



TULIP KUMAR SAHA
Member of IEEE,
Life council Member of ISI

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EDUCATION AND PROFESSIONAL EXPERIENCE

Mr. Tulip Kumar Saha has completed his B.Sc Physics Honours from Presidency College, Kolkata, University of Calcutta, B. Tech and M. Tech from Institute of Radiophysics and Electronics, University of Calcutta. Now he is pursuing his Ph.D from NIT, Mizoram. He has experience in teaching around a decade. He is an UGC NET Qualified Assistant Professor. Presently he is working as an Assistant Professor in Adamas University, Barasat, West Bengal. His areas of interest include the design of Solid state devices, Microelectronics and Low power VLSI. He is a member of IEEE and a life council member of ISI. Mr. Saha worked in a DRDO Project named “Design and Development of Knowledge Based Real Time Decision Support System for Network Centric Warfare” as Junior Research Fellow (JRF) under the supervision of Professor Dr. Dwijesh Dutta Majumder, Emeritus Professor of ISI, Director of ICSIT. He received a Senior Research Fellowship (SRF) from the Council of Scientific and Industrial research (CSIR). He possesses a sufficient theoretical and practical knowledge and experience for teaching in the area of Electromagnetic Theory and Transmission Lines, Analog Communication, Digital Communication, Wireless Communication, Satellite Communication, Microwave Communication, Electron Devices and VLSI System Design.

RESEARCH INTEREST

- Microelectronics and Low power VLSI Circuits, Microwave Devices.

ACHIEVEMENTS

- Stood 10th position with CGPA 8.74 in M.Tech in Radio Physics & Electronics, Calcutta University
- Stood 9th position in B.Tech with CGPA 8.79 in Radio Physics & Electronics, Calcutta University
- Stood 8th position in B.Sc (Physics Honors) in Presidency College, Kolkata
- Completed PhD course work with CGPA 9.25 from NIT, Mizoram
- GATE Qualified
- UGC NET Qualified with 61.14% marks
- CSIR Research Fellow
- Awarded Senior Research Fellow at ECSU Department in Indian Statistical Institute (ISI), Kolkata.

EMPLOYMENT DETAILS

Adamas University, AU
Barasat, Kolkata

6th March 2018 to till date

Adamas Institute of Technology, AIT
Barasat, Kolkata

10th July 2012 to 5th March, 2018

Brainware Group of Institutions
Barasat, Kolkata

18th June 2012 to 26th June 2012

Guru Nanak Institute of Technology, GNIT
Sodepur, Kolkata

2nd August 2011 to 13th June 2012

Institute of Cybernetics Systems and Information Technology,
ICSIT ,Baranagar, Kolkata

Job Title: Research Fellow

DRDO Project Title: Design and Development of Knowledge
Based Real Time Decision Support System for Network
Centric Warfare

Guided by: Professor Dwijesh Dutta Majumder and , Emeritus
Professor of ISI, Director of ICSIT.

Prof. Dipti Prasad Mukherjee, Professor of ISI, ECSU
department

2nd September 2011 to 9th July
2012

RESPONSIBILITY in ADAMAS UNIVERSITY

- R & D Cell Coordinator (University Level),
- Examination Deputy Centre Superintendent (University Level),
- Timetable Coordinator (School, SoET Level),
- NAAC Criteria-IV Coordinator (School, SoET Level),
- NAAC Criteria-II Coordinator (Departmental, EEE Level),
- P & M Coordinator (Departmental, ECE Level),
- Timetable Coordinator (Departmental, ECE Level),
- Placement Coordinator (Departmental, ECE Level),
- Laboratory in Charge of VLSI System Design Lab,
- Laboratory in Charge of Analog Electronics Lab,
- Laboratory in Charge of Signal and Network Lab,
- Laboratory in Charge of Digital Signal Processing Lab.

UG & PG TEACHING ASSIGNMENTS

- Solid State Device
- VLSI Systems Design
- Electromagnetic Theory and Transmission Lines
- Signals and Systems
- Digital Signal Processing
- Analog Communication
- Digital Communication
- Wireless Communication
- Satellite Communication
- Microwave Communication
- Control Systems

PUBLICATIONS

1. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “Biomolecule Identification Using Superlattice AlGa_N/Ga_N High-K MOSHEMT: A Cutting-Edge Biosensing Technique” *Microsystem Technologies*, Aug. 2024. (SCI) [https://doi.org/10.1007/s00542-024-05738-4\(0123456789\)](https://doi.org/10.1007/s00542-024-05738-4(0123456789)).
2. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “High-K Dielectric-Modulated Dual-Cavity MOSHEMT with III-V Nitride Ga_N / AlGa_N semiconductors: Application as Biosensor”, *Microsystem Technologies*, Oct. 2024. (SCI) [https://doi.org/10.1007/s00542-024-05789-7\(0123456789\(\).,-volV\)\(0123456789\)](https://doi.org/10.1007/s00542-024-05789-7(0123456789().,-volV)(0123456789)).
3. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “Design and Characterisation Studies of Superlattice AlGa_N/Ga_N Based High-K Dielectric-Modulated Dual-Gate Dual-Channel Multi-Cavity MOSHEMT: Application in Medical Diagnostics”, *IEEE Sensor*, Jan. 2025 (SCI) Submission-ID: 1a272242-be9b-4342-ba62-32bf4c10d5fd
4. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “Nano-biomolecule Identification Using Superlattice AlGa_N/Ga_N High-K MOSHEMT: A Cutting-Edge Biosensing Technique”, *Microsystem Technologies*, July 2023, 10th International Conference, Microelectronics, Circuits and Systems 2023 (Micro2023).
5. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “Performance of Dielectric Modulated Dual Cavity MOSHEMT for Biosensing Applications”, Oct 2023, 12th International Conference, Computing, Communication, and Sensor Networks 2023 (CCSN2023).
6. **Tulip Kumar Saha**, Moumita Mukherjee, and Rudra Sankar Dhar, “A Comparative Study on Label-Free Detection of Biomolecules Using Various Biosensing Techniques”, *International Conference on Computational Techniques and Applications*, pp. 325-331, 2022, DOI: https://doi.org/10.1007/978-981-19-0745-6_35.
7. Subal Kar, Amitesh Kumar, A Majumder, SK Ghosh, S Saha, SS Sikdar, and **T.K. Saha** “CRLH and SRR based microwave filter design useful for communication applications”, *International Journal of Computer and Information Engineering*, vol. 10, no. 4, pp. 671-675, 2016, DOI: doi.org/10.5281/zenodo.1112127.
8. Subal Kar, Shib Shankar Sikdar, and **Tulip Kumar Saha**, “Metamaterial Loaded

- Waveguide Characterization—Some Basic Studies”, IEEE, Informatics, Electronics & Vision, pp.1202-1205, Oct 2012, DOI: [https:// doi.org/ 10.1109/ICIEV.2012.6317537](https://doi.org/10.1109/ICIEV.2012.6317537).
9. Shib Shankar Sikdar, **Tulip Kumar Saha**, and Subal Kar “Meta-Material Loaded Waveguide with Novel Property”, Microwave Frequency” At MMMA, in Warsaw, 2010.

Research Highlights

- CSIR Research Fellow, awarded Senior Research Fellow at ECSU Department in Indian Statistical Institute (ISI), Kolkata
- Completed PhD Course work with CGPA: 9.25 from NIT, Mizoram
- Worked in a DRDO Project named “Design and Development of Knowledge Based Real Time Decision Support System for Network Centric Warfare” as Junior Research Fellow (JRF) under the supervision of Professor Dr. Dwijesh Dutta Majumder, Emeritus Professor of ISI, Director of ICSIT

Research Key Areas

- Electron Devices
- Medical Sensor Design
- Nano Technology
- Microelectronics Circuits Design
- Low power VLSI System Design
- Microwave / Millimeter wave Devices
- Terahertz Device Modeling

WORKSHOP/ SEMINAR/CONFERENCE ATTENDED

- “Does the everyday world really obey quantum mechanics” by Antony Leggett (British Council), 2007
- Workshop Experiment at Physics, by Indian Cultivation of Science, Kolkata (C.K. Majumdar Memorial Summer Workshop), 2007.
- IEEE Applied Electromagnetic Conference (AEMC), IEEE Antenna Week December, 2011.
- National Conference on Applied Electronics (NCAE-2013) Technically Sponsored by IEEE, Co-Sponsored by CSIR, Adamas Institute of Technology, Barasat, 2013.
- National Conference on Brain and Consciousness (NCBC), Indian Statistical Institute (ISI), Kolkata, 2013.

LANGUAGES KNOWN

LANGUAGE	READ	WRITE	SPEAK
ENGLISH	YES	YES	YES
HINDI	YES	YES	YES
BENGALI	YES	YES	YES

SKILLS & REPORTS

TECHNICAL SOFTWARE SKILLS

- MATLAB
- VHDL- Xilinx
- ANSOFT-HFSS
- SILVACO-ATLAS
- TANNER TOOLS
- COMSOL Multiphysics
- QuantumATK - Atomistic Simulation Software

PROGRAMMING LANGUAGE SKILLS

- FORTRAN77
- C
- C++
- JAVA
- Python

Research Advisor / Supervisor

- Under Graduate Project Guide: 35 (Awarded)
- Post Graduate Thesis Advisor: 2 (Awarded)

I hereby declare that the above-mentioned information and details are all true to the best of my knowledge.

Tulip Kumar Saha

(Tulip Kumar Saha)

Date: 14-01-2025

Place: Kolkata