CURRICULUM VITAE

Dr.S.BASKARAN, M.E., Ph.D.
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OBJECTIVE

To impart quality education on Electronics and Communication Engineering and establish an outstanding teaching career in a reputed concern thereby striving for the academic career of excellence with my technical and interpersonal skills.

EDUCATIONAL QUALIFICATION

Qualifying Degree	University	Year of Graduation	% of marks & Class obtained
Ph.D. (ICE)	Anna University	2018	-
M.E. (Applied Electronics)	Anna University	2005	74 % & FC
B.E. (ECE)	University of Madras	2003	70 % & FC

CAREER PROFILE

S.No	Name of the College	Duration	Years & Months	Designation
1.	SKP Engineering College	01.12.2005 To 01.12.2010	5.0	**ASSISTANT PROFESSOR**
2.	SKP Engineering College	01.12.2010 To 30.01.2019	8.2	**Asso PROFESSOR– STUDENT AFFAIRS & INDUSTRY INSTITUTE PARTNERSHIP CELL**
3	SKP Engineering College	31.01.2019 to till now	5.8	Professor

Total Experience = 19 years

COMPUTER SKILLS

Languages : C, Matlab, XILINX 12

Operating Systems : Windows XP, Windows Vista.

Packages : **Synopsis TCAD, Origin Pro, Ms Visio.**

RESEARCH

RESEARCH INTEREST :

1. Nanoelectronics.
2. Compact modeling of Nano-Scale Semiconductor devices.
3. Electron transport in semiconductors and alloys.
4. Quantum transport in low dimensional systems - MOS device physics.
5. CMOS Technology & Low Power Technology.
6. High Electron Mobility Transistors (HEMTs) for High Power and High-Frequency Applications.

Ph.D. THESIS TITLE:

Modelling and Simulation of GaN based High Electron Mobility Transistors for High frequency and High Power Applications.

RESEARCH SUMMARY :

Development of a compact model and simulation of generic novel HEMTs and MISHEMTs is becoming an urgent need for the semiconductor industry. The models are used to reproduce device terminal behaviors with accuracy, computational efficiency, ease of parameter extraction, and relative model simplicity of a circuit or system-level simulation, for future technology nodes. Accurate modeling and simulation of GaN, AlGaN based channel HEMTs is therefore critical in high power RF circuit design. AlGaN/GaN devices face severe alloy scattering effects, OFF-state leakage current and lower breakdown voltage ($V_{BR,OFF}$). Investigation, optimization and characterization of GaN channel based HEMTs and MISHEMTs using compact models and simulation gives details information about the device behavior. In this work, the researcher has carried out:

1. Modeling of 2DEG sheet carrier density and DC characteristics in spacer based AlGaN/AlN/GaN HEMT devices.
2. Charge based Compact Physical model with Unified 2DEG for AlGaN/AlN/GaN MISHEMTs including Short Channel effects (SCE).
3. Analysis of Impact of Al mole concentration 'X' in double heterojuction AlGaN with source and gate field plated HEMT

LIST OF PAPERS PUBLISHED IN NATIONAL/INTERNATIONAL JOURNALS

1. **Baskaran S** "UWBG AlN/β-Ga2O3 HEMT on Silicon Carbide substrate for low loss portable power converters and RF applications" accepted for publication in the journal Silicon, 2022.
2. **Baskaran S** ,Saravana Kumar R, "Impact of High-K and Gate-to-Drain spacing in InGaAs/InAs/InGaAs based DG-MOS-HEMT" in **IETE Journal of Research,2021** .
3. **Baskaran S** ,Kumutha D, "H-∞-d CNN:Enhancing the signal to Noise ratio usin DL algorithm on communication Antenna System" in Emerging telecommunications Technologies ,2021
4. **Baskaran S**, A Mohanbabu, J Ajayan," Design and development of AlGaN/GaN HEMT for biosensing applications for detection of cancers,tumors, and kidney malfunctioning" as a book chapter in Electronic Devices, Circuits, and Systems for Biomedical Applications - Challenges and Intelligent Approach. https://doi.org/10.1016/B978-0-323-85172-5.00001-0.
5. **Baskaran S** , Janaki Raman V, Kumudha D , "Silicon Nitride Back Barrier in AlGaN/GaN HEMT to Enhance Breakdown Voltage for Satellite Applications", Journal of Silicon , DOI: 10.1007/s12633-020-00817-3.
6. **Dr.S.Baskaran**, L.Mubarali, A. Anitharani, E. Annal Sheeba Rani and Dr.N.Nandhagopal "Pupil detection system using intensity labelling algorithm in FPGA" **Journal of Computational and Theoretical Nanoscience** Vol 1-7,1-24,2020.
7. **Baskaran S**, Poornachandran R, Mohankumar N, Saravana Kumar R, Kumutha S,2018,' Noise Characterisation of InAs Based DG-HEMT Devices for RF Applications' Microsyst Technol (2020). https://doi.org/10.1007/s00542-020-04955-x.
8. **Baskaran S** ,Saravana Kumar R, Mohanbabu A, "Switching Transient Analysis and Characterization of E-mode B-doped GaN Capped AlGaN DH-HEMT with Freewheeling Schottky Barrier Diode (SBD)" Journal of Electronic Materials, 49, 4091–4099 (2020).
9. **Baskaran S** ,Saravana Kumar R, Mohanbabu A, "Performance analysis of Hfo2/InAIN/AIN/GaN HEMT with AIN buffer layer for high power microwave applications, "Journal of science: Adavanced Materials and Devices "Volume 5, Issue 2, June 2020, Pages 192-198
10. **Baskaran S** ,Saravana Kumar R, Mohanbabu A & Mohankumar N ,2018, 'Comparative assessment of InGaAs sub-channel and InAs composite channel Double gate (DG)-HEMTfor Sub-millimeter wave applications', AEU-International Journal of Electronics and Communications, vol. 83, pp. 462-469.
11. **Baskaran S**, Mohanbabu A, Anbuselvan N, Mohankumar N, Godwinraj D & Sarkar CK, 2013, 'Modeling of 2DEG sheet carrier density and DC characteristics in spacer

based AlGaN/A1N/GaN HEMT devices, **Super lattices and Microstructures**, vol.64, pp.470-482.

12. **Baskaran S**, Mohanbabu A& Mohankumar N, 2017, ' A Charge Based Compact Physical Model With Unified 2DEG for AlGaN/A1N/GaN MISHEMTs including SCEs', International Journal of Control Theory and Applications, vol.10, no.36, pp.11-29.

13. **Baskaran S,** Mohanbabu A& Mohankumar N, 2017, ' Analysis and Impact of A1 mole concentration 'x' in Double Heterojunction ALGaN with source and Gate Field plated HEMT for High breakdown and High Frequency applications', Global Journal of Pure and Applied Mathematics, vol.13, no.10, pp.7339-7352.
14. N.Mohankumar, A.Mohanbabu , **S.Baskaran** , P.Anandan , N.Anbuselvan , and P. Bharathi Vikkiraman, 2015, 'Modeling of Sheet Carrier Density, DC and Transconductance of Novel InxAl1-XN/GaN-Based HEMT Structures', Advanced Materials Research, vol.1105, pp.99.104.
15. **S.Baskaran** , P.Kalaivani , M.Naveenkumar, 2014, 'Capacitance Modeling of AlN dielectric for AlGaN HEMT (MIS-HEMT) Device with two Subbands', International Journal of Innovative Research in Computer and Communication Engineering, vol.3. no.15.
16. **S.Baskaran** , A.Nithya , P.Palani,2014,' Effect of Buffer Mole Fraction on AlGaN/GaN Field-Plated HEMT on Threshold, Device Leakage and Frequency', International Journal of Innovative Research in Computer and Communication Engineering, vol.2 no.7.
17. **S.Baskaran** , M.Jerin Jose , A.Nithya, 2013,' Comparative Assessment of Gate Leakage Mechanism of AlGaN/GaN HEMT With and Without AlN Spacer', International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, vol.2, no.10

LIST OF PAPERS PUBLISHED IN NATIONAL/INTERNATIONAL CONFERENCES

1. Saravana Kumar R, Poornachandran R, **Baskaran S**, Mohankumar N, Sandhiya S, Shanmugapriya K.U ,2018, 'DC and RF Characterization of InAs based Double delta doped MOSHEMT devices', in 1st international conference "2018 IEEE Electron Device Kolkata Conference (2018 IEEE EDKCON)", November 24-25, 2018, organized by IEEE EDS Kolkata Chapter.

2. Poornachandran R, Mohankumar N, Saravana Kumar R, Baskaran S, Kumutha S,2018,' Noise Characterisation of InAs Based DG-HEMT Devices for RF

Applications', in 1st international conference "2018 IEEE Electron Device Kolkata Conference (2018 IEEE EDKCON)", November 24-25, 2018, organized by IEEE EDS Kolkata Chapter.

3. Baskaran.S, 2016,'Effect of Buffer Mole fraction on AlGaN/GaN field plated HEMT on Threshold device leakage frequency', in National conference on sustainable advances in Research and Technology organised by Dr.Paul's Engineering college.

4. Baskaran.S, 2016,Comparitive Assesment of Gate Leakage mechanism of AlGaN/GaN HEMT with and witout sapcer', in National conference on sustainable advances in Research and Technology organised by Dr.Paul's Engineering college.

5. Baskaran S , Gupreeth singh, Gobalakrishnan Published a book chapter on Block chain technologies in Emerging technologies in Engineering research .

LIST OF PATETNTS

1. **Dr.S.Baskaran**, R.Ohmsakthi, Dr.Bhuvanadevi ," Self detect and auto control voice alert for aircraft collision prevention system using RSM and EMB" filled on 13-07-2020.
2. **Dr.S.Baskaran**, Dr.Prathap, Dr.nedumaran, Dr.S.Sumathi, "Self detect and auto voice alert for aircraft collusion prevention system using RSSI and Embedded C" filled on 03-08-2020

LIST OF GUEST LECTURE/GRADUATION DAY/COLLEGE DAY / ADMISSION RELATED ACTIVITIES

- Organised the college level Graduation day from 2009 to 2018.
- Oragnsied the college day function from 2009 to 2018.
- Organised the awareness program for +2 studnets like Carrer guidance programs, Model examinations , SKP FEST function , Project exhibition, Quiz Competition, Culturals and sportsfrom 2015 to 2018.
- Organised the hostel day function from 2010 to 2018.
- Organised various level college functions and execution.
- Organised as Director of Industry Institue Partnership cell incharge arranged the more than 100 no of guest lectures in the college.
- As a Director Student affairs students counseling , Motivation, Problem solving of students, Disciliplibary issues , Communication with the parents etc., have experience in more than 5 years of experience.
- As a Hostel Warden Maitenanace of Hostels , Hostel students attendance, Hostel Discipline and Hostel Studnets requirements etc., duties have more than 5 years of experience.
- Incharge Of SKPIAS Academy : Conduction of entrance examination, organsing the Classes , Counselling and Motivation, Information of Government examinitation, Preparation of the students and so on for the past 3 years.

PROPOSALS SUBMITTED

- Submitted a MODROBS Proposal fro AICTE in the year of 2016-2017
- Submitted a proposal for AICTE for SDPD in the year 207-2018
- Submitted a proposal to TNSCST for SELF HELP Group for Engineering Graduates in the year of 2018-2019.

MAJOR ROLES IN PROFESSION

- HOD UG
- PG Coordinator
- Academic Council member
- AICTE Coordinator
- Department NBA Coordinator
- ISO Coordinator – College Level
- NAAC Coordinator – College Level
- NBA – College Level
- Discipline committee member
- Cultural Association In-Charge
- Class advisor
- Active role in Students Counseling Centre
- Judge for College cultural activities
- Alumni Coordinator
- Admission committee member
- Director- Student Affairs
- Director – Industry Institue Partnership Cell
- SKP IAS Academy - Coordiantor
- Hostel Warden
- Vice Principal

PERSONAL DETAILS

Sex	: Male
Date of Birth	: August, 4, 1982
Father's Name	: Mr. S.Baskaran
Marital Status	: Married
Nationality	: Indian
Communication Adress	: 71, CSS Complex, Rajarajan Street, Tiruvannamalai
Permanent Address	: 1, Othavadai street, Kalavai.

REFERENCES

1. **Dr. N.Mohan Kumar, M.E., Ph.D.,**
   Principal
   SKP Engineering College
   Tiruvannamalai
   Mobile: 9952568182
   E-mail: nmkskpec@gmail.com
2. **Dr.Jayavel, M.E ., Ph.D.,**
   Director- Crystal Growth
   Anna University
   Chennai.

DECLARATION

I, hereby declare that the above details given are true to the best of my knowledge.

Place: Tiruvannamalai

Date:

(S.Baskaran)