# **ANIRBAN BAGUI**

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# **RESEARCH INTERESTS**

- 1. Photovoltaic Technology Organic solar cells, Perovskite solar cells, Crystalline *Si* solar cells (PERC and TOPCON), Amorphous *Si* solar cells
- 2. Flexible large area electronics,
- 3. Physics of semiconductor devices,
- 4. Solar radiation resource assessment (SRRA),
- 5. Wind energy

# **CURRENT POSITION**

Head of the Department and Assistant Professor Department of Physics Garhbeta College (*affiliated to Vidyasagar University*) Garhbeta, Paschim Medinipur – 721127, West Bengal

#### PROFESSIONAL AND RESEARCH EXPERIENCE

Post	Tenure	Organization	Salary
Assistant Professor	31/11/2020 - till now	Garhbeta College	Level 10
Fulbright-Nehru Postdoctoral Fellow	15/11/2019 - 14/11/2020	NC State University, USA	\$3035
Assistant Professor (INSPIRE Faculty)	$03/07/2018 - \ 30/12/2020$	IIEST Shibpur	1,30,000
Visiting Researcher	02/01/2019 - 31/03/2019	NTU Singapore	N.A.
DST- INSPIRE Faculty	22/08/2017 - 31/05/2018	CSIR-IICT, Hyderabad	80000
National Postdoctoral Fellow	01/02/2017 - 21/08/2017	CSIR-IICT, Hyderabad	55000
Research Associate	15/12/2015 - 31/01/2017	CSIR-IICT, Hyderabad	46800
Senior Project Associate	06/08/2015 - 14/12/2015	IIT Kanpur	36000
Senior Student Research Associate	02/02/2015 - 04/08/2015	IIT Kanpur	18000
Student Research Associate	01/02/2011 - 01/02/2015	IIT Kanpur	12000

## **PHD THESIS**

 Thesis Title: Effect of electric-field annealing during solvent drying step of active layer in organic solar cell devices
Supervisor: Prof. S. Sundar Kumar Iyer, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India
Award Date: 14/08/2015, Viva date: 04/08/2015

#### **MASTERS THESIS**

Thesis Title:	Fabrication and Characterization of Organic Schottky Diode
Area:	Semiconductor Physics
Supervisor:	Prof. Satyendra Kumar
	Department of Physics,
	Indian Institute of Technology Kanpur, India

# ACADEMIC ACHIEVEMENTS / HONORS

- Awarded Fulbright-Nehru postdoctoral fellowship by USIEF in 2019.
- Got the opportunity to work at NTU Singapore for three months as visiting researcher.
- Selected among **top ten posters** and for Flash Talk in 8th East Asia Symposium on Functional Dyes and Advanced Materials (EAS8) held at CSIR NIIST Thiruvananthapuram in 2017.
- Selected for SERB Indo-US postdoctoral fellowship funded by IUSSTF, Government of India in 2017.
- Selected for INSPIRE Faculty Award sponsored by DST, Government of India in 2017.
- Selected for competitive postdoctoral position at University of Calgary, Canada in 2017 (not availed).
- Recipient of National Postdoctoral Fellowship (N-PDF) provided by SERB, Government of India.
- Reviewer of Organic Electronics (Elsevier), Polymer Chemistry (Royal Society of Chemistry), Journal of Energy Chemistry (Elsevier), Materials Science in Semiconductor Processing (Elsevier).
- Invention award of \$200 from Intellectual Ventures Asia PTE Ltd.
- **Best poster award** in 15<sup>th</sup> International Workshop on the Physics of Semiconductor Devices (IWPSD) held at Delhi in 2009.
- Cash award (Rs. 20,000/-) from Dean Resource Planning & Generation (DRPG), IIT Kanpur for publication in journals listed in ISI web of science.
- **Doctoral Fellowship** (2007-2012) for carrying out PhD research work funded by MHRD, Government of India.
- All India rank 19 in JAM (Joint admission to MSc) Physics in 2005.
- Ranked 7<sup>th</sup> in B.Sc. Physics in Calcutta University in 2005.
- Awarded prestigious Sw. Vireswarananda and Sw. Vimuktananda Memorial Prize from RKMVM, Belur Math for best performance in Indian Spiritual Heritage.
- Awarded Jogindranath Barman Memorial prize for scoring highest marks in BSc Mathematics (General) from RKMVM, Belur Math in 2005.
- Recipient of merit certificate under national scholarship scheme for **rank 67** in higher secondary examination from West Bengal in 2002.
- Recipient of merit certificate and cash award under national scholarship scheme for **rank 34** in West Bengal Secondary Examination (10<sup>th</sup> level) in 2000.
- Recipient of **merit certificate** for Medha Sandhan Pariksha organized by Academic Science, Culture & Promotion Society, West Bengal in the year of 2000.
- Recipient of **merit certificate** for Science Talent Search Test organized by Jaitiya Vijnan Parishad, Indian Science Congress Association in the year of 1995-1999.
- School topper in all classes up to 10<sup>th</sup> level secondary examination.

ACADEMIC QUALIFICATION				
S/n	<b>Examination</b> passed	University/ Board	Year	% / CPI
1.	PhD	IIT Kanpur	2015	9.0 / 10.0
2.	Master of Science	IIT Kanpur	2007	6.9 / 10.0
3.	Bachelor of Science	RKMVM, Belur Math affiliated to Calcutta University	2005	72.9 %
4.	Higher secondary	West Bengal Council of Higher Secondary Education	2002	87.4 %
5.	Secondary	West Bengal Board of Secondary Education	2000	91.0 %

SPONSORED PROJECTS UNDERTAKEN				
Sponsoring Agency	Title of Project	Grant Amount	Period	
United States-India Educational Foundation	Development of see-through all-polymer solar cells	\$ 38,520	2019-2020	

Department of Science & Technology, Government of India	Performance optimization of solution processable fullerene-free small molecule based BHJ organic solar cells	₹ 86,27,420*	2017-2022
Science and Engineering Research Board, Government of India	Optimizing the photovoltaic performance of organic solar cells fabricated with small molecule non-fullerene acceptors (SMNFAs)	₹ 19,20,000*	2017-2018

\*Including award amount

# **IMPORTANT PUBLICATIONS**

#### PATENTS FILED

- 1. "Manufacturing of organic photovoltaic devices", Anirban Bagui, S. Sundar Kumar Iyer, patent application no: 654/DEL/2011, dated: 09-03-2011 (Granted)
- 2. "Integrating electric-field annealing in glove box ante-chamber", **Anirban Bagui**, Anukul Parhi, S. Sundar Kumar Iyer, patent application no: 33/DEL/2015, dated: 06-01-2015
- 3. "A method of manufacturing an organic semiconductor film having improved conductivity", Anirban Bagui, S. Sundar Kumar Iyer, patent application no: 201811047532, dated: 15-12-2018.

#### **BOOK**

1. "Effect of Electric-Field Annealing on P3HT:PCBM Solar Cell Performance" by **Anirban Bagui**, Lap Lambert Academic Publishing, Germany, 2016 (ISBN:3659875511)

#### JOURNAL ARTICLES PUBLISHED

- S. Mitra, S. Ray, N. N. Ghosh, P. Hota, A. Mukherjee, A. Bagui, D. K. Maiti, "Designed and synthesized de novo ANTPABA-PDI nanomaterial as an acceptor in inverted solar cell at ambient atmosphere", *Nanotechnology*, 2023, Volume 34, Issue 31, Pages 315704 (DOI: 10.1088/1361-6528/acd1f8) (Impact factor – 3.953 in 2023)
- P. Nagarjuna, V. Gupta, A. Bagui, S. P. Singh, "Molecular engineering of new electron acceptor for highly efficient solution processable organic solar cells using state-of-the-art polymer donor PffBT4T-2OD", *Journal of Photochemistry and Photobiology A: Chemistry*, 2023, Volume 437, Pages 114492 (DOI: https://doi.org/10.1016/j.jphotochem.2022.114492) (Impact factor – 3.521 in 2023)
- D. Badgurjar, N. Duvva, A. Bagui, Pooja, S. Gahlot, R. Pawar, S. P. Singh, A. Garg, L. Giribabu, R. Chitta, "Phenothiazine functionalized fulleropyrrolidines: synthesis, charge transport and applications to organic solar cells", *Photochemical & Photobiological Sciences*, 2023, Volume 22, Issue 2, Pages 379-393 (DOI: https://doi.org/10.1007/s43630-022-00322-z) (Impact factor 4.328 in 2023)
- Y. Qin, N. Balar, Z. Peng, A. Gadisa, I. Angunawela, A. Bagui, S. Kashani, J. Hou, H. Ade, "The performance-stability conundrum of BTP-based organic solar cells", *Joule*, 2021, Volume 5, Issue 8, Pages 2129-2147 (Impact factor – 26.85 in 2021)
- 5. A. Bagui, S.S.K. Iyer, "Improvement of hole mobility in PTB7 polymer film with a low temperature electric field treatment, Journal of Applied Physics, 2020, Volume 128, Issue 21, Pages 215501 (Impact factor 2.546 in 2018)
- A. Solanki, M. M. Tavakoli, Q. Xu, S. S. H. Dintakurti, S. S. Lim, A. Bagui, J. V. Hanna, J. Kong and T. C. Sum, "Heavy Water Additive in Formamidinium: A Novel Approach to Enhance Perovskite Solar Cell Efficiency", *Advanced Materials*, 2020, 1907864 (DOI: 10.1002/adma.201907864) (Impact factor 25.809 in 2018).

- S. Thawarkar, P. Nagarjuna, A. Bagui, R. Narayan, J. S. Panicker, V. C. Nair, S. P. Singh, "Trifluoromethyl-Directed Supramolecular Self-Assembly of Fullerenes: Synthesis, Characterization and Photovoltaic Applications", *ChemistrySelect*, 2020, vol. 5, issue 3, pages 1115-1121 (DOI: 10.1002/slct.201902974) (Impact factor – 1.716 in 2018)
- R. Datt, Suman, A. Bagui, A. Siddiqui, R. Sharma, V. Gupta, S. Yoo, S. Kumar, S.P. Singh "Effectiveness of Solvent Vapor Annealing over Thermal Annealing on the Photovoltaic Performance of Non-Fullerene Acceptor Based BHJ Solar Cells", *Scientific Reports (Nature)*, 2019, vol. 9, issue 1, pages 8529 (DOI: 10.1038/s41598-019-44232-0) (Impact factor – 4.122 in 2018).
- P. Nagarjuna, A. Bagui, R.S. Rao, V. Gupta, S.P. Singh "Highly Efficient Benzo-Furan Based Electron Acceptor derived from One-Pot Synthesis for High Performance Bulk Heterojunction Solar cells", ACS Applied Energy Materials, 2019, vol. 2, pages 1019-1025 (DOI: 10.1021/acsaem.8b01064).
- N. Chander, E. Jayaraman, M. Rawat, A. Bagui, S.S.K. Iyer "Stability and reliability of PTB7:PC<sub>71</sub>BM and PTB7:PC<sub>61</sub>BM inverted organic solar cells: A comparative study", *IEEE Journal of Photovoltaics*, 2019, vol. 9, pages 183-193 (DOI: 10.1109/JPHOTOV.2018.2874952) (Impact factor 3.075 in 2018).
- B. Yadagiri, K. Narayanaswamy, R.S. Rao, A. Bagui, R. Datt, V. Gupta, S. P. Singh, "D-π-A-π-D Structured Diketopyrrolopyrrole Based Electron Donors for Solution Processed Organic Solar Cells", *ACS Omega*, 2018, vol. 3, pages 13365-13373 (DOI: 10.1021/acsomega.8b01515).
- Suman, A. Bagui, V. Gupta, S. P. Singh, "A Fluorene Core Based Electron Acceptor for Fullerene-Free BHJ Organic Solar Cells – Towards Power Conversion Efficiency Over 10%", *Chemical Communication*, 2018, vol. 54, pages 4001-4004 (DOI:10.1039/C7CC08440D) (Impact factor - 6.29 in 2018).
- P. Nagarjuna, A. Bagui\*, A. Garg, V. Gupta, S. P. Singh, "One-Step Synthesis of New Electron Acceptor for High Efficiency Solution Processable Organic Solar Cells", *Journal of Physical Chemistry C*, 2017, vol. 121, pages 26615–26621 (DOI: 10.1021/acs.jpcc.7b08167) (corresponding author) (Impact factor – 4.772 in 2016).
- Suman, A. Bagui, R. Datt, V. Gupta, S. P. Singh, "A Simple Fluorene Core-Based Non-fullerene Acceptor for High Performance Organic Solar Cells", *Chemical Communication*, 2017, vol. 53, pages 12790-12793 (DOI:10.1039/C7CC08237A) (Impact factor - 6.567 in 2016).
- P. Nagarjuna, N. Chaturvedi, A. Bagui, R. Runjhun, A. Garg, S.P. Singh, "Solution-Processed Organic Solar Cells Using New Electron Acceptor Derived from Naphthalene and Fluorene Unit", *ChemistrySelect*, 2017, vol. 2, pages 7913–7917. (DOI: 10.1002/slct.201700910) (Impact factor – 1.505 in 2017).
- K. Narayanaswamy, B. Yadagiri, A. Bagui, V. Gupta, S. P. Singh, "Multichromophore Donor Materials Derived from Diketopyrrolopyrrole and Phenoxazine: Design, Synthesis and Photovoltaic Performance", *European Journal of Organic Chemistry*, 2017, vol. 2017, pages 4896-4904 (DOI: 10.1002/ejoc.201700845) (Impact factor - 3.065 in 2016).
- R. S. Rao, A. Bagui, G. H. Rao, V. Gupta, S. P. Singh, "Achieving high efficiency using BODIPY dye as photoactive material for solution-processed organic solar cells", *Chemical Communication*, 2017, vol. 53, pages 6953-6956 (DOI:10.1039/C7CC03363J) (Impact factor – 6.567 in 2016).
- Suman, V. Gupta, A. Bagui, S.P. Singh, "Molecular Engineering of Highly Efficient Small Molecule Nonfullerene Acceptor for Organic Solar Cells", *Advanced Functional Materials*, 2017, vol. 27, pages 1603820 (DOI: 10.1002/adfm.201603820) (Impact factor – 11.8 in 2016).
- P. Nagarjuna, A. Bagui, V. Gupta, S.P. Singh, "A highly efficient PTB7-Th polymer donor bulk heterojunction solar cell with increased open circuit voltage using fullerene acceptor CN-PC70BM", *Organic Electronics*, 2017, vol. 43, pages 262-267 (equal contribution) (DOI: 10.1016/j.orgel.2017.01.015) (Impact factor – 3.471 in 2016).

- Suman, A. Bagui, V. Gupta, K.K. Maurya, S.P. Singh, "High-Performance Non-Fullerene Acceptor Derived from Diathiafulvalene Wings for Solution-Processed Organic Photovoltaics", *The Journal of Physical Chemistry C*, 2016, vol. 120, pages 24615-24622 (equal contribution) (DOI: 10.1021/acs.jpcc.6b07778) (Impact factor – 4.772 in 2016).
- P. Nagarjuna, A. Bagui, J. Hou, S.P. Singh, "New Electron Acceptor Derived from Fluorene: Synthesis and Its Photovoltaic Properties", *The Journal of Physical Chemistry C*, 2016, vol. 120, pages 13390-13397 (DOI: 10.1021/acs.jpcc.6b03768) (Impact factor 4.772 in 2016).
- 22. A. Solanki, A. Bagui, G. Long, B. Wu, T. Salim, Y. Chen, Y.M. Lam, T. C. Sum, "Effectiveness of External Electric Field Treatment of Conjugated Polymers in Bulk-Heterojunction Solar Cells", ACS Applied Materials & Interfaces, 2016, vol. 8, pages 32282-32291 (DOI: 10.1021/acsami.6b08012) (Impact factor 8.097 in 2018).
- 23. A. Bagui, S.S.K. Iyer, "Increase in hole mobility in poly (3-hexylthiophene-2,5-diyl) films annealed under electric field during the solvent drying step", *Organic Electronics*, 2014, vol. 15, pages 1387-1395 (DOI: 10.1016/j.orgel.2014.03.042) (Impact factor 4.22 in 2014).
- 24. A. Bagui, S.S.K. Iyer, "Effect of Solvent Annealing in the Presence of Electric Field on P3HT:PCBM Films Used in Organic Solar Cells", *IEEE Transactions on Electron Devices*, 2011, vol. 58, pages 4061-4066 (DOI: 10.1109/TED.2011.2164545) (Impact factor – 3.27 in 2011).

## CONFERENCE PUBLICATION

- B. Dalal, A. Bagui, S. Sengupta, "Meteorological Data Driven Prediction of Global Solar Radiation", 2021, IEEE Second International Conference on Control, Measurement and Instrumentation (CMI), Pages 184-189
- A Bagui, SSK Iyer, "Improvement of morphological and electrical properties in poly (3-hexylthiophene-2, 5-diyl) Films Formed by Thermal Annealing in the presence of electric field", *Proceeding of 38<sup>th</sup> IEEE Photovoltaic Specialists Conference*, 2012, pages 002301-002305 (DOI: 10.1109/PVSC.2012.6318058)

### **INTERNATIONAL CONFERENCE / EXHIBITION PRESENTATIONS**

- Uttam Sharma, Anirban Bagui, "Estimation of Hole Mobility in PTB7 Films from Imaginary Part of Frequency Dependent Impedance of the Device", Young Scientists' Conference, India International Science Festival, Biswa Bangla Convention Centre, Kolkata, 5-8<sup>th</sup> November, 2019.
- 2. Anirban Bagui, Shiladitya Acharyya, "Human Resource Development at CEGESS, IIEST Shibpur for Renewable Energy Supported by MNRE", 2<sup>nd</sup> Global RE-INVEST Renewable Energy Investors' Meet and Expo, India Expo Mart, Greater Noida, 3rd to 5th October 2018.
- 3. Anirban Bagui, S. P. Singh, "Effectiveness of vacuum drying over thermal annealing on the photovoltaic performance of polymer:non-fullerene acceptor based BHJ organic solar cells" -, 8th East Asia Symposium on Functional Dyes and Advanced Materials (EAS8), CSIR-NIIST, Thiruvananthapuram in September, 2017.
- J. Eswaran, M. Rawat, S. Singh, A. Bagui, A.P. Parhi, S.S.K. Iyer "Fabrication of Organic Solar Cell Sub-Modules", 18<sup>th</sup> International Workshop on the Physics of Semiconductor Devices (IWPSD), IISc Bangalore, December 7-10, 2015.
- 5. Anirban Bagui, S. S. K. Iyer, "Improvement in charge transport properties in P3HT films annealed under the influence of electric-fields", Indo-US workshop on Organic Solar Cells, IIT Kanpur, 20-21st March, 2014.
- Anirban Bagui, S. S. K. Iyer, "Improvement of morphological and electrical properties in poly (3-hexylthiophene-2, 5-diyl) films formed by thermal annealing in the presence of electric field during the solvent drying step", IEEE 38<sup>th</sup> Photovoltaic Specialists Conference (PVSC-38), Austin, Texas from 3-8<sup>th</sup> June in 2012.
- Anirban Bagui, S. S. K. Iyer, "Hole mobility improvement in poly(3-hexylthiophene-2,5-diyl) films formed by thermal annealing in an electric field during solvent drying step", 16<sup>th</sup>International Workshop on the Physics of Semiconductor Devices (IWPSD), IIT Kanpur, India from 19-22 December in 2011.

- 8. Anirban Bagui, S. S. K. Iyer, "Enhancement in power conversion efficiency of P3HT:PCBM based blend organic solar cell by applying an electric field during solvent drying", IIT Kanpur REACH Symposium held at IIT Kanpur, 10-12th October, 2010.
- 9. Anirban Bagui, S. S. K. Iyer, "Effect of annealing on P3HT: PCBM based bulk heterojunction organic solar cell", International Workshop on the Physics of Semiconductor Devices (IWPSD), New Delhi, Indiafrom 16-20 December in 2009.
- D. Datta, Anirban Bagui, S. S. K. Iyer, and S. Kumar, "Ellipsometric studies on CuPc/C<sub>60</sub>heterojunction for solar cell applications", International Workshop on the Physics of Semiconductor Devices (IWPSD), New Delhi, Indiafrom 16-20 December in 2009.
- D. Datta, Anirban Bagui, V. Tripathi, S. S. K. Iyer, S. Kumar, "Study of hole transport interlayer in CuPc/C<sub>60</sub> based organic solar cells", 18<sup>th</sup> International Photovoltaic Science and Engineering Conference & Exhibition (PVSEC), Kolkata, India from Jan 19-23, 2009.

## WORKSHOP AND SHORT COURSES PARTICIPATED

- 1. 3<sup>rd</sup> International Winter School for Graduate Students (IWSG 2011) at IISc Bangalore from 3<sup>rd</sup> to 8<sup>th</sup> January, 2011
- 2. 5<sup>th</sup> INUP Familiarization Workshop on Nanofabrication Technologies at IISc Bangalore from 10<sup>th</sup> to 14<sup>th</sup> January, 2011.
- 3. Regular summer and winter courses on organic electronics used to be held at Samtel Centre for Display Technologies at IIT Kanpur (2007-2015).

# EXPERIMENTAL SKILLS

## (A) THIN FILM AND DEVICE PROCESSING

- Working experience in Class 1000-100 clean room and yellow rooms for 9 years (2006 2015)
- Experience of handling, cleaning, patterning of substrates by photolithography process,
- Patterning of ITO coated substrate and selective removal of organic layers by LASER scriber
- Surface treatments of substrates, such as ozonization, plasmaization
- Preparation of thin films using techniques such as spin-coating, and state of the art ultra-high vacuum thermal evaporation unit equipped with multiple effusion cells for co-evaporation of different materials and in situ mask changing facility
- Thermal annealing and electric-field assisted treatments (to control thin film morphology)
- Fabrication of organic solar cells in nitrogen environment inside glove box independently
- Use of dispenser and pressing systems for encapsulating devices

#### **(B) CHARACTERIZATION**

- Micro-structural: X-ray diffraction (XRD), scanning electron microscope (SEM), atomic force microscope (AFM)
- **Electrical:** Current-voltage, capacitance-voltage, frequency response of different devices, spectral response measurement, low temperature measurement using cryostat, Kelvin-probe to measure work function, four probe to measure sheet resistance of thin films
- Optical: UV-visual photo-spectroscopy, photo-luminescence (PL), solar simulator, profilometer
- Thermal: Thermogravomatric analysis of materials by TGA/DTA 6300

#### (C) SOFTWARE SKILLS

• Fortran, Matlab, {Gaussian09, Gauss-View, Gaussum, Avogadro (molecular chemistry)}, Latex, Origin Pro, Auto-Cad, ChemDraw, Endnote point, MS Office

# INSTRUMENTS / LABORATORY DEVELOPED

At CEGESS of IIEST Shibpur, I am involved in setting up of a new "Organic and Perovskite Solar Cell Lab" with Prof. Hiranmoy Saha. It will be equipped with weighing balance, magnetic stirrer, spin coater, hot plate, UV-ozone cleaner, glove box attached with thermal evaporator and electrical characterization system. Some of the instruments have been already procured.

- During the course of my PhD program, I developed the following instruments at IIT Kanpur under the mentorship of my PhD thesis supervisor Prof. S. Sundar Kumar Iyer:
  - State-of-the-art Glove box for organic solar cell fabrication integrated with spin coater, oven, hotplate, thermal evaporator, laser scriber for patterning, dispenser, pressing unit, solar simulator and Keithley-2400 electrometer (manufacturer *Jacomex*, France)
  - Electric-field annealing set-up to be used for fabrication of organic semiconductor devices
  - Temperature dependent electrical measurement set-up for organic electronic devices under dark and light conditions.

# TEACHING EXPERIENCE

## Currently, as an Asst. Professor at Garhbeta College, I have undertaken following Bachelors courses according to the syllabus of Vidyasagar University:

#### Honors courses:

- CC2: Classical Mechanics
- CC4: Waves and Optics
- CC7: Digital Systems and Applications
- CC12: Solid State Physics
- CC14: Statistical Mechanics
- SEC2: Renewable Energy and Energy Harvesting
- DSE3: Communication Electronics

#### General:

• DSC1A: Classical Mechanics

#### Generic:

- GE2: Thermal Physics and Statistical Mechanics
- GE3: Solid State Physics
- GE4: Electrodynamics

#### **Bachelor in Computer Application:**

- BCA1104: Digital Electronic (Odd Sem)
- During tenure of DST-Inspire faculty at IIEST Shibpur (formerly BESU), I taught following M. Tech courses at School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS, formerly CEGESS).
  - RE-901: Renewable Energy Sources and Materials
  - RE-903: Solar thermal Technology and applications"
  - RE-906: Energy Laboratory
  - RE-1005/1: Advanced Solar Cell Concepts and related technology
  - RE-1006: Energy Systems Laboratory
- During PhD at IIT Kanpur, I served as Teaching assistant for following subjects:
  - Teaching assistant (TA) for PHY-461, PHY-462 (M.Sc. Physics laboratory) at IIT Kanpur
  - TA for PHY-101 (B. Tech. 1st year Physics laboratory) at Dept. of Physics, IIT Kanpur
  - TA for PHY-441 (M.Sc. Electronics laboratory) at Dept. of Physics, IIT Kanpur

## SUPERVISION OF M.TECH STUDENT

## **COMPLETED:**

Student name: Mr. Muntun Kumar (Roll number: 325717001, CEGESS, IIEST Shibpur)Research area: "Design and Analysis of Aeroleaf of Wind Tree"Supervisors: Prof. Nirmal Kumar Deb and Dr. Anirban Bagui

Student name: Mr. Uttam Sharma (Roll number: 325718023, CEGESS, IIEST Shibpur)Research area: "Study of trap charge limited current in organic solar cell"Supervisors: Dr. Anirban Bagui and Sumita Mukhopadhyay

**Student name:** Mr. Bishnu Dalal (Roll number: 325718012, CEGESS, IIEST Shibpur) **Research area:** "Prediction of solar radiation with the data available from SRRA station using artificial neural network (ANN) model"

Supervisors: Prof. Samarjit Sengupta and Dr. Anirban Bagui

## **UG PROJECTS**

Student Name: Mr. Subham Pal (Enrollment no-510616030, Department of Electrical Engineering, IIEST, Shibpur)

**Project topic:** Prediction of solar irradiation by least linear regression model and integration to Bio-Solar-Wind-Bess microgrid

Supervisors: Dr. Anirban Bagui, Prof. Samarjit Sengupta, Prof. Hiranmay Saha

# ADMINISTRATIVE EXPERIENCE

**I** am serving as Head of the Physics department at Garhbeta College since 11/05/2023.

- **I** am also involved in the following academic subcommittees at Garhbeta College as Joint Convener:
  - Internal assessment sub-committee
  - NAD registration sub-committee

#### **I am member of the following sub-committees:**

- Internet and website sub-committee
- Career Counselling sub-committee
- Online Admission sub-committee
- Games and Sports Council
- Cultural Sub-committee
- Computer and Computer Maintenance Sub-Committee
- Research and Innovation Committee
- Seminar Organizing Committee
- Event documentation

# • I also gained administrative experience while working as Assistant Professor under DST-INSPIRE Faculty scheme at CEGESS, IIEST Shibpur.

- Question Paper Setter for MTech courses RE-903, RE-1005/1 and RE-1006
- Examiner Evaluating answer scripts, taking viva-voce, invigilation duties and tabulation of marks
- Faculty-in-charge and convener of 'DST-IIEST Solar PV hub' website management committee (<u>http://cygnusdvlp.in/IIEST/index.php</u>)
- Faculty-in-charge of advanced 'Solar Radiation Resource Assessment (SRRA)' system installed by NIWE, GOI at IIEST Shibpur
- Involvement in M.Tech admission process and smooth functioning of the program

- Member of Departmental Academic Committee (DAC) and preparing resolutions of DAC meetings
- Member of Departmental Purchase Committee (DPC)

I hereby declare that the information's given above are true to the best of my knowledge and belief.

Place: Garhbeta Dated: January 30, 2025

**ANIRBAN BAGUI**