivazhagan, B Roy, YL Chen, TH Yu, WK Yeh,	2020
2020 5th International Conference on Devices, Circuits and Systems (ICDCS	
Self-Heating Analysis of GaN-HEMT for Various Ambient Temperature and	
Substrate Thickness	
L Arivazhagan, AHM Jarndal, S Chander, D Godfrey, RK JS,	2020
2020 5th International Conference on Devices, Circuits and Systems (ICDCS	
	<u> </u>
Impact of AlGaN Back Barrier in AlGaN/GaN HEMT on GaN substrate	2020
D Nirmal, L Arivazhagan	2020
2020 5th International Conference on Devices, Circuits and Systems (ICDCS	<u> </u>
A review of GaN HEMT broadband power amplifiers	
KH Hamza, D Nirmal	2020
AEU-International Journal of Electronics and Communications 116, 153040	
Enhancement of Johnson figure of merit in III-V HEMT combined with discrete field	2020
plate and AlGaN blocking layer	

AS Augustine Fletcher, D Nirmal, L Arivazhagan, J Ajayan, A Varghese International Journal of RF and Microwave Computer-Aided Engineering 30 (2	
Enhancement of Johnson figure of merit in III-V HEMT combined with discrete field	2020
III-V Nanoscale Quantum-Well Field-Effect Transistors for Future High-Performance	2020
A wearable energy storage capacitor using graphene oxide and magnesuim oxide as electrodes S Angen, JG Jency, D Nirmal Physica E: Low-dimensional Systems and Nanostructures 115, 113704	2020
Enhancement of drain current in AlGaN/GaN HEMT using AlN passivation L Arivazhagan, D Nirmal, J Ajayan, D Godfrey, JS Rajkumar, SB Lakshmi AIP Conference Proceedings 2201 (1), 020009	2019
Modeling of self-heating for AlGaN/GaN HEMT with thermal conductivity degradation effect L Arivazhagan, D Nirmal, J Ajayan, D Godfrey, JS Rakkumar, SB Lakshmi AIP Conference Proceedings 2201 (1), 020010	2019
A review of blue light emitting diodes for future solid state lighting and visible light communication applications M Manikandan, D Nirmal, J Ajayan, P Mohankumar, P Prajoon, Superlattices and Microstructures 136, 106294	2019
Investigation of impact of gate underlap/overlap on the analog/RF performance of	2019
GaAs metamorphic high electron mobility transistors for future deep space-	2019
Improved RF and DC performance in AlGaN/GaN HEMT by P-type doping in GaN buffer for millimetre-wave applications L Arivazhagan, D Nirmal, D Godfrey, J Ajayan, P Prajoon, ASA Fletcher, AEU-International Journal of Electronics and Communications 108, 189-194	2019
LG= 20 nm High Performance GaAs Substrate Based Metamorphic Metal Oxide Semiconductor High Electron Mobility Transistor for Next Generation High Speed Low Power Applications J Ajayan, D Nirmal, P Mohankumar, L Arivazhagan, M Saravanan, Journal of Nanoelectronics and Optoelectronics 14 (8), 1133-1142	2019
Performance enhancement of triple material double gate TFET with heterojunction and heterodielectric P Vimala, TSA Samuel, D Nirmal, AK Panda Solid State Electronics Letters 1 (2), 64-72	2019
Handbook for III-V High Electron Mobility Transistor Technologies	2019
Metamorphic HEMTs for Sub Millimeter Wave Applications J Ajayan, D Nirmal	2019

Handbook for III-V High Electron Mobility Transistor Technologies, 359-389	
DC and RF Analysis of AlGaN/GaN MOS-HEMT for High Power Application JSR Kumar, D Nirmal, L Arivazhagan, PP Pandit 2019 2nd International Conference on Signal Processing and Communication	2019
Influence of assorted back barriers on AlGaN/GaN HEMT for 5G K-band applications ASA Fletcher, D Nirmal, L Arivazhagan, J Ajayan 2019 2nd International Conference on Signal Processing and Communication	2019
Analysis of AlGaN/GaN HEMT using discrete field plate technique for high power and high frequency applications ASA Fletcher, D Nirmal, J Ajayan, L Arivazhagan AEU-International Journal of Electronics and Communications 99, 325-330	2019
A new 2 D mathematical modeling of surrounding gate triple material tunnel FET using halo engineering for enhanced drain current P Vanitha, TSA Samuel, D Nirmal AEU-International Journal of Electronics and Communications 99, 34-39	2019
Analytical Model of Double Gate Stacked Oxide Junctionless Transistor Considering Source/Drain Depletion Effects for CMOS Low Power Applications S Manikandan, NB Balamurugan, D Nirmal Silicon, 1-11	2019
Enhancement of Performance in TFET by Reducing High-K Dielectric Length and Drain Electrode Thickness CSH Rani, KB Bagan, D Nirmal, RS Roach Silicon, 1-7	2019
Investigation of Impact of Passivation Materials on the DC/RF Performances of InP-HEMTs for Terahertz Sensing and Imaging J Ajayan, D Nirmal, P Mohankumar, L Arivazhagan Silicon, 1-6	2019
InP-Based High-Electron-Mobility Transistors for High-Frequency Applications D Nirmal, J Ajayan Nanoelectronics, 95-114	2019
Investigation on Simulation-Based Specific Absorption Rate in Ultra-Wideband Antenna for Breast Cancer Detection S Subramanian, B Sundarambal, D Nirmal IEEE Sensors Journal 18 (24), 10002-10009	2018
Investigation of RF and DC Performance of E-Mode In _{0.80} Ga _{0.20} As/InAs/In _{0.80} Ga _{0.20} as Channel based DG-HEMTs for Future Submillimetre Wave and THz J Ajayan, T Ravichandran, P Mohankumar, P Prajoon, J Charles Pravin, IETE Journal of Research, 1-11	2018
Investigation of DC and RF Performance of Novel MOSHEMT on Silicon Substrate for Future Submillimetre Wave Applications J Ajayan, T Ravichandran, P Mohankumar, P Prajoon, JC Pravin, Semiconductors 52 (16), 1991-1997	2018
A Fundamental Overview of High Electron Mobility Transistor and Its Applications D Nirmal, J Ajayan Nanoscale Devices: Physics, Modeling, and Their Application, 275	2018
Modeling of Double-Gate MOSFETs D Nirmal, J Ajayan Nanoscale Devices: Physics, Modeling, and Their Application, 109	2018
Impact of leakage current in germanium channel based DMDG TFET using drain-gate underlap technique D Gracia, D Nirmal, DJ Moni	2018

AEU-International Journal of Electronics and Communications 96, 164-169	
Curtailed recombination rate and fast carrier transport in ZnPc/GaAs/ZnPc stacked	
hybrid structure	2018
RR Kannan, PI Nelson, S Rajesh, A Mohan, B Vidhya, D Nirmal	2018
Optical Materials 85, 287-294	
InP high electron mobility transistors for submillimetre wave and terahertz frequency	
applications: A review	2018
J Ajayan, D Nirmal, T Ravichandran, P Mohankumar, P Prajoon,	2010
AEU-International Journal of Electronics and Communications 94, 199-214	
Design and Fabrication of GaAs Based MOSFET by Physical Vapor Deposition	
Method	2018
A Challam, CRAJ Chelliah, D Nirmal, R Swaminathan	
Materials Focus 7 (4), 453-458	
Analysis of High Efficiency InGaN Multiple-Quantum-Well Light-Emitting-Diodes	
Using InGaN Step-Graded Barriers L Hangsteler, D Project D Nirmal	2018
J Hengsteler, P Prajoon, D Nirmal Journal of Nanoelectronics and Optoelectronics 13 (6), 939-943	
Nanoscale High-k Dielectrics for Junctionless Nanowire Transistor for Drain Current Analysis	
JC Pravin, P Prajoon, FP Nesamania, G Srikesh, PS Kumar, D Nirmal	2018
Journal of Electronic Materials 47 (5), 2679-2686	
Investigation of efficiency enhancement in InGaN MQW LED with compositionally	
step graded GaN/InAlN/GaN multi-layer barrier	
P Prajoon, MA Menokey, JC Pravin, J Ajayan, S Rajesh, D Nirmal	2018
Superlattices and Microstructures 116, 71-78	
Performance Analysis of GaSb/InAs Tunnel FET for Low Power Applications	
DJ Moni, AJ Anucia, D Gracia, D Nirmal	2018
2018 4th International Conference on Devices, Circuits and Systems (ICDCS	
DC Performance analysis of AlGaN/GaN HEMT for future High power applications	
	2018
2018 4th International Conference on Devices, Circuits and Systems (ICDCS	
Investigation of DC-RF and breakdown behaviour in Lg= 20 nm novel asymmetric	
GaAs MHEMTs for future submillimetre wave applications	2010
J Ajayan, T Ravichandran, P Mohankumar, P Prajoon, JC Pravin,	2018
AEU-International Journal of Electronics and Communications 84, 387-393	
Current collapse modeling in AlGaN/GaN HEMT using small signal equivalent circuit	
for high power application	2018
D Nirmal, L Arivazhagan, ASA Fletcher, J Ajayan, P Prajoon	2018
Superlattices and Microstructures 113, 810-820	
Performance Analysis of Dual Metal Double Gate Tunnel-FETs for Ultralow Power	
<u>Applications</u>	2018
D Gracia, D Nirmal	2016
Nanoelectronic Materials and Devices, 11-18	
Analysis of nanometer-scale InGaAs/InAs/InGaAs composite channel MOSFETs	
using high-K dielectrics for high speed applications	2017
J Ajayan, D Nirmal, P Prajoon, JC Pravin	2017
AEU-International Journal of Electronics and Communications 79, 151-157	
Investigation of Ge based double gate dual metal tunnel FET novel architecture using	
various hetero dielectric materials	2017
D Gracia, D Nirmal, AN Justeena	/
Superlattices and Microstructures 109, 154-160	

DC and microwave characteristics of 20 nm T-gate InAlN/GaN high electron mobility transistor for high power RF applications	2017
P Murugapandiyan, S Ravimaran, J William, J Ajayan, D Nirmal	2017
Superlattices and Microstructures	
A survey of Gallium Nitride HEMT for RF and high power applications	
ASA Fletcher, D Nirmal	2017
Superlattices and Microstructures	
Guest Editorial: Special Section on Nano Devices, Circuits and Systems	
VR Rao, CK Sarkar, D Nirmal, M Kumar	2017
IEEE Transactions on Nanotechnology 16 (3), 367-367	
Investigation of 6T SRAM memory circuit using high-k dielectrics based nano scale	
junctionless transistor	2017
JC Pravin, D Nirmal, P Prajoon, NM Kumar, J Ajayan	2017
Superlattices and Microstructures 104, 470-476	
22 nm InAs channel-based HEMTs on InP/GaAs substrates for future THz	
applications	2017
J Ajayan, D Nirmal	2017
Journal of semiconductors 38 (4), 044001	
22 nm In0: 75Ga0: 25As channel-based HEMTs on InP/GaAs substrates for future	Ï
THz applications	
J Ajayan, D Nirmal	2017
J Semicond 38 (4)	
Investigation of 6T SRAM memory circuit using high-k dielectrics based nano scale	ĺ
junctionless transistor	2015
J Charles Pravin, D Nirmal, P Prajoon, N Mohan Kumar, J Ajayan	2017
SuMi 104, 470-476	
22 nm InAs channel-based HEMTs on InP/GaAs substrates for future THz	
applications	2017
J Ajayan, D Nirmal	2017
Journal of Semiconductors 38 (4), 044001	
22 nm InAs channel-based HEMTs on InP/GaAs substrates for future THz	
applications	2015
J Ajayan, D Nirmal	2017
Journal of semiconductors 38 (4), 044001	
20-nm enhancement-mode metamorphic GaAs HEMT with highly doped InGaAs	
source/drain regions for high-frequency applications	2017
J Ajayan, D Nirmal	2017
International Journal of Electronics 104 (3), 504-512	
30 nm Normally off enhancement mode AlGaN/GaN HEMT on SiC substrate for	
future high speed nanoscale power applications	2015
S Chander, D Nirmal, M Gupta	2017
2017 International Conference on Innovations in Electrical, Electronics	
Fabrication of ultra flexible super capacitor using polyvinylidene fluoride	Ϊ
PP Pandit, JG Jency, M Babu, K Kumar, D Nirmal	2017
2017 International Conference on Innovations in Electrical, Electronics	
Design and analysis of tunnel FET using high K dielectric materials	1
AN Justeena, D Nirmal, D Gracia	2017
2017 International Conference on Innovations in Electrical, Electronics	
	1
Performance Analysis of Triple Metal Gate Vertical Tunnel FET DJ Moni, GAS Naira, D Gracia, D Nirmal	2017
International Journal of Pure and Applied Mathematics 114 (12), 89-98	201/
international Journal of Luce and Applied Wathernatics 114 (12), 65-76	<u> </u>

20 nm high performance enhancement mode InP HEMT with heavily doped S/D regions for future THz applications J Ajayan, D Nirmal	2016
Superlattices and Microstructures 100, 526-534	
Temperature-dependent efficiency droop analysis of InGaN MQW light-emitting diode with modified ABC model P Prajoon, D Nirmal, MA Menokey, JC Pravin Journal of Computational Electronics 15 (4), 1511-1520	2016
20-nm T-gate composite channel enhancement-mode metamorphic HEMT on GaAs substrates for future THz applications J Ajayan, D Nirmal Journal of Computational Electronics 15 (4), 1291-1296	2016
Efficiency enhancement of InGaN MQW LED using compositionally step graded InGaN barrier on SiC substrate P Prajoon, D Nirmal, MA Menokey, JC Pravin Journal of Display Technology 12 (10), 1117-1121	2016
Implementation of nanoscale circuits using dual metal gate engineered nanowire MOSFET with high-k dielectrics for low power applications JC Pravin, D Nirmal, P Prajoon, J Ajayan Physica E: Low-dimensional Systems and Nanostructures 83, 95-100	2016
A New Drain Current Model for a Dual Metal Junctionless Transistor for Enhanced Digital Circuit Performance JC Pravin, D Nirmal, P Prajoon, MA Menokey IEEE Transactions on Electron Devices 63 (9), 3782-3789	2016
A modified ABC model in InGaN MQW LED using compositionally step graded Alternating Barrier for efficiency improvement P Prajoon, D Nirmal, MA Menokey, JC Pravin Superlattices and Microstructures 96, 155-163	2016
The influence of high-k passivation layer on breakdown voltage of Schottky AlGaN/GaN HEMTs BK Jebalin, AS Rekh, P Prajoon, NM Kumar, D Nirmal Microelectronics Journal 46 (12), 1387-1391	2015
A review of InP/InAlAs/InGaAs based transistors for high frequency applications J Ajayan, D Nirmal Superlattices and Microstructures 86, 1-19	2015
Numerical modeling of triple material gate stack gate all-around (TMGSGAA) MOSFET considering quantum mechanical effects B Padmanaban, R Ramesh, D Nirmal, S Sathiyamoorthy Superlattices and Microstructures 82, 40-54	2015
Unique model of polarization engineered AlGaN/GaN based HEMTs for high power applications BK Jebalin, AS Rekh, P Prajoon, D Godwinraj, NM Kumar, D Nirmal Superlattices and Microstructures 78, 210-223	2015