Dr. Moumita Mukherjee, *PhD (Technology)*

Present Position: Professor & Dean (Research & Development)

Address: Department of Physics, School of Basic & Applied Sciences
Adamas University, Adamas Knowledge City,
Barasat - Barrackpore Road, 24 Parganas North, Jagannathpur,
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Education:

- PhD (Technology), Radio Physics & Electronics, Defence R&D Org., DRDO (University of Calcutta), 2009
- M.Tech. in Biomedical Engineering, WB University of Technology, 2007
- M.Sc. in Physics (Applied), University of Calcutta, 2002
- LLB (Hons.) ISBM University (BCI approved), 2024
- PGDIPRL, 2024, National Law School of India University, Bangalore.

Research Key Areas:

- Microwave / Millimeter wave Electronics & Systems
- Terahertz Electronics & systems
- Medical instrumentation
- Medical imaging, AI applications
- Solid state Electronics

Research Highlights:

- Terahertz detection of COVID 19 news covered by Labpulse Newsletter *(https://www.labpulse.com/index.aspx?sec=ser&sub=def&pag=dis&ItemID=801395)* and Photonics Newsletter *(https: // www. photonics. com /Articles /AI_ and_ Terahertz_ Radiation_ to_ Help_Doctors_Fight/a65676*)
- Terahertz Communication attenuation research received Grant from Ministry of Defence – Govt. of India
- Covid 19 detection using THz pulse spectroscopy – acknowledged by Terasense industry (USA) (*https://terasense.com/news/terahertz-rays-may-help-biomedical-engineers-hamstring-covid-19/)*
- IEEE Best Research Paper Award – 2009, 2011, 2019 and 2023
- IIM-DST Smart Fifty Start Up Project reward received for milk adulteration detection sensor development

Experience:

- Professor & Dean (Research & Development), Adamas University, India, 2020-till continuing
- Associate Professor & Associate Dean (School of Science), Adamas University, India, 2017-2020

- Assistant Professor (Sr. Grade) & Associate Dean (School of Science), Adamas University, India, 2015-2017
- Scientist (Reader Rank), DRDO Centre, Ministry of Defence, Govt. of India, 2009-2015
- Visiting Scientist, INEX, Newcastle University, 2011
- Post Doc Fellow, Technical University, Darmstadt, 2009
- Research Associate, DRDO Centre, Ministry of Defence, Govt. of India, 2008
- Senior Research Fellow, DRDO Centre, Ministry of Defence, Govt. of India, 2003-2008
- Adjunct Professor, Biomedical Instrumentation, Calcutta University & WB University of Health Sciences, 2015 –

Academic: (A Total post Ph.D. 14+ years of experience in the UGC Pay-scale)

No	Position Held	Year duration	Salary/ Honorarium (in INR/PM)	Remarks if any
1 (i)	DRDO - Senior Research Fellow	2003-2008	28600.00	Resigned and joined as Research Associate
1 (ii)	Visiting Scientist at Newcastle University	2010- (in two phases)	EURO 12,000.00	Term appointment ended
1 (iii)	Post Doc Research Associate – DRDO, Govt. of India	2009-2010	35,000.00/-	Resigned and joined as Scientist at DRDO
1 (iv)	Adjunct Lecturer (Calcutta University, Biomedical Instrumentation)	2008- 2014	Honorarium basis	----
1 (v)	Postdoc Research Fellow, Technical University, Darmstadt, Germany.	2009	EURO 9,500	------
2	Scientist – (Reader grade) DRDO, Ministry of Defence, Govt. of India	2009 - 2015	6th CPC 15,600-39,100 + GP 8000 + DA+HRA (other allowances as per central Govt. scale)	Discontinuing under internal aadministrative issue pending at tribunal
3	Assistant Professor (Sr. Grade), Adamas University - India	June 2015- September 2017	15,600-39,100 + AGP 8000 + DA +HRA	Resigned and joined as Associate Professor
4	Associate Professor , Adamas University - India	September 2017 – October 2020	37400 – 67,000 + AGP 9000 + DA +HRA	Resigned and joined as Professor
5	Professor , Adamas University - India	November 2020 - present	37400 – 67,000 + AGP 10000 + DA +HRA+ Allowances	---
6	Adjunct Professor at JAP-BMI (WBUHS & Calcutta University)	March 2014- till continuing	Honorarium basis	----

EXPERIENCE (Administrative) :

No	Position Held	Institute / University	Time period
1	Officer-in Charge , MBE Lab	DRDO lab, Govt. of India	2012-2014
2	Academic Coordinator – School of Science	Adamas University	2015-2017
3	Associate Dean, School of Science	Adamas University	2016-2020
4	Professor-in-Charge, Central Time Table	Adamas University	2016-2020
5	Dean (R&D) – Adamas University	Adamas University	2020 – continuing
6	Chairman – University Research Council	Adamas University	2020 – till continuing
7	NAAC Coordinator	Adamas University	2020 – till continuing
8	Member – PBAS Committee	Adamas University	2022 – till continuing
9	Convener – University Research Advisory Board	Adamas University	2020 – till continuing
10	Member, Ph.D. Research Board, (ECE stream)	MAKAUT	2023- till continuing

Research Projects (GoI and Industry / Corporate): Total Grant : 193.69 Lakhs (till date)

1. "Development of a self- consistent Physics based predictive model for the computation of THz- window frequency signal attenuation in fog with varying visibility and in rain with varying rain rates", INR 22.64 Lakh, funded by DRDO – Govt. of India , 2021-2023
2. "Design and development of III-V GaN on Sapphire epitaxial ATT structure for harmonic power generation at W-band frequency", INR 32.10 Lakh, Funded by DRDO, Govt. of India, 2022-24.
3. "Design & development of low-cost non-invasive blood glucose monitoring unit for type I & II diabetic patients", INR 5,00,000/- funded by Industry / Corporate 2018 -2021.
4. "Design optimization of III-V Nitride based on-Chip Terahertz source and oscillators for biomedical application", INR 3,10,000/- funded by Industry / Corporate 2019-2022.
5. "Studies on device-circuit interaction effect of Terahertz source and application in medical imaging", INR 1,85,000/- , funded by Industry / Corporate, 2019-2022.
6. "Design of Array type Terahertz source for non-invasive bio-imaging", Grant: INR 13, 85, 000/- , funded by Industry / Corporate, 2020-2023
7. "The Development of AI Enabled Radiography Assisted Test Process for Mass-Screening of Ncovid-19 Patients", 24 months, Elmax Systems & Solutions , MATLAB India, 1 user license MATLAB + 1 Project fellow + Travel & Consumables, Grant : 15,00,000/-, 2020-2021
8. "Terahertz Scanning and Imaging tool for biomedical industry", INR 12,27,000/-, Funded by Industry / Corporate, 2022-2024
9. "Development of Blood Glucose monitoring unit", INR 60,000/- per year , Funded by IEI – India, Industry / Corporate grant , 2023-2024

10. “Development of AI enabled Rain attenuation model at Terahertz regime”, Start up industry / corporate grant : INR 6,75,000/- per year. 2023-2025 (Consultancy project)
11. “Development of Si epiwafer for MM-wave high power IMPATT diode” : DRDO, Govt. of India, INR 45,53,000.00 – 2023 – 2025
12. Establishment of Academic Administrative Development Centre – AADC under AIU , Project Coordinator & Nodal Officer, INR 2,50,000.00, 2024
13. ANVESHAN – AIU Research Convention, Program Coordinator & Nodal Officer, INR 2,00,000.00, 2024.
14. Establishment of Rekhi Centre of Excellence for Science of Happiness, Project Coordinator & Nodal Officer, INR 15,00,000.0 per year.
15. “Development of cashless payment system for retailers”, RBI R&D grant, Rs. INR 18,50,000/- 2024-2027

Research Patents:

1. UV Sanitizer Device, Patent Number: Patent Application Number: 202031027204, 2021 (Granted)
2. A Single Point Wearable Device for Isolation of the Patients having Infectious Diseases Including COVID-19, Patent Application Number: 2021105614, 2020 (Granted)
3. An AI based screening method for a detection and automated isolation of a Covid-19 positive patient, Patent Application Number: 2021104487, 2020 (Granted)
4. Adjustable and Portable Aeroponics System for Sustainable Plant Growth, Application No.395453-00 (Granted)
5. “An Iot Enabled Automated Aeroponics System” Patent Application No. 202431001915, Published, under examination.

Research Advisor / Supervisor:

- Doctoral Thesis Advisor / Supervisor : 6 (Under progress)
- Doctoral Thesis Advisor / Supervisor: 7 (6 Awarded, 1 Submitted)
- Post Graduate Thesis Advisor / Supervisor: 37 (Awarded)

Award/ Academic Recognition/ Major Professional Activity:

- Editor: Advanced Microwave and Millimeter Wave Technologies: Semiconductor Devices Circuits and Systems –ISBN: 978-953-307-031-5, INTECH (UK), March 2010
- Editor : “Silicon Carbide”, - ISBN: 978-953-307-348-4, INTECH (UK).
- Editor: Springer Lecture Notes in Electrical Engg..
- Editorial Board Member : Journal of Scientific Letters (ISBN : 2456 1495)
- Editorial Board Member : World Science Research Journal (ISBN: 2331 1878):
- Editor: INTECH book “Terahertz Science &Technology: Present status and future trend”.
- Editor: Springer Book Computational Advancement in Communication, Circuits and Systems (ICCACCS):
- Editor: Springer Lecture Notes in Electrical Engineering

- Editorial Board Member: AR Research Publication and Conference World
- Editorial Board Member: International Journal of Wireless Communication and Sensor Network (WCSN)
- Editorial Board Member: Blue Eyes Intelligence Engineering & Sciences Publication (BEIESP)
- Editor: AIP Conference Proceedings on National Conference on Frontiers in Modern Physics (NCFMP 2018) :
- Editor Special issue Journal of Physics through Computation 2019,
- Editor: IoP Journal of Physics : Conference Series (2020)
- Editor: Elsevier Sensors International
- Editor: Special Issue, Open Biomedical Journal (Benthem Publishers)
- Editor: Springer Lecture Notes in Bioenginnering
- Enlisted reviewer in IEEE Transactions, IEEE Access, IEI journal, Springer journals, AIP journals, Hindwai journals and IETE journals.
- Bharat Gourav Award: 2018
- Enlisted in Marques Who's Who in the World, Marques Who's Who in Science & Engineering
- Delivered Invited talk / Keynote talk in 19 International Conferences, Workshop, FDP in India and abroad.
- Editor, Lecture Notes in Electrical Engineering – Springer 2023
- Ph.D. Thesis examiner, Dhaka University, Bangladesh

Research Publication (s)

- Number of research papers published in International refereed SCI/SCOPUS journals 93:
- Number of research papers published in International peer-reviewed IEEE & Scopus Proceedings: 92
- Number of invited Book-Chapters: 13, Books : 03

For Details, Visit: https://vidwan.inflibnet.ac.in/profile/159847

A. Refereed Publications during 2024

1. S. Chatterjee and M. Mukherjee, "Si/Graphene exotic type IMPATT (p+-n-n+-) Opto-Sensor: First Experimental Observation", accepted for Materials Science in Semiconductor Processing (Impact factor: 4.2), 2024
2. Saunak Bhattacharya, Abhijit Kundu, Shajith D. Nair, Anna Chakraborty, Angsuman Sarkar, Moumita Mukherjee, "Design and Analysis of photo-electrical characteristics of Graphene/Si-Nanowire Photo-detector: A potential photo-detector for applications in IR detection", Microsystem technologies,https://idp.springernature.com/authorize/email?code=d72cc82f-967f-4ad0-8750-20b26521e84b, 2024
3. D. Chakraborty, A. Kundu, M. Chakravarti, M. Dey and M. Mukherjee, "Optically Modulated Organic Photo-sensor at Terahertz Regime," 2024 IEEE Applied Sensing Conference (APSCON), Goa, India, 2024, pp. 1-5, doi: 10.1109/APSCON60364.2024.10465884. (IEEE Explorer)
4. T. Saha, R. Dhar and Moumita Mukherjee, "Design and Characterization Studies of Superlattice AlGaN/GaN Based High-K Dielectric-Modulated Dual-Gate Dual-Channel Multi-Cavity MOSHEMT: Application in Medical Diagnostics",

Microsystem Technologies, 2024, DOI:

5. T. Saha, R. Dhar and Moumita Mukherjee, “High-K dielectric-modulated dual-cavity MOSHEMT with III–V nitride GaN/AlGaN semiconductors: application as biosensor”, Microsystem Technologies, 2024, DOI:10.1007/s00542-024-05789-7.
6. A. Das, M. Mukhopadhyay, J. Mukhopadhyay, S. Mishra, S. Sutradhar, A. Sarkar, S. Biswas and Moumita Mukherjee, “Understanding the Ion Conductivity of Self-standing Poly-[Ethylene oxide] Composite Films through Non Fickian Diffusion Mediated Water Uptake Phenomena”, Journal of Polymer Research, Vol. 31, p. 268, 2024
7. A. Das, M. Mukhopadhyay, J. Mukhopadhyay, S. Mishra, S. Sutradhar, A. Sarkar, S. Biswas and Moumita Mukherjee, “Influence of non-linear diffusion controlled phenomena on the sorption capability of PEO-Salt-SiO_2composite electrolyte: A study on property optimization, Journal of Non-Crystalline Solids, Vol. 644, p.123179, 2024
8. Madhumita Mukhopadhyay Anamika Das, Satarupa Biswas, Moumita Mukherjee, Jayanta Mukhopadhyay, “Advancing Functionalization of Polymer Nanocomposite”, Book: Futuristic Trends in Chemical, Material Sciences & Nano Technology, IIP Series; e-ISBN: 978-93-5747-708-6
9. Ajanta Palit, Karabi Ganguly and Moumita Mukherjee, “Novel Strategies Towards Early Bone Cancer Detection: Matlab Integrated Image Processing Approach(International), Journal of Chemical Health Risk on March,2024(Vol-14, Issue-2 Page:-12-19, Impact Factor-0.2,ISSN:22516727)
10. Ajanta Palit, Karabi Ganguly and Moumita Mukherjee Enhancing Lung Cancer Diagnosis with MATLAB and GLCM: A Robust Image Processing Approach(International) published in TWIST,2024(Vol-19, issue-1,Impact Factor-1.75,ISSN:454-462)
11. Ajanta Palit, Karabi Ganguly, Moumita Mukherjee and Utsab Ray, “Detection of Cancer Cells By Using Visible and IR Photo-sensors Through Image Processing Technique (International)”, YMER on January,2024 (Vol-23, Issue-1, Impact Factor -5.7,ISSN: 0044-0477

B. Refereed Publications during 2023

1. D. Chakraborty, S. D. Nair and Moumita Mukherjee, Rain based attenuation and dispersion characteristics of Terahertz wave in tropical climate: Experimentally verified reliability study, March 2023, IEEE Access (IF : 3.5, SCI Journal).

2. D. Chakrbaorty and Moumita Mukherjee Propagation of Terahertz Signal through Tropical Thunderstorm - Proceedings of the IEEE (Scopus), *IEEE Explore, ISBN: 978-1-6654-7206-7, Feb. 2023, 10.1109/EDKCON56221.2022.10032876*

3. S. Chatterjee and M. Mukherjee, “Role of Two-dimensional Electron Gas (2DEG) in GaN/AlGaN Avalanche Transit Time (ATT) Oscillator for RF Performance Boosting: Application in THz Opto-electronics”, Microsystem Technologies in May 2023, (Impact factor: 2.012), Electronic ISSN:1432-1858, Print ISSN:0946- 7076
4. S. Chatterjee and M. Mukherjee, “Electrical characterization in Ultra-Wide-Band-Gap III Nitride heterostructure IMPATT/ HEMATT diodes: a room temperature sub-millimeter wave power source”, Journal of Electronic Materials, Volume 52: 1552-1563, 2023, 10.1007/s11664022-10090-2. (Impact factor: 2.047), Print ISSN: 0361-5235
5. S. Bhattacharya, A. Kundu, D. Chakraborty, A. Sarkar and M. Mukherjee, "Strain Modulated Asymmetrical Si/SiGe Superlattice p+-i-n+ Switches for MMW Low-

Loss Secure Communication Systems," in IEEE Transactions on Device and Materials Reliability, vol. 23, no. 1, pp. 14-26, March 2023, doi: 10.1109/TDMR.2022.3224444.

6. S. Bhattacharya, A. Kundu*, D. Chakraborty, A. Sarkar, S. Biswas and M. Mukherjee, "Photo-electric Characteristics Analysis of Quantum Corrected Strained Nanowire Drift-Diffusion Model based Si/Si0.98C0.02 Asymmetrical Super-lattice Near Infrared Photo-detector," 2023 4th International Conference on Computing and Communication Systems (I3CS), Shillong, India, pp. 1-3, doi: 10.1109/I3CS58314.2023.10127313, 2023.
7. Karabi Ganguly, Ajanta Palit, Moumita Mukherjee, Utsab Ray and Kinshuk Ganguly, "Gastrointestinal Disorders: Identification, Detection, and Categorisation Based on Deeply Cognitive Networks and Epiglodean Characteristics (International)", YMER on December,2023 (Vol-22, Issue - 12,Impact Factor-5.7,ISSN:0044-0477)

C. Refereed Publications during 2022

1. S. Chatterjee and Moumita Mukherjee, "Electrical charecterization in ultra-wide band gap III-Nitride heterostructure IMPATT/HEMATT Diodes: A Room Temperature Sub-Millimeter wave power source", Journal of Electronic Materials (SCI), http://doi.org/10.1007/s11664-022-10090-2

2. S. Bhattacharya, A. Kundu, D. Chakraborty and Moumita Mukherjee, " Strain Modulated AsymmetricalSi/SiGe Superlattice P+-i-n+ switches for low-loss secure communication Systems, IEEE Transactions Device Materials Reliability, December 2022

3. S. Biswas, S Adhikari, R. Chawla, N. Maiti, D. Bhatia, P. Phukan and Moumita Mukherjee, "Artificial intelligence enabled non-invasive T-ray imaging technique for early detection of coronavirus infected patients", Informatics in Medicine Unlocked (Elsevier), DOI: https://doi.org/10.1016/j.imu.2022.101025 , 2022

4. D. Chakraborty and Moumita Mukherjee, 1. Debraj Chakraborty and Moumita Mukherjee, "Terahertz window frequency signal attenuation and dispersion characteristics in Tropical Climate Zone: An experimentally validated reliability analysis", IEEE Access (IEEE publication), SCI journal (IF: 3.4), April, 2022,
D.O.I. 10.1109/ACCESS.2022.3170480

5. Debraj Chakraborty and Moumita Mukherjee, Self-consistent non-linear physics based predictive model for the computation of terahertz signal attenuation in fog with varying visibility in tropical climate zone, Microsystem Technologies (Springer journal), SCI journal, IF: 2.27,
DOI: 10.1007/s00542-022-05259-y, Issue: 03, March 2022

6. S. Chatterjee and Moumita Mukherjee, "Band-engineered quasi-AlGaN/GaN high-electron-mobility-avalanche-transit-time (HEMATT) oscillator: electro-optical interaction study in sub-mm frequency domain", The European Physical Journal Plus, 137 (343), 2022, DOI: https://doi.org/10.1140/epjp/s13360-022-02521-0

7. S. Chatterjee, M. Mukherjee, “High electron mobility effect in band-engineered GaN/quasi-AlGaN based exotic avalanche transit time diode arrays: application as ultra fast THz switches”, Microsystem Technol 28, 1059–1067 (2022). DOI: https://doi.org/10.1007/s00542-022-05261-4

D. Refereed Publications during 2021

1. Moumita Mukherjee, Sulagna Chatterjee " Millimetre-wave high–low IMPATT source development: First on-chip”, Electronics Letters, https://doi.org/10.1049/ell2.12058 , 2021

2. D. Bhatia, A. Mishra and Moumita Mukherjee, “Amalgamation of Blockchain Technology and Internet of Things for Healthcare Applications”, Blockchain for 5G-Enabled IoT, ISBN: 978-3-030-67490-8, DOI: https://doi.org/10.1007/978-3-030-67490-8_22, 2021

3. S. Chatterjee and Moumita Mukherjee, ” Process-Induced Strain-Engineering in Nano-Scale: Coupled Effect of Quantum Confinement and Strain, an Unexplored Aspect of Advanced Materials Research with Immense Potential”, Advances in Materials Science Research Vol 44, ISBN: 978-1-53619-028-1, https://novapublishers.com/shop/advances-in-materials-science-research-volume-44/

4. S. Chatterjee and Moumita Mukherjee, “Strained Si/Si1−y C y superlattice based quasi-read avalanche transit-time devices for terahertz ultrafast switches”, Applied Physics A, ISSN: 0947-8396, https://doi.org/10.1007/s00339-020-04187-w, 2021

5. S. Biswas and Moumita Mukherjee, In-Silico Studies of Alzheimer’s Disease Affected Brain Using a Novel Terahertz Thermography Technique, Lecture Notes in Bioengineering (Springer), ISBN 978-981-336-915-3, pp. 311-318, 2021

6. S. Biswas and Moumita Mukherjee, Comparative Study on Predictive Mathematical Models for Risk Assessment of nCOVID-19 Pandemic in India, Lecture Notes in Bioengineering (Springer), pp. 393-401, ISBN 978-981-336-915-3, 2021

7. A. Das, M. Kajilal and Moumita Mukherjee, Strained Engineered-Induced Mobility P+IN+ Photodiode—A Novel Opto-sensor for Biomedical Application, Lecture Notes in Bioengineering (Springer), ISBN 978-981-336-915-3, pp. 175-181, 2021
8. D. Paul and Moumita Mukherjee, A Review of Brain-Computer Interface, Lecture Notes in Bioengineering (Springer), ISBN 978-981-336-915-3, pp. 507-531, 2021

9. S. Biswas and Moumita Mukherjee, COVED: A Hardware Accelerated Soft Computing Enabled Intelligent Value Chain Based Diagnostic Automation for nCOVID-19 Estimation and Identification, International Journal of Statistics in Medical Research, https://doi.org/10.6000/1929-6029.2021.10.14

10. S. Biswas, Moumita Mukherjee, A Dual Diagnostic Measure driven pragmatic approach for nCOVID-19 Detection by Pervasive Computing, IEEE Explore,

10.1109/ICACITE51222.2021.9404747

11. S. Biswas, C Chakraborty, Moumita Mukherjee, A pragmatic approach for detecting ncovid19 using pervasive computing based on dual diagnostic measures", International Journal of Statistics in Medical Research, vol. 10, pp. 183-193, 2021, DOI: http://dx.doi.org/10.6000/1929-6029.2021.10.17

12. S. Biswas, Moumita Mukherjee, Chest X-Ray image and pathological data based artificial intelligence enabled dual diagnostic method for multi-stage classification of COVID-19 patients, AIMS Biophysics, https://doi.org/10.3934/biophy.2021028, 2021

13. Strain engineered asymmetrical Si/SiGe IR photo-detector, theoretical reliability and experimental feasibility studies : D Chakraborty and Moumita Mukherjee, IEEE Trans Device Materials Reliability, 2021, https://doi.org/10.1109/TDMR.2021.3125452

14. Design and characterization of asymetrical super-lattice Si/4H-SiC pin photo diode array: a potential opto-sensor for future applications in bio-medical domain Abhijit Kundu, S Adhikari, A Das, M Kanjilal, Moumita Mukherjee Microsystem Technologies, Volume 27, pages 569–584 (2021)

E. Refereed Publications during 2020

1. D Modak, A Kundu and Moumita Mukherjee, "Multiple-Graphene Layer based p++-n- n- - n++ device on Si/3C-SiC (100) substrate: a high sensitive visible photo-sensor, Semiconductor Science & Technology, https://doi.org/10.1088/1361-6641/ab909b , May 2020

2. S. Adhikari, Moumita Mukherjee, "Design and Analysis of Novel Room Temperature T-Ray Source for Biomedical Imaging: Application in Full Body Prosthetics", Springer book on Computer Vision and Machine Intelligence in Medical Image Analysis, pp. 137-148. 2020

3. D. Chakraborty, B. Maity and Moumita Mukherjee, "Design and development of an AlGaN/GaN heterostructure nano-ATT oscillator: experimental feasibility studies in THz domain", IET Micro & Nano Letters, vol. 15, issue 1, pp. 41-46, 2020; https://doi.org/10.1049/mnl.2019.0167

4. S. Adhikari, D . Bhatia and Moumita Mukherjee, "Super-lattice GaN/AlxGa1-xN nanoscale MITATT oscillator as Terahertz radiation source: Novel application in breast cancer imaging", Sensors International (Elsevier), vol. 1, p. 100014, https://doi.org/10.1016/j.sintl.2020.100014.

5. S. Biswas and Moumita Mukherjee, "Risk Assessment of nCOVID-19 Pandemic In India: A Mathematical Model And Simulation", doi: https://doi.org/10.1101/2020.04.10.20060830, BioRXiv, 2020 (April).

6. D. Chakraborty, S. Chatterjee and Moumita Mukherjee, "Hybrid Multi-Graphene/Si

Avalanche Transit Time <h-ATT> Terahertz Power Oscillator: Theoretical Reliability and Experimental Feasibility Studies", IEEE Transactions on Device Materials Reliability, , vol. 20, Issue 4, pp. 667 – 677, Article DOI: 10.1109/TDMR.2020.3018664, August, 2020

7. S. Chatterjee and Moumita Mukherjee, "Direct Band Gap Silicon Nanowire Avalanche Transit Time THz Opto-Electronic Sensor with Strain-Engineering", Optical and Quantum Electronics (Springer), vol. 52, p. 488, DOI: https://doi.org/10.1007/s11082-020-02563-7

8. S. Chatterjee and Moumita Mukherjee, "A 2-terminal quasi-AlGaN/GaN/AlGaN HEMATT oscillator as quanta-image sensor for single-photon detection applications in defence industry", Quantum 2020, IoP (UK) Conference, Accepted.

9. Moumita Mukherjee & S. Chatterjee, "THz Medical imaging: Current status and future outlook", THz Biomedical and Healthcare Technologies (Elsevier book), DOI: https://doi.org/10.1016/B978-0-12-818556-8.00006-9

10. D. Chakraborty and Moumita Mukherjee, "Study On Effect Of Photo-illumination On Si/SiC Asymetrical Superlatice Avalanche Transit Time Device: A High Power Terahertz Room Temperature Source", DOI: 10.1109/NCETSTEA48365.2020.9119951, June -2020

11. S. Das, S Neogi and Moumita Mukherjee, "Effect of temperature and deposition rate on the surface morphology of thin Al metal films on glass substrate: Application in Solar Cell", Journal of Physics: Conference Series, Volume 1579, Year 2020

12. S. Chatterjee and Moumita Mukherjee, "Strained Si/Si1−y C y superlattice based quasi-read avalanche transit-time devices for terahertz ultrafast switches", Applied Physics (A), 2020, DOI: https://doi.org/10.1007/s00339-020-04187-w

13. Saikat Adhikari, D. Chakraborty, A.Kundu and Moumita Mukherjee, "Exotic IMPATT Oscillator for Terahertz Thermography: Feasibility Studies in Hepatic Tumor Detection" IETE Journal of Research, 2020 DOI: 10.1080/03772063.2020.1864236

F. Refereed Publications during 2019

1. Abhijit Kundu, Maitreyi Ray Kanjilal, and Moumita Mukherjee, "Physics based Non-linear Large-Signal analysis of Multiple-Graphene Layer exotic pin (p++- n- - n - n++) devices and ultra-fast SPST/SPDT/SPMT switches on Si/3C-SiC (100) substrates for application in THz- Communication", Microsystem Technologies, pp. 1-19, January, 2019. DOI: 10.1007/s00542- 019-04325-2 , Springer-Nature
2. S. Chatterjee and Moumita Mukherjee, "Strain-engineered asymmetrical superlattice Si/Si1-xGex Nano-ATT <p++-n-n--n++> oscillator: Enhanced Photo-sensitivity in THz domain," IEEE Transactions on Electron Devices (IEEE ED) July, 2019 , pp. 1-18, DOI (identifier) 10.1109/TED.2019.2923108.

3. Abhijit Kundu, M. Kanjilal, M. Mukherjee," Cubic Versus Hexagonal SiC vertical pin SPST/SPDT/SPMT Switches for MMW Communication Systems: A Modified Quantum

Drift- Diffusion Model for Switching Characteristics Analysis", Microsystem Technologies, May 2019, pp. 1-19, https://doi.org/10.1007/s00542-019-04445-9 , Springer-Nature

4. Debraj Chakraborty and Moumita Mukherjee, "Si/SiC Heterostructure MITATT oscillator for higher-harmonic THz-power generation: Theoretical reliability and experimental feasibility studies through a novel Quantum modified non-linear classical approach", August 2019, Microsystem Technologies. https://doi.org/10.1007/s00542-019-04580-3

5. Saikat Adhikari and Moumita Mukherjee, "Prospects of Avalanche Transit Time Terahertz Radiation Source in Biomedical Imaging: Application Feasibility in Health Engineering", Springer - Biomedical Engineering & its Application in Healthcare - Book ISBN: 978-981-13-3704-8, pp. 1-23, 2019. Springer Verlag ; https://doi.org/10.1007/978-981-13-3705-5_22

6. Moumita Mukherjee, A Text Book of Engineering Physics, Aryan National Publishing House (India), 2019, February, ISBN: 9788193894231. Pp. 1- 550

G. Refereed Publications during 2018

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