SHORT CURRICULUM VITAE

Dept. of Basic and Applied Science(Physics)
National Institute of Technology, Arunachal Pradesh
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TUSHAR DHABAL DAS

Teaching Interest

Condensed Matter Physics, Solid State Physics, and Applied Electronics

Research Interests

- III-V compound narrow bandgap semiconductors and nanostructures- Dilute nitrides and dilute bismide
- Liquid Phase and Molecular Beam Epitaxial growth-LPE & MBE
- Characterizations of semiconductors by apparatuses of X-ray Diffraction, Photoluminescence, FTIR, Hall measurement, Raman Spectroscopy, ECV, SEM-EDS, and AFM etc.
- Mid-infrared(2-5μm) optoelectronic devices-LEDs & Photodetectors
- Organic Light Emitting Diode(OLED) and Hybrid Solar Cells

Education

B.Sc.(Hons.) in Electronics, Vidyasagar University, India, 2001
M.Sc. in Electronics, Vidyasagar University, India, 2003
Ph.D. (Sc.)" *Studies on III-V dilute nitride semiconductor Materials*", University of Calcutta,2010
Post Doc., ATDC, Indian Institute of Technology, Kharagpur,4th March 2011-30th June 2012

Professional Experience

- Assistant Professor: 20th April 2015- continue, NIT-AP/ Startup Coordinator- 2018 onward
- Young Scientist Fellow: Dept. of Electronic Science, University of Calcutta, July 2012-19th April 2015
- Visiting Teacher: Dept. of Electronic Science, University of Calcutta, 2012-2014
- Post Doctoral Fellow: Advance Technology Development Centre, IIT Kharagpur,4th March 2011-30th June 2012
- Project Associate: Dept. of Electronic Science, University of Calcutta, 27th August 2007-3rd March 2011(Collaboration with Lancastar University,UK)

Awards/ Honors

- Post Doctoral Fellowship,ATDC-IITKgp,2011
- Young Scientist Fellow, SERB-DST, Govt. of India, 2012

Projects

1. Principle Investigator of DST, Govt. of India Sponsored Fast Track Project, entitle "*Growth and Characterization of Dilute III-V-bismide Materials for IR and Mid IR devices*" (SR/FTP/PS-089/2010 dt. 08/07/2011: Amount-**₹23,04,000/-**) 2012-2015. Dept. of Electronic Science, CU, Kolkata.
2. PI of NIT-AP startup grand "*Design of Solar Electric Bicycle System*" **₹5,00,000/-** Completed at Dept. of BAS, NIT-AP
3. Principle Investigator of DST, Govt. of India Sponsored EMR Project "*Synthesis of Triazolopyrimidine-based iridinium (III) complexes: Application to the Fabrication of OLEDs*" **₹50,92,560/-** Running at Dept. of BAS(Physics), NIT-AP
4. PI of TEQIP-III Seed Grand "*Theoretical and Experimental Investigation on Organic Materials for Perovskite solar cell Applications"* **₹2,00,000/-** Ongoing at Dept. of BAS(Physics), NIT-AP

Indian Patent:

Application no. 3086/DEL/2015, Date Filed: 28/09/2015 and Publication Number: 33/2017 , Publication Date: 18/08/2017, Field: Electrical
Title: "GALLIUM ANTIMONIDE BISMIDE (GASBBI) LAYER BY LIQUID PHASE EPITAXY" Inventors: Sunanda Dhar, Sanat Kumar Das, **Tushar Dhabal Das**, Dept. of Electronic Science, University of Calcutta.

Organize of Conference and seminar

- EPMDS-2006,January 4th - 6th 2006
  SINP Kolkata, organized by Dept. of Electronic Science, University of Calcutta
- One day seminar on Modern Optics-August,2005
  B. M. Birla Science Center, Hyderabad
  Indian student chapter of optical society of America (ISCOSA), Hyderabad, India.

Publication Journals:

1. "*Growth of dilute GaSbN by liquid Phase Epitaxy*"
   A Mondal, **T. D. Das**, N Halder, S. Dhar, J. Kumar, Journal of Crystal Growth, **297,** 4(2006)
2. "*Characterization of dilute InPN layers grown by liquid phase epitaxy*"
   T. D. Das, S. Dhar and B. M. Arora, Journal of Applied Physics, **104**, 103715 (2008)
3. "*Properties of dilute InAsN layers grown by Liquid phase epitaxy*"
   S. Dhar, **T. D. Das**, M. de la Mare and A. Krier, Applied Physics Letter, **93**, 071905 (2008)
4. *"Hall mobility and electron trap density in GaAsN grown by liquid phase epitaxy*"
   S. Dhar, A. Mondal and **T. D. Das,** Semiconductor Science and Technology, **23** ,015007,(2008)
5. "*Optical Absorption Studies of GaSbN Grown by Using Liquid Phase Epitaxy*"
   A. Mondal, Mi-Ra Kim, Yeon-SikChae, Jin-Koo Rhee, S. Dhar and **T. D. Das**
   Journal of the Korean Physical Society, **56**, 1167-1171, 2010.
6. "*Properties of GaAsN layers grown from melt containing Li_3N as flux for enhancing nitrogen dissolution*"
   S. K. Das, **T. D. Das**, and S. Dhar, Semicond. Sci. Technol. **26**, 085028 (2011)
7. *"N incorporation and photoluminescence in In-rich InGaAsN grown on InAs by liquid phase epitaxy*"
   M. de la Mare, S. C. Das, **T. D. Das**, S. Dhar, and A. Krier
   J. Phys. D: Appl. Phys. **44** ,315102 (2011)
8. *"Near infrared photoluminescence observed in dilute GaSbBi alloys grown by liquid phase epitaxy*"
   S. K. Das, **T. D. Das**, S. Dhar, M. de la Mare, and A. Krier
   Infrared Physics & Technology, **55 ,**156(2012)
9. *"Infrared absorption and Raman spectroscopy studies of InSbBi layers grown by liquid phase epitaxy"*
   S. C. Das, **T. D. Das** and S. Dhar, Infrared Physics & Technology, **55**, 303(2012)
10. *"Ordered Si/Si–O nanowire array and its optical properties"*
    A. Mondal , N.K. Singh , P. Chinnamuthu , J .C. Dhar ,**T. D. Das** and P.K. Bose
    Applied Physics A, **110**, 479 (2012)
11. *"Effect of post-growth anneal on the photoluminescence properties of GaSbBi"*
    S K Das, **T D Das** and S Dhar, Semicond. Sci. Technol. **29**, 015003(2014)
12. *"Effect of band alignment on photoluminescence and carrier escape from InP surface quantum dots grown by metalorganic chemical vapor deposition on Si"*
    Nripendra N. Halder, Pranab Biswas, **Tushar Dhabal Das**, Sanat Kr. Das, S. Chattopadhyay, D. Biswas, and P.Banerji, Journal of Applied Physics **115**, 043101 (2014)
13. "*The effect of Bi composition on the properties of $InP_{1-x}Bi_x$ grown by liquid phase epitaxy* "
    T. D. Das, Journal of Applied Physics **115**, 173107 (2014)
14. "*Argon-ion-induced formation of nanoporous GaSb layer: Microstructure, infrared luminescence, and vibrational properties"*
    D. P. Datta, A. Kanjilal, B. Satpati, S. Dhara, **T. D. Das**, D. Kanjilal and T. Som
    J. Appl. Phys. **116**, 033514 (2014)
15. "*InGaAsP/InP QW Impurity Free Intermixing for Variable ZrO_2 Cap Thickness*"
    Sona Das, Dharmander Malik, Tathagata Bhowmick, Utpal Das, and **Tushar D. Das**
    IEEE Photonics Technology Letters, **27**,1511(2015)
16. "*Valence Band Anticrossing model for $GaSb_{1-x}Bi_x$ and $GaP_{1-x}Bi_x$ using k·p Method"*
    D. P. Samajdar, **T. D. Das**, S. Dhar, Materials Science in Semiconductor Processing, **40**, 539 (2015)
17. "*Dependence of heavy hole exciton binding energy and the Strain distribution in $GaAs_{1-x}Bi_x$/GaAs Finite Spherical Quantum Dots on Bi content in the material"*
    Subhasis Das, Akant Sagar Sharma, **T. D. Das**, S. Dhar
    Superlattices and Microstructures, **86** , 221 (2015)
18. "*Calculation of Valence Band Structure and Band Dispersion in Indium containing III–V Bismides by k.p method*"
    D.P. Samajdar, **T. D. Das**, S. Dhar, Computational Materials Science **111,** 497 (2016)
19. *"Investigation of the below band gap infrared absorption properties of GaSbBi epitaxial layers grown on GaSb substrates"*
    D. P. Samajdar, M. K. Bhowal, **T. D. Das** and S. Dhar
    Journal of Materials Science: Materials in Electronics **27**, 8641 (2016)

20. *"Photoluminesce studies of GaSbBi quantum dots grown on GaAs by liquid phase epitaxy*"
T. D. Das, D.P. Samajdar, M.K. Bhowal, S.C. Das, S. Dhar
Current Applied Physics **16**, 1615 (2016)
21. "*Effect of Sb and N resonant states on the band structure and carrier effective masses of* $GaAs_{1-x-y}N_xSb_y$ *alloys and* $GaAs_{1-x-y}N_xSb_y$*/GaAs quantum wells calculated using k.p Hamiltonian*"
Indranil Mal, D. P. Samajdar, **T. D. Das**
Superlattices and Microstructures **106**, 20 (2017)
22. "*Calculation of band structure and optical gain of type-II GaSbBi/GaAs quantum wells using 14-band k·p Hamiltonian*"
Indranil Mal, D. P. Samajdar, **T. D. Das**
Superlattices and Microstructures **109**, 442 (2017)
23. *"Analytical modelling of organic solar cells with scattering interface"*
Asish Hazra, Indranil Mal, D.P. Samajdar, **T. D. Das**
Optik - International Journal for Light and Electron Optics **168**,747 (2018)
24. *"A Novel Gating Approach to Alleviate Power and Ground Noise in Silicon Chips"*
Alak Majumder, Pritam Bhattacharjee, **Tushar Dhabal Das**
Journal of Circuits, Systems, and Computers **27**, 1850146(2018)
25. *"Effect of strain on* $GaAs_{1-x-y}N_xBi_y$*/GaAs to extract the electronic band structure and optical gain by using 16-band kp Hamiltonian"*
ARVIND SHARMA and **T. D. DAS**
Bull. Mater. Sci. **42**, 87 (2019), https://doi.org/10.1007/s12034-019-1793-5
26. "*Impact of localization phenomenon and temperature on the photoluminescence spectra of GaSbBi alloys and GaSbBi/GaAs quantum dots*"
T. Hidouri, I. Mal, D.P. Samajdar, F. Saidi, **T. D. Das**
Superlattices and Microstructures **129,** 252 (2019)
27. "*Property of Fluorescent Host material Alq3 Organic Light Emitting Diode device*"
Arvind Sharma and **T. D. Das**
Advances and Applications in Mathematical Sciences, **18**, 931 (2019)
28. "*Dielectric Parameters Study of* $GaAs_{1-x}Sb_x$ *Alloy from Optical Interband Transition*"
Arvind Sharma, Gaurav Gupta and **T. D. Das**
Journal of Electronic Materials , **49**, 3149 (2020)
29. "*The investigation of hydrostatic pressure dependent optoelectronic properties of GaAsNBi spherical quantum dot*"
Arvind Sharma and **T. D. Das**
Materials Science in Semiconductor Processing, **109**, 104947 (2020)
30. *"Highly efficient OLED device based on the double emissive layer with an EQE about 39%"*
Arvind Sharma and **T. D. Das**
Optik - International Journal for Light and Electron Optics **221**, 165350 (2020)
31. "*Efficiency enhancement of perovskite solar cell by using doubly carrier transport layers with a distinct bandgap of MAPbI3 active layer"*
Sagar Bhattarai, Arvind Sharma, T. D. Das
Optik - International Journal for Light and Electron Optics **224**, 165430 (2020)

Conferences/Workshop:

1. "*Electrical, and optical simulation study of organic light emitting diode with an EQE about 34%*"
Arvind Sharma and **T. D. Das**
National conference on Recent Advancements in Materials science And Nanotechnology (RAMAN 2020) March 26–27, 2020, Institute of Technology, Nirma University, Ahmedabad (Materials today proceedings)
2. *"Theoretical investigation of interband absorption coefficient and physical properties of GaAsNBi alloy with lattice matched to GaAs"*
Arvind Sharma and **T. D. Das**
National conference on Recent Advancements in Materials science And Nanotechnology (RAMAN 2020) March 26–27, 2020, Institute of Technology, Nirma University, Ahmedabad (Materials today proceedings)

3. *"Performance enhancement for scattering effect in perovskite solar cell with distinct cathode materials"*

Sagar Bhattarai, and **T. D. Das**

International Conference on Electronic Systems and Intelligent Computing (ESIC2020), March 1-3, 2020, Dept. of ECE, NIT-Arunachal Pradesh in held during. 'Springer conference proceeding'

4. *"Factor affecting the performance of perovskite solar cell for distinct MAPI layer thickness"*

Sagar Bhattarai, Arvind Sharma and **T. D. Das**

International Conference in Multinational Materials (ICMM2019), December 19-21, 2019, Geethajali Institute of Science and Technology, Hyderabad 'AIP Conference Proceedings'

5. "*Fluorescent trilayer OLED device: an electrical and optical characterization-based simulation*"

Arvind Sharma, Sagar Bhattarai, and **T. D. Das**

International Conference on Multifunctional Materials (ICMM2019), Hyderabad, December 19-21, 2019 (AIP conference proceeding)

6. *"Property of Fluorescent Host material Alq3 Organic Light Emitting Diode device"*

Arvind Sharma and **T. D. Das**

Presented at 2nd International Conference on Communication, Devices and Computing (ICCDC 2019) March 14-15, 2019; Dept. of ECE, Haldia Institute of Technology, WB, India

7. *"Nanostructure of III-V Dilute Bismide Materials for Photovoltaic Devices"*

T. D. Das and D. P. Samajdar

Presented at 8th International Workshop on Bismuth-Containing Semiconductors July 23rd- 26th, 2017 Philipps-University Marburg, Germany

8. *"Effect of active layer on optical properties of polymer OLEDs"*

Dileep Kumar, **T. D. Das**

EMCA-2017 15th 17th March, 2017 by NIT Durgapur , Material Today: proceeding, Volume 11, Part 2, 2019, Pages 651-656.

9. "*Impact of length and thickness of active region on radiated output power of InP/InGaAsP laser*"

Ashish Prajapati ; Pritam Dey ; Jivesh Verma ; **T. D. Das**

11th International Conference on Intelligent Systems and Control (ISCO2017), January 5-6, 2017, Coimbatore, India, IEEE Proceedings, DOI: 10.1109/ISCO.2017.7856009

10. *"Multi BSF Layer InGaP/GaAs High Efficiency Solar Cell"*

Jivesh Verma ; Pritam Dey ; Ashish Prajapati ; T. D. Das

11th International Conference on Intelligent Systems and Control (ISCO2017), January 5-6, 2017, Coimbatore, India, IEEE Proceedings DOI: 10.1109/ISCO.2017.7855998

11. "*A 90 nm leakage control transistor based clock gating for low power flip flop applications*"

Pritam Bhattacharjee, Alak Majumder, Tushar Dhabal Das

IEEE 59th International Midwest Symposium on Circuits and Systems (MWSCAS), 16-19 October 2016, Abu Dhabi, UAE

12. *"Valence Band Anticrossing model for $InAs_{1-x}Bi_x$ by k·p method"*

D. P. Samajdar, **T. D. Das**, and S. Dhar

Foundations and Frontiers in Computer, Communication and Electrical Engineering

Proceedings of the 3rd International Conference C2E2, Mankundu, West Bengal, India, 15th-16th January, 2016,CRC Press 2016,Pages 437–440

13. *"Computational Investigation to Improve the External Quantum Efficiency of Thin Film Tandem Solar Cell."*

Pritam Dey, Ashish Prajapati, Jivesh Verma, **T. D. Das**

IEEE 3rd International Conference on ELECTRONICS AND COMMUNICATION SYSTEMS (ICECS-16), February 25-26, 2016, Karpagam College of Engineering, Coimbatore, IEEE proceedings (2017)

14. *"Multi BSF Layer InGaP/GaAs Optimized Solar Cell"*

Jivesh Verma, Pritam Dey, Ashish Prajapati, **T. D. Das**

IEEE International Conference on Microelectronics, Computing and Communication (MicroCom 2016), January 23-25,2016, NIT, DURGAPUR. IEEE proceedings (2017),p373.

15. *"The Effect of Mole-fraction on Power Spectral Density of Single Quantum well based $In_xGa_{1-x}N$/GaN Blue Light Emitting Diode."*

Ashish Prajapati, Pritam Dey, **T. D. Das**

IEEE International Conference on Microelectronics, Computing and Communication (MicroCom 2016), January 23-25, 2016 NIT-DURGAPUR. IEEE proceedings(2016).p301

16. *"MEH – PPV Thickness Variations for High Luminescent Power OLED"*

Aditya Sharma and **T. D. Das,** Presented at IWPSD 2015, December 7th -10th 2015, IISC, Bangalore

17. *"Effect of bismuth incorporation on the Growth Kinetics and Valence Band Structure for $InP_{1-x}Bi_x$ grown using Liquid Phase Epitaxy"*

D.P. Samajdar, **T. D. Das** and S. Dhar

In book: Recent Trends in Materials and Devices Proceedings ICRTMD 2015, December 15-17, Amity University, New Delhi, Edition: 1, Springer Proceedings , DOI 10.1007/978-3-319-29096-6_33

18. *"Liquid Phase Epitaxial Growth and Low Temperature Photoluminescence of InPBi and GaSbBi"*
T. D. Das, D. P. Samajdar, M. K. Bhowal and S. Dhar
Presented at IWPSD2015, December 7-10, 2015, IISC, Bangalore, India

19. *"Low Temperature Photoluminescence of III-V Bismide grown by Liquid Phase Epitaxy"*
T. D. Das, D. P. Samajdar, M. K. Bhowal and S. Dhar
Presented at Internal Conferences on Condensed Matter Physics-ICCMP2014, November 4-6, 2014, Himachal Pradesh University, Shimla, India.

20. "*Characterization of $InP_{1-x}Bi_x$ Alloy grown by Liquid Phase Epitaxy*"
T. D. Das
Proceedings of the International Workshop on the Physics of Semiconductor Devices 2013, (IWPSD-2013), December 10-14, 2013**,** Amity University, Noida, P879-880, https://www.springer.com/gp/book/9783319030012(2014)

21. "*Calculation of direct E_0 energy gaps for III-V Bi alloys using Quantum dielectric theory*"
D. P. Samajdar, **T. D. Das** and S. Dhar
Proceedings of the International Workshop on the Physics of Semiconductor Devices 2013, (IWPSD-2013), December 10-14, 2013**,** Amity University, Noida, Pages 779-781, https://www.springer.com/gp/book/9783319030012(2014)

22. *"Bi incorporation in GaSbBi films grown by liquid phase epitaxy"*
S. K. Das, **T. D. Das** and S. Dhar
Proceedings of the International Workshop on the Physics of Semiconductor Devices 2013, (IWPSD-2013), December 10-14, 2013**,** Amity University, Noida**,** India, Pages 847-848, https://www.springer.com/gp/book/9783319030012(2014)

23. *"Strain Effects on Band Structure of Wurtzite InGaN/GaN Quantum Well on Si Substrate*"
S. K. Jana, S. Ghosh, S. M. Dinara, **T. D. Das** and D. Biswas
International Conference on Materials Science and Technology (ICMST 2012) June 10-14, 2012, Department of Physics, St. Thomas College Pala, India, IOP Conf. Ser.: Mater. Sci. Eng. 73 012151(2015)

24. *"Future prospects of InGaN/GaN Multiple Quantum Well Solar Cells Research for High Quantum efficiency and Cost effectiveness"*
Arvind Trivedi, Yogendra K. Yadav, K.Takhar, **T. D. Das**, S. Rathi and D. Biswas
International Conference on Materials Science and Technology (ICMST 2012) June 10-14, 2012, Department of Physics, St. Thomas College Pala, India

25. *"MOCVD Growth and Characterization of thermally stable GaAs epi-layers for IC Applications"*
N. N. Halder, S. Mangal, **T. D. Das**, P. Banerji and D. Biswas
Proceedings of the International Workshop on the Physics of Semiconductor Devices (IWPSD-2011) December 19-22, IIT Kanpur, India

26. "*InSbBi layers grown by liquid phase epitaxy*"
Sunanda Dhar, Sanat Das, and **Tushar Das**
Presented at ICMAT2011, June 26-1 July,2011, Suntec City, Singapore

27. "*Infrared Photoluminescence of Dilute GaSb:Bi Alloys Grown by Liquid Phase Epitaxy*"
Martin de la mare, Sanat Das, **Tushar Das**, Sunanda Dhar, and Anthony Krier
Presented at ICMAT2011, June 26-1 July,2011, Suntec City, Singapore

28. "*Properties of GaAsN layers grown from melt using Li3N as flux*"
Sunanda Dhar, Sanat Das, and **Tushar Das,** Presented at ICMAT2011, June 26-1 July,2011, Suntec City, Singapore

29. "*Liquid Phase Epitaxial growth of GaSbBi and it's characterization*"
S. K. Das, **T. D. Das**, S.Dhar, M. de la Mare, and A. Krier
Proceedings of the 10th International Conference on Optoelectronics, Fibre Optics, and Photonics (PHOTONICS-2010), (P502), December 11-15,2010, IIT Guwahati, India

30. "*Band gap reduction in GaAsN layers grown by liquid phase epitaxy using Li_3N as flux*"
S. K. Das, **T. D. Das**, and S. Dhar
Proceedings of the 10th International Conference on Optoelectronics, Fibre Optics, and Photonics (PHOTONICS-2010), (P501), December 11-15,2010, IIT Guwahati, India

31. "*Room temperature luminescence from InAsN layers grown by liquid phase epitaxy*"
S. C. Das, **T. D. Das**, S. Dhar, M. de la mare, and A. Krier
Proceedings of the International Workshop on the Physics of Semiconductor Devices 2009, (IWPSD-2009), (P262), December 15-19 , 2009, SSPL & JMI, New Delhi, India

32. "*Properties of Dilute InPN Alloys Grown by Liquid Phase Epitaxy*"
Tushar Dhabal Das, Sunanda Dhar, and Brij Mohan Arora
Proceedings of the International Conference on Materials for Advanced Technologies2009, (ICMAT-2009), (P164) June 28-July 3,2009, Suntec City, Singapore

33. "*Liquid Phase Epitaxial Growth of Dilute InAsN Layers from Bi Solvents*"

Martin de la Mare, **Tushar Dhabal Das**, Sunanda Dhar, and Anthony Krier
Proceedings of the International Conference on Materials for Advanced Technologies(ICMAT-2009),(P78), Jun 28-July 3,2009, Suntec City, Singapore

34. "*Bandgap reduction in dilute InPN grown by liquid phase epitaxy*"
T. D. Das, S. C. Das, and S. Dhar
Proceedings of 2nd National Workshop on Advanced Optoelectronic Materials and Devices (AOMD-2008), December 22-24,2008,CRME, Banaras Hindu University, India

35. "*Novel LPE Technique for the Growth of Dilute III-V-nitride materials*"
S. Dhar, **T. D. Das**, A. Mondal and N. Halder
Proceedings of 1st National Workshop on Advanced Optoelectronic Materials and Devices (AOMD-2007), December 27–29,2007, BHU, India

36. "*Physical and Electrical Properties of Dilute GaAsN and InAsN Layers Grownby Liquid Phase Epitaxy*"
T. D. Das, A. Mondal and S.Dhar
Proceedings of the International Workshop on the Physics of Semiconductor Devices (IWPSD2007) (pp511-513), December 16-20, 2007. IIT, Bombay / TIFR, India

37. "*Characteristics of dilute GaSbN and InGaAsSbN layers grown by liquid phase epitaxy*"
S. Dhar, A. Mondal and **T. D. Das**
Proceedings of the International Conference on Materials for Advanced Technologies**,** (ICMAT 2007) July 1–6, 2007, Suntec City, Singapore

38. "*Transport properties of GaAsN layers grown by liquid phase epitaxy*"
S. Dhar, A. Mondal and **T. D. Das**
Proceedings of the International Conference on Materials for Advanced Technologies**,** (ICMAT-2007) July 1 – 6, 2007, Suntec City, Singapore

39. "*Band gap reduction in dilute GaSbN layers, grown by liquid phase epitaxy*"
A. Mondal, **T. D. Das**, and S. Dhar
Proceedings of the Eight International Conference on Optoelectronics, Fiber Optics, and Photonics (PHOTONICS2006), December 12-16,2006, Hyderabad Central University, Hyderabad, India

40. "*Characteristics of dilute GaSbN layers, grown by liquid phase epitaxy*"
A. Mondal, **T. D. Das,** and S. Dhar
Proceedings of the International Conference on Computers and Devices for Communication (CODEC-2006), December 18-20, 2006, Institute of Radio Physics and Electronics, University of Calcutta, Kolkata

41. "*Growth of InGaAsSb and InGaAsSbN layers by liquid phase epitaxy*"
T. D. Das and S. Dhar
Proceedings of the International Conference on Computers and Devices for Communication (CODEC-2006), December 18-20, 2006, Institute of Radio Physics and Electronics, University of Calcutta, Kolkata

Research Fellows

- Ph.D Student: 1. Mr. Pritam Bhattacharjee under Visvesvaraya PhD Scheme, (Co-supervisor)2016-Completed
  2. Mr. Arvind Sharma under SERB Sponsored Project, 2019-Running
  3. Mr. Sagar Bhattarai under TEQIP-III, 2019- Running
  4. Mr. Dipankar Gogoi under Institute Fellow 2020-ongoing
  5. Ms. Monika Gogoi, 2020-ongoing
  6. Mr. Gem Taka,2020-ongoing
- Former P.G. Students:
  1. Mr. Aditya Sharma (M.Tech in EDM, 2016) "*Study of Organic Light Emitting Diode using Silvaco Simulator*"
  2. Mr. Pritam Dey (M.Tech in EDM, 2016) "*Simulation of High Efficient Multi Junction Solar Cell"*
  3. Mr. Jivesh Verma (M.Tech in EDM, 2016) "*Designing of High Efficiency Multi-BSF III-V Solar Cell"*
  4. Mr. Ashish Prajapati (M.Tech in EDM, 2016) "Optoelectronics Nature of III-V LEDs and LDs"
  5. Mr. Indranil Mal (M.Tech in MCC,2017) "Studies on III-V dilute nitride, bismide and antimonide alloys using k.p Hamiltonian"
  6. Ms. Sushma Pandey (M.Tech in MCC,2017) "*Optimization of optical and electrical behavior of quantum well based LEDs and LDs*"
  7. Mr. Asish Hazra (M.Tech in MCC,2017) "*Effect of optical scattering interface in organic solar cells*"

8. Mr. Dileep Kumar (M.Tech in MCC, 2017) "*Effects of active layer thickness on optical properties of polymer OLEDs*"
9. Ms. Smriti Baruah (M.Tech in EDM, 2017) "*Light extraction efficiency enhancement in single quantum well infrared light emitting diode*"
10. Mr. Shubham Kumar Kaushik (M.S. in Electronic Science,2018) "*Voice Control Drone UAV using IoT*"
11. Mr. Saurabh Kumar (M.S. in Electronic Science,2018) *"Miller Indices Display Formation in 6×6×6 LED Cube Using Arduino Mega"*
12. Mr. Suraj Prasad (M.S. in Electronic Science,2018) *"Growth and Fabrication of InGaN/AlN nanostructures for Gas Sensing application*'' co-guide
13. Mr. Arvind Sharma (M.S. in Electronic Science,2018) *"To Develop Highly Reflective Low Contact Resistance on p-GaN"* co-guide
14. Mr. Subrat Kumar Pradhan (M.S. in Electronic Science,2018) *"Design Study of High power Pseudospark Switch for Pulse Power application"* co-guide
15. Mr. Kalung Chatung (MS in Mathematical Physics,2018) "14 Band Model to Study band Structure and other Properties of GaAsBi/GaAs"
16. Mr. Pulak Kakati (MS in Mathematical Physics,2018) "Theoretical Investigation on PIN Diode and LED Devices using III-V compound semiconductors"
17. Mr. Shalom Frandev (M.S. in Mathematical Physics,2019) "Calculation of the GaAsBi alloy electrical and GaAsBi/GaAs quantum well optical properties using 14-band k.p Model"
18. Ms. Nada Rima (M.S. in Mathematical Physics,2019) " Modelling and Simulation of Alq3 organic light emitting Diode device"
19. Mr. Sagar Bhattari (M.S. in Mathematical Physics,2019) "Calculation of the band structure, effective mass and spontaneous emission of GaAsBi using 14 band k.p Hamiltonian"
20. Ms. Tarak Rimi (M.S. in Mathematical Physics,2019) "Design and Simulation of Organic Solar Cell: ITO/PEDOT/MDMO-PPV/ZnO/Al Structure"
21. Mr. Ashish Kumar (M.S. in Mathematical Physics,2020) " Modelling of Organic Solar Cell"
22. Mr. Minmay Upadhyay (M.S. in Mathematical Physics,2020) "Analysis of Hybrid Solar cells with nanostructures for better light-trapping"
23. Mr. Prashant kumar Choudhary (M.S. in Mathematical Physics,2020) "Optimization of the photovoltaic cell based on $GaP_{1-x-y}Bi_xN_y$ over Silicon substrate"

- Former Undergraduate Students:
  1. Ms. Gurram Manisha (B. Tech in ECE,2016) : "*Low-Cost Solar Collector for Steam Power Generation"*
  2. Mr. Towsif Khan(B. Tech in ECE,2016)
  3. Mr. Mintu Das(B. Tech in ECE,2016)

Participation in School/Seminar / Conferences

1. "8th International Workshop on Bismuth-Containing Semiconductors" July 23rd- 26th, 2017, Faculty of Physics, Philipps-University Marburg, Germany
2. "Internal Conferences on Condensed Matter Physics- ICCMP2014 , November 4-6, 2014" Department of Physics, Himachal Pradesh University, Shimla, India
3. " International workshop on the Physics of Semiconductor Devices(IWPSD-2013) Dec 10-13th 2013"Amity University, Noida, New Delhi, India
4. "1st International Workshop on Nanomaterials (IWoN): Engineering Photon and Phonon Transport" Jadavpur University, December 14-15,2012, Kolkata,India
5. "International Conference on Materials for Advance Technologies ICMAT2009" 28 June-3rd July 2009, Singapore.

6. "International School on Optoelectronic Materials and Devices" July 27-2nd August 2008.TIFR, Mumbai, India.
7. "International workshop on the Physics of Semiconductor Devices" December 16-20, 2007 Organized by: IIT Bombay & TIFR Mumbai, India
8. "International Conference on Computers and Devices for Communication" December 18 -20, 2006. Hyatt Regency Kolkata, India. Organized by: Institute of Radio Physics & Electronics, University of Calcutta.
9. "PHOTONICS 2006" December 13 -16, 2006. University of Hyderabad, India
10. "The International Workshop on Crystal Growth and Characterization of Advance Materials" 9 -13th January 2006. Crystal Growth Center, Anna University, Chennai, India.
11. "The International Conference on Electronic and Photonic Materials, Devices and System (EPMDS-2006) 4 - 6th January 2006. Organized by: The Department of Electronic Science, University of Calcutta, Kolkata, India.
12. "One day seminar on Materials Physics" 19thSeptember 2005 at Saha Institute of Nuclear Physics Organized by: Material Research Society of India.
13. "One day seminar on Modern Optics" 12th August 2005 at B.M.Birla Science Center, Hyderabad. Sponsored by: Optical Society of America, USA. Organized by: Indian student chapter of optical society of America (ISCOSA), Hyderabad, India.