CURRICULUM VITAE

Mukul Kumar Das

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C/o Late Ganesh Ch. Das; Vill&P.O. – Kanchiara

Via – Suria; 24 Parganas (North); P.S. – Amdanga; W.B.-743711, India

DOB: 10th February, 1974; Sex: Male; Nationality: Indian, Marital Status: Married

Career Objective

I aspire to be part of a progressive academic institution that values both teaching and research. My goal is to advance the frontiers of knowledge through innovative research that addresses critical societal challenges. With perseverance, dedication, and hard work, I am committed to achieving excellence in my field.

Career Summary

- **Internship Research** (June – August, 08) – **Ecole Polytechnique, France**.
- **Ph.D.(Tech.)**from Institute of Radio Physics and Electronics, C.U., 2008.
  -- Title of the Thesis: **"Some Studies on the Design of Si-Ge Based Photodetector and HBT for Optical Communication"** under the guidance of **Prof. N. R. Das**
- **M.Tech.** (Radio Physics and Electronics), C.U. 2000
- **B.Tech.** (Radio Physics and Electronics), C.U. 1998
- Research Experience: **19 years**
- Teaching Experience: more than **22 years (**post Ph.D. experience **- 15 years)**
- Publications: **95 [**Int. Jnl (SCI-Core) - 45, Int. Conf. - 46, Nat. Conf. - 4]
- Ph.D. Guidance: **Awarded: 13, Supervising: 03**

Present Status

- Professor, Dept. of Electronics Engineering & Founder Head, Centre of Excellence in Renewable Energy, Indian Institute of Technology (ISM), Dhanbad, India

Research Area

- Design of integrable optoelectronic devices for quantum fiber link and QKD network
- PVD technique for fabrication of thin film semiconductor devices (Solar PV cell, TFT Sensor)
- Modeling & design of semiconductor and opto-electronic devices

Awards and Recognition

- Awarded Senior Membership of IEEE in 2010.
- Recipient of **Young Scientist** award in the General Assembly of International Union of Radio Science (URSI GA), Chicago, USA, August 9 – 16, 2008.
- Selected for **Leverhulme Fellowship**, U.K. in 2008.
- Merit Certificate in B.Sc(Hons.) Examination 1995, **National Scholarship Scheme,** Government of India, Ministry of Human Resource Development.
- **Awarded** for qualifying Part-A and Part-B of **National Graduate Physics Examinatio**n (NGPE) in 1995 conducted by Indian Association of Physics Teachers (IAPT).
- Selected for **Coordinator of Staff Development Program** in 2003 by All India Council for Technical Education (**AICTE**)

Training and Courses Attended

- INUP Familiarization Workshop on Nanofabrication Technologies, 28-30January, 2015, Indian Institute of Science, Bangalore.
- Tutorial on Crosslight Simulation Software, 11 September, National Taiwan University, Taiwan.

Faculty Mobility Program/Industry Visit:

- Visited R&D back-up unit of Bharat Heavy Electrical Limited (BHEL): Amorphous Silicon Solar Cell Plant (ASSCP), Gurugram, Haryana, during 26/07/2022 to 27/07/2022
- Visited National Institute of Solar Energy (NISE), Gurugram, Haryana, an Institute of MNRE, Govt. of India during 28/07/2022 to 29/07/2022
- Visited Sunstone Solar Solutions Pvt. Ltd., a Solar Engineering, Procurement, and Construction (EPC) and System Integrator Company, Bhubaneswar, Odisha during 19/06/2023 to 23/06/2023

Professional Membership

- **Senior Member**, IEEE, USA since **2010**

Educational Profile

Examination Passed	**Year of Passing**	**Board/University**	**Class/Div.**
Secondary	1990	*W.B.B.S.E*	**I**
Higher Secondary	1992	*W.B.C.H.S.E*	**I**
B.Sc (Physics Hons.)	1995	*University of Calcutta*	**I**
B.Tech. (Inst. of Radio Physics & Electronics)	1998	*University of Calcutta*	**I**
M.Tech (Inst. of Radio Physics &Electronics)	2000	*University of Calcutta*	**I** (*Rank: 3*)
Ph.D. (Tech.) (Inst. of Radio Physics & Electronics) *Internship Research* at Ecole Polytechnique, France	2008	*University of Calcutta*	-----

Teaching Experience Detail: **23 years (**post Ph.D. experience **-16 years)**

Duration		**Position/ Designation**	**Institution/Organisation**
UG Level Institute	**01.09.2000** to **02.08.2003**	Lecturer	Dept. of ECE at **Murshidabad College of Engineering & Technology.**
	04.08.2003 to **17.09.2004**	Lecturer	Dept. of ECE at **Bengal Institute of Technology.**
PG Level Institute	**20.09.2004** to **17.09.2008**	Lecturer (Full Time Contractual)	A. K. Choudhury School of Information Technology**, University of Calcutta.**
	24.09.2008 23.09.2011	Assistant Professor	Dept. Electronics Engineering, **Indian School of Mines**, Dhanbad.
	24.09.2011to **16.08.2023**	Associate Professor	Dept. Electronics Engineering, **Indian Institute of Technology (ISM)**, Dhanbad, India.
	17.08.2023 to till date	Professor	Dept. Electronics Engineering, **Indian Institute of Technology (ISM)**, Dhanbad, India.

Courses Taught

- Post Graduate Level
  - Optoelectronic and Photonic Devices
  - Nano-photonics
  - Optical Communication
  - Fiber Optic Sensor
  - Advanced Optoelectronic Devices
- Under Graduate Level
  - Electronic Devices

- Basics of Electronics Engineering
- Semiconductor Device Modeling and Simulation
- Semiconductor Devices and Circuits
- Analog & Digital Circuits
- Analog & Digital Communication.

New Courses Developed

- Semiconductor Device Modeling and Simulation
- Optoelectronic and Photonic Devices

New Laboratories Developed

- Developed Laboratory for **modeling** and **design** of **semiconductor nanostructured devices** with high speed computational facility and professional device simulators, e.g., **SILVACO TCAD, COM-SOL** etc. through project fund.
- Developed **thin film growth lab** including facilities like, Physical Vapour Deposition (Thermal Evaporation, E-Beam and Sputtering) system, Rapid thermal annealing furnace, through the project, Establishment of Centre of Excellence in Renewable Energy (CERE), FAST, MHRD.
- Developed thin film and semiconductor device **characterization lab** including facilities like Hall measurement setup, source measure unit (Kithley 2450) for I-V characteristics, semiconductor parameter analyzer (Keysight B 1500) for C-V and I-V, Stylus based thin film thickness profiler (Bruker) through the project, Establishment of Centre of Excellence in Renewable Energy (CERE), FAST, MHRD.

Externally Funded R&D Project:

- **Collaborator (Co-PI)** of R&D Project entitled "Development of lab-scale quantum fiber network, and design of plug-and-play photonic integrated modules for its transmitter & receiver towards secure 6G communication", under Accelerated Research of the 6G Ecosystem of DoT, Govt. of India (project cost INR 283.6 lakhs - **ongoing**
- **Co-PI** of R&D Project entitled, "**Accurate Correlation of Dot Size Distribution with the Spectral Response of As-grown and Interdiffused Stacked Quantum Dots embedded in p-i-n Solar Cells**" under CRG scheme of DST, Govt. of India (total project cost: **Rs.52.052 lakhs**, duration: **25/12/2020-31/03/2024**) -- Completed
- **Coordinator** of R&D Project, **Centre of Excellence in Renewable Energy** under the Scheme Establishment of Centre of Excellence for Training and Research in Frontier Areas of Science and Technology (FAST) under MHRD, Govt. of India (total project cost: **Rs.400.00 lakhs**, duration: **04/08/2014-31/03/2021**) -- **Completed**
- **Coordinator** of R&D Project, University Grants Commission Assistance at the level of DRS-I in the thrust area "**Modeling of Semiconductor Nanostructured Devices**" under UGC-SAP at IIT (ISM) Dhanbad (total cost - **Rs.28.5 lakhs,** duration:**05/04/2011-31/03/2016**) -- **Completed**.

Ph.D. Supervision:

- Students Awarded:**13**

Sl. No.	Title of the Thesis	Year of Ph.D. Award	Role
1	Design and Analysis of Light Trapping Structure for Thin Film Solar Cell *by Tauseef Ahmed*	**2024**	**Sole-Guide**
2	Design and Analysis of Tin-oxide based Inorganic Thin Film Solar Cell *by Lipika Mandal*	**2024**	**Sole-Guide**
3	Influence of Grain Boundary Orientation on Carrier Recombination in Polycrystalline Silicon based Solar Cells *by Muzaffar Imam*	**2023**	**Sole-Guide**
4	Numerical Investigations on Surface Passivation and Design Improvement of c-Si Solar Cells *by Sudipta Banerjee*	**2023**	**Sole-Guide**
5	Growth of All-oxide Heterojunction with p-SnO_x Absorber for its Prospective Application as Thin Film Solar Cell *by Manoj Kumar*	**2022**	**Sole-Guide**
6	Simulation and Experimental Study on Metal-Oxide-Semiconductor/Silicon Heterojunction Solar Cell *by Syed Sadique Anwer Askari*	**2021**	**Sole-Guide**

7	Theoretical Analysis and Design of Tin-incorporated Group-IV Alloys Based Transistor Lasers *by Ravi Ranjan*	**2018**	**Sole-Guide**
8	Doping Dependent Performance Analysis of III-V Based Quantum Well Infrared Photodetectors *by Md. Aref Billaha*	**2018**	**Sole-Guide**
9	Modeling and Design of Sn-incorporated Gr.-IV Alloy based QWIP *by Prakash Pareek*	**2017**	**Sole-Guide**
10	Modeling of Si-based Radial Junction Micro and Nano-Wire Array Solar Cell *by Bindu Priyadarshini*	**2017**	**Sole-Guide**
11	A Study on Optimization of Power Consumption in Wireless Sensor Network *by Raju Dutta*	**2015**	**Co-Guide**
12	Stimulated Raman Scattering based Ultra Fast All-optical Logic Inverter *by Mrinal Sen*	**2014**	**Sole-Guide**
13	Some Studies on The Design of Si/SiGe based Thin Film Solar Cell *by Santosh Kr. Chowdhary*	**2014**	**Sole-Guide**

- Students Working: 3

Sl. No.	Name of the Candidate	Area of Research	Date of Joining	Role
1	**Mr. Pranaw Kumar** *Full Time Institute JRF*	Metal-oxide based Thin Film Transistors (TFT) for Sensor Applications	23/08/2020	**Sole-Guide**
2	**Kumari Shalini** *Full Time Externally-funded JRF*	Development of ion sensors for biological application	20/07/2024	**Sole-Guide**
3	**Nabajyoti Das** *Full Time Institute JRF*	Photonic technology based in-memory computation	29/10/2024	**Sole-Guide**

Academic Outreach Program (Short Term Course)

Name of the Course	Duration	Organisation/ Institute	Role of the applicant
Modeling & Simulation of Optoelectronic Devices and Solar Photovoltaics (MSODSP) - 2016	29 Aug.-2nd Sept., 2016	ISM, Dhanbad	CI
Advanced Device Modeling & VLSI Technology (ADMVT) 2016	26-28 May, 2016	ISM, Dhanbad	Co-CI

Organizational Capability

Name of Work	Duration	Organisation/ Institute	Role of the applicant	External Cash Flow
Organization of IEEE Technically Co-Sponsored International Conference on Microwave and Photonics (ICMAP)- 2013	13-15 December, 2013	ISM, Dhanbad	Convener	**Rs.10,66,862/-** [*excluding reg. fees of internal participants*]
Organization of National Conference, Frontiers in Electronics Communication and Information Technology (FECIT)-2011	3-4 November, 2011	ISM, Dhanbad	Co-Convener	**Rs.4,37,000/-** [*excluding reg. fees of internal participants*]

Administrative/Professional Experience

Administrative Responsibility:

- **Departmental Faculty Coordinators** for Alumni Affairs
- **Chairperson**, Departmental Grievance Redressal Committee
- **Convener**, DPGC, ECE, since
- **Member** of **Senate** (earlier Academic Council), IIT(ISM), Dhanbad since **2016**.
- **Founder Head**, **Centre of Excellence in Renewable Energy**, IIT(ISM), Dhanbad, 31/12/2014 - till date.
- Worked as **Hostel Warden**of B.Tech. final year students' hostel, Sapphire Hostel, IIT(ISM), Dhanbad for 3 years, June 01, 2013- May 31, 2016.
- **Coordinator**, 3 Years M.Tech. Course, IIIF Kolkata of IIT(ISM), Dhanbad, 10/03/2017 – 30/06/2020
- **Member**, Departmental Faculty Scrutiny Committee (**DFSC**) for Assist. Professor, Associate Professor July, 2018 – August, 2019 & 1st December, 2021 – 30th November, 2022, for Professor also, June 2024-till date

Administrative Responsibility:

- Acted as **member** of **Institute Website Committee,**14/02/2012 –14/02/2018and **Institute Innovation Committee**, IIT(ISM), Dhanbad
- Was departmental **Faculty-in-Charge (T&P)**, 01/07/2009 – 30/06/2012,IIT(ISM), Dhanbad
- Was departmental Website-In-Charge from14/02/2012 –14/02/2018, IIT(ISM), Dhanbad
- **Coordinator** of M.Tech course in Information Technology from 2005 to 2008, in the **A. K. Choudhury School of Information Technology, C.U.**

Reviewer/Examiner:

✓ **Journal (Reviewer)**

- IEEE Trans. on Electron Devices
- Optical and Quantum Electronics(OQEL)
- Indian Journal of Physics.

✓ **Ph. D. Thesis (Examiner)**

- "Design and Development of Superstructure Fiber Bragg Grating for Multiparameter Sensing and Ultra Narrow Band Optical Multichannel Filtering", **BIT Mesra**- 2018
- Ph.D. thesis entitled, "Performance Analysis of Optical Wireless Communication Channel", **IIIT Bhubaneswar** - 2019
- Ph. D. Thesis entitled, "Investigations Using Fuzzy Logic Control to Track Maximum Power Point for Solar Photovoltaic Cell", **JNTU, Hyderabad**- 2019

✓ **Project (Reviewer)**

- "GeSn Passive Devices for Mid-Infrared Sensing Applications" **Engineering Research Council** (SERC), **Singapore** – 2019.
- Member of the committee, formed for scrutinizing the research proposals received by the **Jharkhand Council of Science and Technology (JCST)** in Nov. 2016

Invited Talk:

- Delivered invited speech on "**Passivation Technology for High-efficiency n-Si Solar Cell**" in the 8th International Conference (*IEEE explored*) on "Computer and Devices for Communications (**CODEC 2023**)", December 14-16, 2023.
- Delivered lecture on **Recent Advances in Fabrication and Application of 2D Metal Oxides** in the High-End Workshop on Emerging Nanomaterial-Based Devices for Future VLSI Applications, SERB, at IIT(ISM), Dhanbad, 16th December, 2022
- Delivered technical talk on **R&D Activities on Solar PV-in Brief, at Centre of Excellence in Renewable Energy** at National Institute of Solar Energy (**NISE**), Gurugram, Haryana, an Institute of MNRE, Govt. of India on 29th July, 2022
- Delivered Lectures followed by Hands on Training on **Thin Film Thickness Profiler and Hall Measurement Setup for Semiconductor Characterization** training program, Sophisticated Instruments in Electronics Engineering, organized under the banner of STUTI project, at IIT(ISM), Dhanbad, 23rd to 29th May 2022
- Delivered lecture on **Emerging Trends in Solar Photovoltaic Technology** as Keynote Speaker in the webinar organized by IEEE IEM Kolkata Student Branch, Urjaa, on 22nd November, 2020.
- Delivered lecture on **Solar PV- Fundamentals & Recent Research Trends,** in the **SERB-School** on Brain Storming Session (STC) for **Smart Energy Materials & Devices,** Organized at IIT(ISM), Dhanbad, during 29th April, 2019 to 3rd May, 2019.
- Delivered lecture, "**Recent Trends in Communication, Signal Processing & Solid State Devices**" in short term course organized by NIT Silchar under the banner of TEQIP-III, 13th - 17th March, 2018.
- Delivered lecture on **Optoelectronics** and **Solar Photo-Voltaics** in the **Special Winter School 2018** for University and College Teachers, Organized by **UGC-HRD Centre** at University of Calcutta during Feb.26- Mar.20, **2018**.
- Delivered lectures on **Thin Film Solar Cell: Recent Trends in Research** in the Refresher Course on "VLSI Design and Nanotechnology: Issues and challenges" during 28th Nov. to 17th Dec., 2016, funded by UGC-HRDC December **2016**, organized jointly by the Department of ETC and CSE, Jadavpur University.
- Delivered lecture entitled, "**Optoelectronic Devices based on Sn-incorporated Gr-IV Alloy**" in One Day Seminar, **Recent Trends in Photonics Technology** Org. by OSA & SPIE Student Chapter of ISM, Dhanbad in 2015.
- Delivered lecture on "**Research on Solar Cell in the Dept. of ECE, ISM, Dhanbad**" in the **Industry Institute Interaction Program (IIIP)**at ISM, Dhanbadin 2013.
- Delivered lecture on "**Optical Modulators**" in UGC-NRCPS Summer School, PhotoSMART, June1-19, **2010** at Radio Physics & Electronics, C.U.

Publications:

Book Chapter:

"Evaluation of indium tin oxide-based surface plasmon resonance sensor for near-IR applications", Anjitha M, Niveditha Nair, Varsha. T. Babu, Nishi. G.N, Athulya. S, Sharika E, Tauseef Ahmed, **Mukul Kumar Das**, Rita Rizzoli, Caterina Summonte, Sanjay K. Ram, **Advances in Materials Science and Engineering**, edited by K. B. Kale, B. S. Gandhare, S. S. Kulkarni, Ed. Pune, India: **Grinrey Publishing**, **2021**, Chapter 1, pp. 1-16. ISBN: 978-81-948951-9-0.

International Journal Papers:

1. A M Pillai, N Nair, **Mukul K Das**, S K Ram, "Strategic approaches to enhance efficiency and commercial feasibility of copper-based surface plasmon resonance sensing", ***Next Materials*** Vol.7. No.100377, **2024**, DOI: https://doi.org/10.1016/j.nxmate.2024.100377
2. Tauseef Ahmed, and **Mukul Kumar Das, "**Enhanced Efficiency in Thin Film Solar Cells: Optimized Design with Front Nanotextured and Rear Nanowire-Based Light Trapping Structure, ***IEEE Transactions on Nanotechnology***, Vol. 23, pp. 456-466, June **2024**, DoI: 10.1109/TNANO.2024.3408253
3. Anjitha M Pillai, Niveditha Nair1, **Mukul K Das**, and Sanjay K Ram, "Influence of the configuration of metal sensing layers on the performance of a bimetallic (Ag–Cu) surface plasmon resonance biosensor", ***Nanotechnology***, Vol. 35, No.33, May **2024**, DOI 10.1088/1361-6528/ad4ee8
4. Muzaffar Imam, S. S. A. Askari, and **Mukul Kumar Das**, "Development of Theoretical Model for Effective Carrier Lifetime in Polycrystalline Semiconductors," ***IEEE Trans. on Electron Devices***, Vol.70, pp. 5249-5256, October **2023**, DoI:10.1109/TED.2023.3300654.
5. Tauseef Ahmed, Syed Sadique Anwer Askari, and **Mukul Kumar Das**, "An Efficient Light Trapping Method to Enhance the Efficiency of Thin Film Solar Cell", ***IEEE Trans. on Nanotechnology***, Vol.22, pp. 190-199, **2023** DoI: 10.1109/TNANO.2023.3262367

6. S. Banerjee, S. S. A. Askari and **M. K. Das**, 'Effect of Rear Contact Coverage and Improvement of Efficiency of Crystalline p-Si Solar Cell Compared to State of Art PERC Cell', ***IEEE Access***, Vol.11, pp. 34999-35006, 2023, DoI: 10.1109/ACCESS.2023.3264900
7. Manoj Kumar, S.S. Anwer Askari, Sanjay K. Ram, and **Mukul Kumar Das**, "Investigation of all-oxide thin film solar cell with p-SnO_x as absorber layer", ***IEEE Trans. on Electron Devices***, Vol. 69, No. 3, pp. 1115-1122, March **2022**, DoI: 10.1109/TED.2022.3143077.
8. M Imam, S S A Askari, **Mukul Kumar Das**, "Effect of grain boundary orientation on the recombination in polycrystalline materials: a theoretical and simulation study", ***Applied Physics A-****Materials Science and Processing*, Vol. 128, pp. 891 (1-8), **2022**, DoI: 10.1007/s00339-022-06027-5
9. Anjali Rai, Syed Sadique Anwer Askari, **Mukul Kumar Das**, Subindu Kumar "Efficiency enhancement of solar cells using multi-layer interdiffused InGaAs/ GaAs quantum dots: A numerical approach," ***Micro and Nanostructures***, Vol. 172, pp.207445: 1-12, 2022, DoI: 10.1016/j.micrna.2022.207445
10. Sudipta Banerjee and **Mukul K Das**, "A review of Al_2O_3 as surface passivation material with relevant process technologies on c-Si solar cell", ***Optical and Quantum Electronics***, Springer, Vol.53, pp. 60 (1-25), January, **2021**, DoI: 10.1007/s11082-020-02689-8
11. MA Billaha, **Mukul Kumar Das**, "Transient response analysis of quantum well infrared photodetector", **Optical and Quantum Electronics**, Vol. 53, pp. 451 (1-13), **2021**, DoI: 10.1007/s11082-021-03113-5
12. Lipika Mandal, Syed Sadique Anwer Askari, Manoj Kumar, **Mukul Kumar Das**, "Band Offset Engineering for p-SnO/n-mc-Si Heterojunction Solar Cell", ***Applied Physics Letters***, Vol. 116, Iss.23, pp.234106(1-4), **2020,** DoI: 10.1063/1.5144767.
13. Manoj Kumar, S. S. Anwer Askari, **Mukul K. Das**, Oxygen controlled E-beam evaporation deposited p-SnO_x thin film for photosensitive devices, ***Materials Letters***, Vol. 257, pp.126684(1-5),**2019**, DoI:10.1016/j.matlet.2019.126684.
14. MA Billaha, **Mukul Kumar Das**, "Performance analysis of AlGaAs/GaAs/InGaAs-based asymmetric long-wavelength QWIP", ***Applied Physics A-****Materials Science and Processing*, Vol. 125, pp. 457 (1-7), **2019**, DoI: 10.1007/s00339-019-2750-2
15. Shambhu Sharan Kumar Sinha, Subindu Kumar, **Mukul Kumar Das**, "Dot size variability induced changes in the optical absorption spectra of interdifused quantum dot systems" ***Applied Physics A (Material Sc. & Processing)***, Vol. 125, pp. 774 (10 pg), **2019,** DoI: 10.1007/s00339-019-3050-6
16. Amrita Kumari, Subindu Kumar, Tarun Kumar Sharma, **Mukul K. Das**, "On the C-V characteristics of nanoscale strained gate-all-around Si/SiGe MOSFETs", ***Solid State Electronics***, Vol.154, pp. 36-42. **2019**, DoI: 10.1016/j.sse.2019.02.006
17. Syed Sadique Anwer Askari, Manoj Kumar and **Mukul Kumar Das**, "Numerical study on the interface property of ZnO/c-Si heterojunction solar cell", ***Semiconductor Science and Technology***, Vol. 33, pp. 115003(8pp), **2018**, DoI: 10.1088/1361-6641/aadf71
18. Md. Aref Billaha, **Mukul K Das**, Subindu Kumar, "Effect of Doping on the Performance of Multiple Quantum Well Infrared Photodetector", ***IET Circuits, Devices & Systems***, Vol. 12, Issue 5, pp. 551-556, **2018** (online), DoI: 10.1049/iet-cds.2017.0011
19. Ravi Ranjan, **Mukul K. Das** and S. Kumar "Performance analysis of tin-incorporated group-IV alloy based transistor laser", ***Optics and Laser Technology***, Vol. 106, pp. 228-233, **2018**. DoI:10.1016/j.optlastec.2018.04.010
20. Prakash Pareek, **Mukul K. Das** and S. Kumar, "Numerical Analysis of SiGeSn/GeSn Quantum Well Infrared Photodetector", ***Opto-Electronics Review***,Vol. 26, pp. 149–157, **2018**, DoI:10.1016/j.opelre.2018.03.002
21. Prakash Pareek, Ravi Ranjan and **Mukul K. Das**, "Numerical Analysis of Tin Incorporated Group IV Alloy Based MQWIP", ***Optical and Quantum Electronics***, Springer, Vol.50(179), pp.1-14, **2018**, DoI: 10.1007/s11082-018-1447-7
22. Prakash Pareek, **Mukul K. Das**, S. Kumar, "Responsivity Calculation of Group IV based InterbandMQWIP", ***Journal of Computational Electronics***, Vol.17, pp. 319-328, **2017**, DoI:10.1007/s10825-017-1071-y
23. Kumar Subindu, Kumari Amrita, **Das Mukul K**, "Strain induced changes in performance ofstrained-Si/strained-$Si_{1-y}Ge_y$/relaxed-$Si_{1-x}Ge_x$ MOSFETs and circuits for digital applications, ***Journal of Central South University***, Vol. 24, Issue 6, pp 1233–1244, June **2017**, DoI: 10.1007/s11771-017-3527-4.
24. Prakash Pareek, **Mukul K. Das**, S. Kumar, "Theoretical analysis of tin incorporated group IV alloy based QWIP, ***Superlattices and Microstructures***, Vol. 107, pp. 56-58, **2017**, DoI: 10.1016/j.spmi.2017.04.009
25. Kumar Subindu, Kumari Amrita, **Das Mukul Kumar**, "Modeling gate-all-around Si/SiGe MOSFETs and circuits for digital applications, Journal of Computational Electronics, Vol. 16, Iss. 1, pp. 47-60, March, **2017**, DoI: 10.1007/s10825-016-0941-z
26. Bindu Priyadarshini, **Mukul Kumar Das**, "Modeling and design of Si/SiGe radial heterojunction microwire array solar cell with pyramidal reflectors", ***Optik***, Vol. 140, pp.1047-1055, **2017** DoI:10.1016/j.ijleo.2017.05.015
27. Md. Aref Billaha, **Mukul K Das**, S. Kumar, "Doping Dependent Frequency Response of MQW Infrared Photodetector, ***Superlattices and Microstructures***, Vol. 104, pp. 128-139, **2017**, DoI: 10.1016/j.spmi.2017.02.018
28. Bindu Priyadarshini, **Mukul Kumar Das**, Mrinal Sen, Subindu Kumar "Radial microwire array solar cell with pyramidal structure", ***Superlattices and Microstructures***, Vol. 98, pp.208-219, **2016,** DoI: 10.1016/j.spmi.2016.08.020

29. S. Kumar, A. Kumari and **M. K. Das**, "Development of a Simulator for analyzing some Performance Parameters of Nanoscale Strained Silicon MOSFET-based CMOS Inverters", ***Microelectronics Journal***, Vol.55, pp.8-18, **2016**, DoI: 10.1016/j.mejo.2016.06.009
30. Subindu Kumar, Soumen Sen, **Mukul Kumar Das**, "A comparative analysis of the photoluminescence spectra of annealed ultrasmall In-rich InGaN/GaN quantum dots and wells", ***Optik***, Vol. 127, pp.8654–8661, **2016**, DoI: 10.1016/j.ijleo.2016.06.078
31. Prakash Pareek and **Mukul K Das**, "Theoretical analysis ofdirect transition in SiGeSn/GeSn strain balanced QWIP", ***Optical and Quantum Electronics***, Springer, Vol.48, Article no. 228, pp.1-11, **2016**, DoI: 10.1007/s11082-016-0498-x.
32. Ravi Ranjan and **Mukul K Das**, "Theoretical Estimation of Optical Gain in Tin-incorporated Group IV Alloy Based Transistor Laser", ***Optical and Quantum Electronics***, Springer, Vol.48,Article no. 201, pp.1-11,**2016**
33. Md. Aref Billaha, **Mukul K Das**, "Influence of Doping on the Performance of GaAs/AlGaAs QWIP for Long Wavelength Applications", ***Opto-electronics Review***, Vol.24, Issue 01, pp.25-33, **2016**, DoI: 10.1515/oere−2016−0006
34. Mrinal Sen, **Mukul K Das**, "High-speed all-optical logic inverter based on stimulated Raman scattering in silicon nanocrystal", ***Applied Optics***, *OSA*, Vol. 54, No. 31, pp. 9136-9142, **2015**
35. Raju Dutta, Shishir Gupta &**Mukul K. Das**, "Low-Energy Adaptive Unequal Clustering Protocol Using Fuzzy c-Means in Wireless Sensor Networks,"***Wireless Pers. Comm.***, *Springer*, Vol. 79, Issue 04, pp.1187-1209, **2014,** DoI:10.1007/s11277-014-1924-7
36. Mrinal Sen and **Mukul K. Das**, "Raman mediated all-optical cascadable inverter using silicon-on-insulator waveguides," ***Optics Letters***, *OSA*, Vol. 38, Issue 23, pp. 5192–5195, **2013,** DOI:10.1364/OL.38.005192
37. **Mukul K. Das** and Santosh K. Choudhary, "Ge-content Dependent Efficiency of Si/SiGe Heterojunction Solar cell", ***Applied Physics A****-Material Science and Processing*, Vol. 112, Issue.3, pp. 543-548, (DoI: 10.1007/s00339-013-7761-9), **2013**
38. Mrinal Sen and **Mukul Kumar Das** "Determination of Resonance Frequencies in Silica Fiber using SRS Gain" ***Optical and Quantum Electronics***, Springer, Vol. 45, Issue.7, pp. 735-745, (DoI:10.1007/s11082-013-9679-z), **2013**
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5. Muzaffar Imam, Syed SadiqueAnwerAskari and Mukul Kumar Das,"Enhanced Photovoltaic Performance in Pyramid-Textured Silicon Substrate based n-i-p-p+ Solar Cell", Proc., 3rdInternational Conference on Solar

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3. Santosh K. Choudhary and Mukul Kumar Das, "On the Ge-content Dependent Efficiency of Si/SiGe Heterojunction Solar Cell" Proc. of the Natl. Conf. *FECIT-2011*, ISM, Dhanbad, India, SNT-3, Nov. 3-4, 2011.
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Extracurricular Activities

1. Took part in **Recitation Competition** in Schools, Colleges and in Locality, and **received 1st Prize** in all the Competition.
2. Was a member of the School and College **Cricket Teams.**
3. Acted as a **Quiz Master** in Murshidabad College of Engg. & Technology.

I hereby declare that all the information mentioned above are true, complete and correct to the best of my knowledge and belief.

(MUKUL KUMAR DAS)

Date:04/02/2025

Place: Dhanbad