



## KAZI NAZRUL UNIVERSITY, ASANSOL

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### **Dr. ARINDAM BISWAS**

Associate Professor and Head, Department of Mining  
Coordinator, Centre of IoT and AI Integration Education, Industry and Agriculture  
Director, School of Geosciences and Technology, Kazi Nazrul University  
Head (Addl. Charge), Department of Computer Science Engineering.

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Dr. Arindam BISWAS received M-Tech degree in Radio Physics and Electronics from University of Calcutta, India in 2010 and PhD from NIT Durgapur in 2013. He has worked as a Post-Doctoral Researcher at Pusan National University, South Korea with prestigious **BK21PLUS Fellowship, Republic of Korea. Dr. Biswas has received DST-JSPS Invitation fellow at RIE, Japan, DST-ASEAN Invitation fellow at Duy Tan University, Vietnam and Taylors University, Malaysia, Visiting Fellow to Department of Electrical and Computer Engineering, National University Singapore.** He has worked as Specially Appointed Associate Professor (Visiting) at **Research Institute of Electronics, Shizouka University, Japan.** He has been selected for **IE (I) Young Engineer Award: 2019-20, KNU Best Researcher Award (Engineering and Technology): 2021, and KNU Best Faculty Award-2022 (Faculty of Science and Technology), Best Paper Award in different International Conferences.** Presently Dr. Biswas is working as an Associate Professor in School of Mines and Metallurgy at Kazi Nazrul University, WB, India where he has been actively engaged in teaching, research and administration. He has **68 technical papers** in different journals and **43 conference proceedings and 8 authored books/monographs, 21 Edited Volume and 10 book chapter** with international repute. Dr. Biswas received research grants from different funding Agencies namely SERB, DST-ASEAN, DST-JSPS, UGC and Industrial consultancy from ECL . He has also received International Research Grant from **Centre of Biomedical Engineering, Tokyo Medical and Dental University** in association with RIE, Shizouka University, Japan for four consecutive years 2019 to 2023. **Dr. Biswas has produced 06 PhD students till date.** He has organized and chaired difference International Conferences in India and abroad. His research interest is in carrier transport in low dimensional system and electronic device, non-linear optical communication, THz Semiconductor Source, IoT, and Optimization. Dr. Biswas acted as reviewer for reputed journals. He is life member of the Institute of Engineers (India), MGMI and Regular Fellow of Optical Society of India.

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## **EDUCATION:**

- Post-Doctoral Researcher, School of Engineering, Pusan National University, South Korea
  - Supervisor: Prof. Young Min Song (<https://www.gist-foel.net/people>)
  - Area of Research: Computational Study of Material Science
- Ph.D. (Engineering.), National Institute of Technology, Durgapur, 2013
  - Area: Quantum Computing
  - Supervisor: Dr. Durbadal Mandal, Associate Professor, Dept. of ECE, NIT Durgapur.
- M. Tech., University of Calcutta, 2010, Radio Physics and Electronics, 1st Class (CGPA-8.01)
- B.Tech, West Bengal University of Technology, 2007, Electronics and Communication Engineering, 1<sup>st</sup> Class (CGPA-7.75)

## **PROFESSIONAL EXPERIENCE:**

- 1. KAZI NAZRUL UNIVERSITY (PUBLIC), ASANSOL, WB, INDIA**
  - Associate Professor, Mining Engineering (13.01.2021- till date)
  - Assistant Professor, Mining Engineering (30.11.2018-13.01.2021 forenoon)
  - Coordinator, Centre of IoT and AI Integration Education, Industry and Agriculture, Kazi Nazrul University, India. (23-08-2022 to till date)
- 2. RESEARCH INSTITUTE OF ELECTRONICS, SHIZOUKA UNIVERSITY, JAPAN**
  - Specially Appointed Associate Professor (October 5, 2017- December 27, 2017)
- 3. ASANSOL ENGINEERING COLLEGE, ASANSOL**
  - Associate Professor, Dept. of ECE (July 21, 2017 to November 30,2018).
- 4. NSHM KNOWLEDGE CAMPUS, DURGAPUR**
  - Associate Professor, Dept. of ECE (July 7, 2015 to July 20, 2017)
- 5. PUSAN NATIONAL UNIVERSITY, SOUTH KOREA**
  - POST DOCTORAL RESEARCHER (March 12, 2015 to June 30, 2015)
- 6. DUMKAL INSTITUTE OF ENGINEERING AND TECHNOLOGY**
  - Associate Professor, Dept. of ECE (February1,2015 to March8,2015)
- 7. HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE**
  - Associate Professor, Dept. of ECE (June11,2014-January31,2015)
- 8. DR. B C ROY ENGINEERING COLLEGE, DURGAPUR**
  - ASSISTANT PROFESSOR (SR. GRADE) (AUGUST2,2013- June14,2014)

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## 9. DUMKAL INSTITUTE OF ENGINEERING AND TECHNOLOGY

- Associate Professor, Dept. of ECE (July 3,2011 to August 1, 2013)
- Assistant Professor, Dept. of ECE (September 7, 2010to July2, 2011)

## 10. DUMKAL POLYTECHNIC

- LECTURER (Feb1,2010 to Sept.6, 2010)
- LECTURER (Sept. 22, 2007, to Sept 30, 2008)

### ADMINISTRATIVE EXPERIENCE IN HEIs or Equivalent:

- a) Director, School of Geosciences and Technology (28.1.2022- Ongoing)
- b) Head, Mining Engineering (13.01.2021 afternoon-Ongoing)
- c) Coordinator, Mining Engineering (16.10.2019-13.01.2021 forenoon)
- d) Head (Addl. Charge), Computer Science (1.02.2021- Ongoing)
- e) Coordinator (Addl. Charge), Computer Science (14.06.2020-13.01.2021 forenoon)
- f) Head of Department, Dept. of ECE, NSHM Knowledge Campus Durgapur (July 7, 2015, to July 20, 2017)
- g) Served as Chairperson/ Member for Undergraduate Board of Studies (UG BOS) of ELECTRONICS for a term of four years w.e.f. 07.04.2020.
- h) Member of Court of Kazi Nazrul University 13.01.2021 to ongoing
- i) Member of Executive Council of Kazi Nazrul University (1.04.2022 to 31.03.2023)
- j) Member of the Governing Body of RICIS, Raniganj, West Bengal, since June 2023
- k) Board Observer for the upcoming Joint Entrance Exam-2023 (WBJEEB-2023)
- l) NODAL OFFICER for the Venues of District – PASCHIM BARDHAMAN for 24<sup>th</sup> SET
- m) Member and Convener of the RDC Committee - Collaboration and Community of the Research and Development Cell (RDC), Kazi Nazrul University
- n) Member of the Visiting Team KNU UG 6<sup>th</sup>, 8<sup>th</sup> and 10<sup>th</sup> Semester Examination on 2<sup>nd</sup> July-2022 to Durgapur Govt College , MMM College , Durgapur Women's College, Durgapur Institute Legal Studies, Law college of Durgapur
- o) Committee member of KNU Centre for WBJEE-2022
- p) Member of the Governing Body of Asansol Girls College, Asansol, West Bengal, since June 2022
- q) Expert member for the Annual Inspection of the Affiliated Colleges for the academic Session 2021-22, 2022-23, 2023-24.
- r) RAC committee member for Different PhD Student of Dept. of Geography, Metallurgy
- s) Convener, BRS for Dept. of Mining Engineering, Kazi Nazrul University, since 2021
- t) Convener, BRS for Dept. of Geology, Kazi Nazrul University, since 2021
- u) Officer-In-Charge of Central Computing Laboratory since 2021.
- v) Member of the Expert Committee to inspect the Kulti College, in connection with approval of affiliation to run Bachelor in Computer Application (BCA) Hons.
- w) Coordinator, Criteria-V, NAAC SSR PREPARATION COMMITTEE, KAZI NAZRUL UNIVERSITY in 1<sup>st</sup> Cycle
- x) Member of Internal Compliance Committee, Kazi Nazrul University since 2020 to 2022.
- y) Member of KNU Natural Environment Maintenance Committee during NAAC Peer Team Visit.

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- z) Member of Academic Events Committee, Kazi Nazrul University since 2020
- aa) Member of Support Teams - KNU Website (Category : Examination) since 2020
- bb) Member of Industry-Institution-Interaction Cell (I-I-I-C), Kazi Nazrul University, Asansol since 2020
- cc) Member of the Advisory Committee of the Centre of Organic Spinotronics and Optoelectronic Device (COSOD), Kazi Nazrul University, Asansol since 2020.
- dd) Member of IQAC, Kazi Nazrul University, Asansol, Since 2020.
- ee) Served as a chief coordinator for digital evaluation for UG 5th Semester Examination'2019.
- ff) Member of Alumni Association Registration Monitoring Committee since 2020.
- gg) Served as 'Chief Coordinator' for the digital evaluation of answer scripts of 4<sup>th</sup> semester examination, 2019 as well as the count of answer scripts of the said examination.
- hh) Served as the Chief Coordinator of the “Answer scripts Evaluation Committee” of the Undergraduate Examinations of Electronics of the University of the 3rd Semester examination of 2017 batch, which will commence on 3rd September 2019 in two places - Durgapur and KNU campus.
- ii) Member of IPR committee , Kazi Nazrul University since 2019
- jj) Paper Setter and Examiner of Dr. Rammanohar Lohia Avadh University, Ayodhya, Uttar Pradesh, (India).
- kk) Examiner (for setting of Question Paper) of Mining and ECE of Assam Science and Technology University, Assam.
- ll) Member of Department Advisory Board (DAB) of Electronics and Telecommunication Engineering Department of M.B.C. Institute of Engineering & Technology, Burdwan since February 2023.
- mm) Paper Setter of Electronics of Vidyasagar University, Midnapore for PG 3rd Sem. Examinations 2022.
- nn) Examiner for B.Tech. CSE Semester-I students (Batch: 2020-24) on Basis Electrical Engineering Laboratory (Code: CSET3106) at Mahatma Gandhi Central University, Motihari, Bihar
- oo) Member of Post-Graduate Board of Studies for the subject of Computer Science at Murshidabad University (State University ), West Bengal
- pp) Member of Post-Graduate Board of Studies for the subject of Dept. of Physics at Murshidabad University (State University ), West Bengal
- qq) Member of Selection Committee for the post of Technical Assistant for The West Bengal National University of Juridical Sciences, Kolkata.
- rr) Examiner of PG 3<sup>rd</sup> Semester Practical Examination of 2018-19 for Bakura University of Department of Physics.
- ss) Expert for “Interview” for the post of Assistant Professor for “CSE” in Asansol Engineering College
- tt) Member of Committee for framing uniform payment structure for Contractual & Guest Faculty, Kazi Nazrul University

#### **AWARDS AND RECOGNITION:**

1. IEI Young Engineering Award: 2019-20
2. BK21PLUS POST DOCTORAL Fellow, Pusan National University, Republic of Korea.
3. DST-JSPS Invitation Research Grant at Research Institute of Electronics, Japan.

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4. DST-ASEAN Invitation fellow at Duy Tan University, Vietnam and Taylors University, Malaysia
5. Visiting Fellow to Department of Electrical and Computer Engineering, National University Singapore.
6. KNU Best Researcher Award (Engineering and Technology): 2021
7. KNU Best Faculty Award (Faculty of Science and Technology): 2022
8. Best Paper Award in MINDS-2022
9. Best Paper Award in ADSC -2022
10. Specially Appointed Associate Professor, Research Institute of Electronics, Shizouka University, Japan.
11. Served as Associate Editor, Cluster Computing, Springer.
12. Received “Transport and Hospitality Grant” from Springer Nature to attain Springer Nature Think Tank Event on 12<sup>th</sup> and 13<sup>th</sup> May 2023 at Hotel Aloft, New Delhi

**FUNDED PROJECT:**

SL NO	Title of the Project	Funding Agency and Role	Amount and Duration	Status
1	Design and Development of Gallium Nitride Based THz Solid State Sources	Science and Engineering Research Board, India <b>PI</b>	15.66 Lakhs & 3 years	Completed
2	Study of Biomedical THz Imaging based on WBG semiconductor IMPATT Source	Centre of Biomedical Engineering, Tokoyo Medical and Dental University in association with RIE, Shizouka University, Japan <b>PI</b>	JPY 840,000 & 4 Years  (This running consecutive four years with satisfactory progress report)	Ongoing
3	Design and fabrication of GaN based THz Solid State Source	International Cooperation (Bilateral), Department of Science and Technology, Govt. of India <b>PI</b>	4,91,000/- & 2 years	Ongoing
4	Environmental Monitoring in Underground Mines using Sensor-	Science and Engineering	8,70,000/- and 2 years	Ongoing

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	enabled Internet of Things	Research Board (SERB), AISTDF <b>PI</b>		
5	Monitoring of Environmental Parameters in Underground Mines using Internet of Things	KNU UGC STRIDE <b>PI</b>	6,10,000/- & 2 years	Completed
6	Assessment of biodegradation behaviors of implant Mg alloys based on machine learning algorithms	CRS Project at UGC-DAE Consortium for Scientific Research <b>Co-PI</b>	1,50,000/- & 3 years	Ongoing

#### Consultancy Project:

SL NO	Title of the Project	Funding Agency	Amount	Status
1	Scientific Study for preparation formulation and Implementation of SCAMP under Reg 123(1) of CMR 2017 for panel permission of R VIII seam for Samkalpa Khani	Eastern Coal Field Limited, Bankola Colliery <b>Co-PI</b>	4,72,000/-	Ongoing

#### PhD Guidance :

SL No	Name of the Students	Title of the Thesis	Institute and Role	Date of Award
1	Dr. S. J. Mandal	Computational Study of Quantum Breathers within Nonlinearity	NIT Durgapur, External Supervisor	9/06/2015
2	Dr. S Chakraborty	Study of Transport Characteristics of Bulk and Nanostructure GaN	NIT Durgapur, External Supervisor	29/03/2016
3	Dr. Prasit Kumar Bandyopadhyay	Studies on Large Signal and Noise Properties of DDR IMPATT Diodes: Effect of Reduced Ionization Rate of Charge Carriers due to carrier-carrier interaction	NIT Durgapur, External Supervisor	21/12/2018
4	Dr. Bijoy Kumar Mandal	Discrete Breathers in Split Ring Resonator based Nonlinear Metamaterial	NIT Durgapur, External Supervisor	15/02/2019

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5	Pradipta Giri	Studies on Dynamics of the Localized Modes of Ferroelectrics Materials with Defects	NIT Durgapur, External Supervisor	17/10/2020
6	Heranmoy Maity	Design of Combinational and Sequential Circuits for Application in Reversible Logic System	NIT Durgapur, External Supervisor	10/10/2021
7	Ms. Manisha Ghosh	Multiple Quantum Well Avalanche Transit Time Source for Terahertz Time-Domain Spectroscopy	Kazi Nazrul University Principal Supervisor	Ongoing
8	Ms. Somrita Ghosh	Multiple Quantum Barrier Nano-Avalanche Photodiodes: Potential Detectors for Wideband Infrared Spectroscopy	Kazi Nazrul University Principal Supervisor	Ongoing
9.	Pulakesh Roy	WIRELESS SENSOR NETWORK BASED ENERGY EFFICIENT TRACKING SYSTEM FOR INDUSTRIAL ENVIRONMENTAL APPLICATION	Kazi Nazrul University Principal Supervisor	Ongoing
10	Sandip Chaurasiya	IoT Assisted Energy-Efficient Data Collection in Intermittently Connected Delay Tolerant Wireless Sensor Networks	MAKAUT, Joint Supervisor	Ongoing
11	SWAPNA HALDER	Multi-objective Network Optimization under Soft Computing Paradigm	Kazi Nazrul University Principal Supervisor	Ongoing

#### BOOK Publications:

##### *Authored:*

[01] Kamakhya Prasad Ghatak, Madhuchhanda Mitra, Arindam Biswas, “Heisenberg’s Uncertainty Principle and the Electron Statistics in Quantized Structures”, ISBN : 978-981-16-9844-6, [<https://doi.org/10.1007/978-981-16-9844-6>], *Springer-Singapore*, 2022.

[02] Kamakhya Prasad Ghatak, Arindam Biswas, “Electron Statistics in Quantum Confined Superlattices”, ISBN: 978-981-126-365-1, [<https://doi.org/10.1142/13064>], *World Scientific-Europe*. [In-Press]

[03] Ankur Dumka, Sandip K. Chaurasiya, Arindam Biswas, Hardwari Lal Mandoria, “A Complete Guide to Wireless Sensor Networks”, ISBN: 9780429286841 [<https://doi.org/10.1201/9780429286841>], *CRC Press*, 2019

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[04] **Arindam Biswas**, Aniruddha Ghosal, “**Theoretical Study of Electron Transport Characteristics in GaN**”, ISBN: 3659338508, *LAP Lambert Academic Publishing*, Republic of Moldova, 2013.

**Edited Book :**

[05] Amitava Choudhury, T. P. Singh, **Arindam Biswas**, Mrinal Anand, “**Evolution of Digitized Societies Through Advanced Technologies**”, ISBN 978-981-19-2983-0, [<https://doi.org/10.1007/978-981-19-2984-7>], *Springer-Singapore*, 2022.

[06] P. K. Paul, Amitava Choudhury, **Arindam Biswas**, Binod Kumar Singh, “**Environmental Informatics: Challenges and Solutions**”, ISBN: 978-981-19-2083-7, [<https://doi.org/10.1007/978-981-19-2083-7>], *Springer-Singapore*, 2022.

[07] Sandip Kumar Chaurasiya, Joydeep Dutta, **Arindam Biswas**, Gorachand Dutta, Mrinal Kanti Sarkar, “**Computational Intelligence for Wireless Sensor Networks**”, ISBN 9780367608880, *CRC Press*, 2022.

[08] Mohammed El Ghzaoui, Sudipta Das, Trupti Ranjan Lenka, **Arindam Biswas**, “**Terahertz Wireless Communication Components and System Technologies**”, ISBN 978-981-16-9181-2, [<https://doi.org/10.1007/978-981-16-9182-9>], *Springer-Singapore*, 2022.

[09] Amitava Choudhury, **Arindam Biswas**, T. P. Singh, Santanu Kumar Ghosh, “**Smart Agriculture Automation Using Advanced Technologies**”, ISBN 978-981-16-6123-5, [<https://doi.org/10.1007/978-981-16-6124-2>], *Springer-Singapore*, 2021.

[10] Sudipta Das, N. Anveshkumar, Joydeep Dutta, **Arindam Biswas**, “**Advances in Terahertz Technology and Its Applications**”, ISBN 978-981-16-5730-6, [<https://doi.org/10.1007/978-981-16-5731-3>], *Springer-Singapore*, 2021.

[11] Aritra Acharyya, **Arindam Biswas**, Palash Das, “**Generation, Detection and Processing of Terahertz Signals**”, ISBN 978-981-16-4946-2, [<https://doi.org/10.1007/978-981-16-4947-9>], *Springer-Singapore*, 2022.

[12] Amitava Choudhury, **Arindam Biswas**, Manish Prateek, Amlan Chakrabarti, “**Agricultural Informatics: Automation Using the IoT and Machine Learning**”, ISBN: 978-1-119-76884-5, *WILEY*, 2021.

[13] **Arindam Biswas**, Amit Banerjee, Aritra Acharyya, Hiroshi Inokawa, “**Emerging Trends in Terahertz Engineering and System Technologies**”, ISBN 978-981-15-9765-7, [<https://doi.org/10.1007/978-981-15-9766-4>], *Springer-Singapore*, 2021.

[14] Gorachand Dutta, **Arindam Biswas**, Amlan Chakrabarti, “**Modern Techniques in Biosensors**”, ISBN 978-981-15-9611-7, [<https://doi.org/10.1007/978-981-15-9612-4>], *Springer-Singapore*, 2021.

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[15] **Arindam Biswas**, Amit Banerjee, Aritra Acharyya, Hiroshi Inokawa, Jintendra Nath Roy, “**Emerging Trends in Terahertz Solid-State Physics and Devices**”, ISBN 978-981-15-3234-4, [https://doi.org/10.1007/978-981-15-3235-1], *Springer-Singapore*, 2021.

[16] Suman Ghosal, Amitava Choudhury, Vikram Kumar Saxena, **Arindam Biswas**, Prasenjit Chatterjee, “**Advances in Data Science and Computing Technology: Methodology and Applications**”, ISBN: 9781774639979, *Apple Academic Press*, 2022.

[17] Aritra Acharyya, **Arindam Biswas**, Hiroshi Inokawa, “**New Horizons in Millimeter-Wave, Infrared and Terahertz Technologies**”, ISBN: 978-981-19-6300-1, (LNEE Series) *Springer-Germany*, 2022.

[18] Gorachand Dutta, **Arindam Biswas**, “**Next Generation Smart Nano-Bio-Devices**”, ISBN- 978-981-19-7106-8, *Springer- Singapore*, 2023.

[19] Kaushik Guha, Gorachand Dutta, **Arindam Biswas**, K S Rao “**MEMS and Microfluidics in Healthcare: Devices and Applications Perspectives**” ISBN-978-981-19-8713-7, (LNEE Series) *Springer-Germany*, 2022.

[20] Amitava Choudhury, **Arindam Biswas**, Sadhan Chakraborti, “**Digital Learning based Education: Transcending Physical Barriers**”, Series ISSN 2191-6853, Springer-Germany, 2022.

[21] Arijit Saha, **Arindam Biswas**, Kankat Ghosh, Nilanjan Mukhopadhyay, “**Optical to Terahertz Engineering**”, ISBN 978-981-99-0227-9, Springer-Germany, 2023.

#### **Conference Proceedings:**

[22] **Arindam Biswas**, Bijoy Kumar Mandal, Conference Proceedings of 1st International Conference on Emerging Trends in Computing, Communication and Control (ICETC3-2017), published in INTERNATIONAL JOURNAL OF ADVANCED ENGINEERING AND MANAGEMENT ISSN: 2456-8066 [https://ijoaem.org/icetc3-2/]

[23] Utpal Biswas, Amit Banerjee, Sukhomay Pal, **Arindam Biswas**, Debashis Sarkar, Sandip Haldar, “**Advances in Computer, Communication and Control- Proceedings of ETES 2018**”, ISBN 978-981-13-3121-3 [https://doi.org/10.1007/978-981-13-3122-0], *Springer- Singapore*, 2019.

[24] Trupti Ranjan Lenka, Durgamadhab Misra, **Arindam Biswas**, “**Micro and Nanoelectronics Devices, Circuits and Systems: Select Proceedings of MNDSCS 2021**”, ISBN 978-981-16-3766-7 [https://doi.org/10.1007/978-981-16-3767-4], *Springer- Singapore*, 2019.

[25] Basabi Chakraborty, **Arindam Biswas**, Amlan Chakrabarti, “**Advances in Data Science and Computing Technologies- Proceedings of ADSC-2022**”, ISBN 978-981-99-3655-7, *Springer-Singapore*, 2023.

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### ***Research Monogram:***

[26] **Arindam Biswas**, Sandip Haldar, Debasish Sarkar, “**Theoretical Study of Electrical Properties of n-type GaN**”, ISBN-13 : 978-6139834945, LAP Lambert Academic Publishing, 2018.

[27] **Arindam Biswas**, Biswapriya Sen, Probir Kumar Bose, “**Design of Crystal Chemistry for High Performance Spinel Ferrite**”, ISBN 13: 978-3-659-90986-3, LAP Lambert Academic Publishing, 2016.

[28] **Arindam Biswas**, Subhra Jyoti Mandal, Vir Ranjan Kumar, “**Processing, Properties & Applications of Ferroelectric Material**”, ISBN-13 978-3659172526 , LAP Lambert Academic Publishing, 2016.

[29] **Arindam Biswas**, Arzoo Rafique, Anup Kumar Bhattacharjee, “**An SOI LDMOS For Better Switch Application**”, ISBN-13 : 978-3659406751, 978-3659172526, LAP Lambert Academic Publishing, 2013.

### **Journal Publications:**

#### **2023:**

[68] Sahnawaj Khan, Aritra Acharyya, Hiroshi Inokawa, Hiroaki Satoh, **Arindam Biswas**, Rudra Sankar Dhar, Amit Banerjee, A. Y. Seteikin, “Terahertz Radiation from High Electron Mobility Avalanche Transit Time Sources Prospective for Biomedical Spectroscopy”, *Photonics*, Vol 10, pp. 800 (2023); <https://doi.org/10.3390/photonics10070800>

[67] Lokesh Sarkar, Saptarshi Saha, Rahul Samanta, Arijit Sinha, **Arindam Biswas**, “Recent Progress in CNT Reinforced Composite and FGM for Multifunctional Space Applications and Future Directions”, *Journal of The Institution of Engineers (India): Series D* (2023), <https://doi.org/10.1007/s40033-023-00465-y> . , *Scopus*.

[66] Swapna Halder, **Arindam Biswas**, Haresh Kumar Sharma, Saibal Majumder, Paulius Skačkauskas, "On enhanced intelligent water drops algorithm for travelling salesman problem under uncertain paradigm" , *Transport and Telecommunication*, Vol 24, pp 228 - 255 (2023)  
DOI: <https://doi.org/10.2478/ttj-2023-0019>

[65] Sandip K Chaurasiya, Santu Mondal, **Arindam Biswas**, Anand Nayyar, Mohd Asif Shah, and Rajib Banerjee, “An Energy-Efficient Hybrid Clustering Technique (EEHCT) for IoT-based Multilevel Heterogeneous Wireless Sensor Networks”, *IEEE Access*, Vol 11, pp. 25941- 25958 (2023). [IF- 3.476]

[64] Sandip K. Chaurasiya, **Arindam Biswas**, Anand Nayyar, Noor Zaman Jhanjhi, Rajib Banerjee, “DEICA: A differential evolution-based improved clustering algorithm for IoT-based heterogeneous wireless sensor networks”, *International Journal of Communication System*, Doi: <https://doi.org/10.1002/dac.5420> [IF- 1.882]

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[63] Rahul Samanta, **Arindam Biswas**, Varsha Mitra, Arijit Sinha, Debdas Roy, Gurudas Mandal, Atul Bandyopadhyay , “An Ancient Traditional Indian Archaeometallurgical Artefact: “Dokra””, Journal of The Institution of Engineers (India): Series D, <https://doi.org/10.1007/s40033-022-00441-y> , *Scopus*.

## 2022

[62] Animesh Ghosh, Bikas Mondal, Santu Mondal, Tanmoy Hazra, **Arindam Biswas**, “Development of Resistive type IoT Based Methane Gas Concentration Transmitter using SnO<sub>2</sub> Material”, Journal of The Institution of Engineers (India): Series D, <https://doi.org/10.1007/s40033-022-00436-9> , *Scopus*.

[61] Haresh Kumar Sharma, Saibal Majumder, **Arindam Biswas** ,Olegas Prentkovskis , Samarjit Kar, Paulius Skačkauskas, “A Study on Decision-Making of the Indian Railways Reservation System during COVID-19”, *Journal of Advanced Transportation* 2022, <https://doi.org/10.1155/2022/7685375> . [IF-2.249]

[60] Saibal Majumder, Partha Sarathi Barma, **Arindam Biswas**, Pradip Banerjee, Bijoy Kumar Mandal, Samarjit Kar, Paweł Ziemia, “On Multi-Objective Minimum Spanning Tree Problem under Uncertain Paradigm”, *Symmetry* 2022, 106. [IF-2.612]

[59] Sandip K. Chaurasiya, **Arindam Biswas**, Prasit Kumar Bandyopadhyay, Amit Banerjee, Rajib Banerjee, “Metaheuristic Load-Balancing-Based Clustering Technique in Wireless Sensor Networks”, *Wireless Communications and Mobile Computing*, 2022 , Article ID 8911651 [IF-2.146]

[58] K. Balamurugan, T. Deepthi, Ananda Kumar Subramanian, Amit Banerjee, Daksh Agarwal, **Arindam Biswas** & Arijit Sinha, “A Study on the Mechanical Properties of Rare Earth-based Aluminium Composite”, *J. Inst. Eng. India Ser. D* (2022). <https://doi.org/10.1007/s40033-022-00373-7> . *Scopus*

[57] Balamurugan Karnan, Arun karthikeyan Kuppusamy, Thamarai Pugazhendhi Latchoumi, Amit Banerjee, Arijit Sinha, **Arindam Biswas**, Ananda Kumar Subramanian, “Multi-response Optimization of Turning Parameters for Cryogenically Treated and Tempered WC–Co Inserts” *Journal of The Institution of Engineers (India): Series D* **103**, 263–274 (2022). *Scopus*

[56] Tanmoy Singha, Lisha Misra, Joydeep Dutta, Rudra Sankar Dhar, **Arindam Biswas**.” A Novel Approach to Stabilize a Dexterous Arm Model for Quadriplegic People Using Evolutionary Algorithm”, *Journal of East China University of Science and Technology* **65** 1006 (2022). *Scopus*

[55] Sanjoy Gorain, Joydeep Dutta, **Arindam Biswas**, Anand Nayyar, Noor Zaman Jhanjhi, “Internet of Things based Environmental Monitoring System in Underground Mines: A Brief Review”, *MGMI Transactions*, 117 38-43 (2022).

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## **2021:**

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[35] **Arindam Biswas**, “**Air & Bandwidth Enhancement of a Microstrip Antenna by Incorporating Air Gap**”, Foundations and Frontiers in Computer, Communication and Electrical Engineering: Proceedings of the 3rd International Conference on Foundations and Frontiers in Computer, Communication and Electrical Engineering, 2016 (C2E2-2016), Tylor and Fransis Group.

## **2015:**

[36] Biswarup Mukherjee, Biplab Roy, **Arindam Biswas**, Aniruddha Ghosal, “**Design of a low power 4 x 4 Multiplier based Five transistor (5-T) half adder , Eight transistor (8-T) and Two transistor AND gate**”, Proceedings of the 2015 Third International Conference on Computer, Communication, Control and Information Technology (C3IT) at Academy of Technology, West Bengal (*IEEE Xplore*).

[37] B Mandal., **Arindam Biswas**, S Samanta , A.K. Bhattacharjee, “**Intrinsic Localized Modes in Metamaterials**. Springer Proceedings in Physics book series (SPPHY, volume 166), Advances in Optical Science and Engineering pp549-556, Proc. International Conference on Optoelectronics and Applied Optics at IEM, Kolkata , 2015.

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## 2014:

[38] Aniruddha Ghosal, Arindam Biswas, “**Study of Transient Response Characteristics of Electrons in GaN by Monte Carlo Method**”, Proc. of 2012 5th International Conference on Computers and Devices for Communication (CODEC) at IRPEL, University of Calcutta (IEEE Xplore).

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[40] Arindam Biswas, A.K Bandhyopadhyay, Susmita Biswas, A.K Bhattacharjee, Durbadal Mandal, “**Classical and quantum breathers: Application in photonics for ferroelectrics**”, Proc. of 2012 International Conference on Communications, Devices and Intelligent Systems (CODIS) at ETEC, Jadavpur University. (IEEE Xplore).

[41] Arindam Biswas, K. Choudhury, A. K. Bandyopadhyay, A. K. Bhattacharjee & D. Mandal, “**Dissipative Intrinsic Localized Modes in Nano-ferroelectrics**”, Giri P., Goswami D., Perumal A. (eds) Advanced Nanomaterials and Nanotechnology. Springer Proceedings in Physics, vol 143. Springer, Berlin, Heidelberg at IIT Gwahati

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## 2011

[43] Arindam Biswas, K. Choudhury, A. K. Bandyopadhyay, A. K. Bhattacharjee & D. Mandal, “**Dissipative Intrinsic Localized Modes in Nano-ferroelectrics**”, Journal: Tech Connect Briefs Volume: 2, Nanotechnology 2011: Electronics, Devices, Fabrication, MEMS, Fluidics and Computational at TechConnect World 2011, Boston (USA).

## Book Chapters:

[01] Manisha Ghosh, Arindam Biswas, “**Material Systems for Realizing Heterojunction IMPATT Sources for Generating Terahertz Waves**” In: Acharyya, A., Das, P. (eds) Advanced Materials for Future Terahertz Devices, Circuits and Systems. Lecture Notes in Electrical Engineering, vol 727. Springer, Singapore (2021). [https://doi.org/10.1007/978-981-33-4489-1\\_15](https://doi.org/10.1007/978-981-33-4489-1_15)

[02] Prajukta Mukherjee, A Acharyya, H Inokawa, Arindam Biswas, “**Noncontact Characterization Techniques of GaN-Based Terahertz Devices**”. In: Acharyya, A., Das, P. (eds) Advanced Materials for Future Terahertz Devices, Circuits and Systems. Lecture Notes in Electrical Engineering, vol 727. Springer, Singapore (2021). [https://doi.org/10.1007/978-981-33-4489-1\\_3](https://doi.org/10.1007/978-981-33-4489-1_3)

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[03] A Acharyya, Arindam Biswas, B Sarkar, A Banerjee, H Inokawa, . , “**Terahertz Radiation from Gallium Phosphide Avalanche Transit Time Sources**”. In: Biswas, A., Banerjee, A., Acharyya, A., Inokawa, H. (eds) Emerging Trends in Terahertz Engineering and System Technologies. Springer, Singapore (2021). [https://doi.org/10.1007/978-981-15-9766-4\\_4](https://doi.org/10.1007/978-981-15-9766-4_4).

[04] Avishek Banerjee, Arnab Mitra, Arindam Biswas, “**An Integrated Application of IoT-Based WSN in the Field of Indian Agriculture System Using Hybrid Optimization Technique and Machine Learning**”, In Agricultural Informatics: Automation Using the IoT and Machine Learning, A. Choudhury, A Biswas, M Prateek, A Chakrabarti (Eds.), in Wiley, 2021.

[05] Roy Sahadev, Mukherjee Kaushal, Arindam Biswas, “**Plane Region Step Farming, Animal and Pest Attack Control Using Internet of Things**”, In Agricultural Informatics: Automation Using the IoT and Machine Learning, A. Choudhury, A Biswas, M Prateek, A Chakrabarti (Eds.), in Wiley, 2021.

[06] Arindam Biswas, S Das, A K Bandhopadhyay, “**Quantum Breathers and Phonon Bound State in the Ferroelectric System**”, In book: Computational and Experimental Chemistry (pp.245-278) Chapter: New Developments in Computational and Experimental Chemistry Publisher: Apple Academic Press, New Jersey, 2014 Editors: T. Chakraborty, M. J. Bucknum, E. A. Castro.

## ***PATENT***

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### ***Domestic:***

Application No.202011024968, INDIA

Date of filing of Application:14/06/2020

Publication Date: 26/06/2020

Title of the invention: COVID PREVENTIVEAUTOMATED ENTRYPOINT(COPAEP)

Inventor Name: Sandip Kumar Chaurasiya, Harsh Verma, Dr. Arindam Biswas

### ***International:***

***German Utility Patent title "Accident and Casualty free Land Mine Detection and Recovery System using AI and Intelligent Circuit". (F 41 H 11/136) : Date of Grant : 28.09.2022***

Inventor Name: Dr. Biswaranjan Acharya, Dr. Arindam Biswas, Om Prakash Das, Manas Ranjan Pradhan, Dr. Madhu Sukla.

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## INVITED LECTURES

SL No	Title of The Lecture/ Academic Session	Title of the Conference/ Seminar	Organizer	Date
1	Intrinsic Localized Modes in Nano-Ferroelectrics	19 <sup>th</sup> Takayanagi Kenjigo Memorial Symposium	Research Institute of Electronics, Shizouka University	21st -22nd November 2017
2	Intrinsic Localized Modes Ferroelectrics	Young Scientist Colloquium of Research ScholarDay-2017	National Institute Technology, Durgapur, West Bengal	25th March 2017
3	THz Solid State Sources: THz GaN IMPATT Oscillators	Recent advances in informatics, communication, management, health & applied sciences (raicmhas-2019)	Brainware University, Barasat, West Bengal	2nd - 4th February, 2019
4	THz Solid State Sources: THz GaN IMPATT Oscillators	One day International Seminar on “Nanotechnology for Device and Photonics Application (NDPA – 2019)”	Mallabhum Institute of Technology campus, Bishnupur, Bankura, West Bengal.	7th Feb. 2019
5	Discrete Breathers in Optics	Seminar on Solid State Device	Modern Institute of Engineering and Technology, Bandel, Hooghly	6th August 2016
7	GaN based THz Solid state device	Emerging Technology & Future of Electronics	New Horizons Institute of Technology, Durgapur	3rd-4th May 2018
8	Intrinsic Localized Mode in Nano ferroelectrics	Dumka Engineering College, Jharkhand	2 days workshop on Spinotronics and Optoelectronics Device	16-01-2019
9	JisTech2K19	JIS College of Engineering	Judge	8-03-2019

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10	2 <sup>nd</sup> International Conference on Communication, Devices & Computing	HIT, Haldia	Session Chair	14 <sup>th</sup> -15 <sup>th</sup> March 2019
12	Nonlinear Optical Communication and THz Semiconductor Sources	Mallabhum Institute of Technology, Bankura	International Seminar on Nanotechnology for Device & Photonics Application (NDPA-2019)	7 <sup>th</sup> Feb. 2019
13	3 <sup>rd</sup> international conference “2019 Devices for Integrated Circuit (DevIC)”	KGEC, Kalyani	Session Chair	24 <sup>th</sup> March 2019
14	One day seminar on " Power Electronics Technology Adopted for Derives and Electrical System Design"	DIATM, Durgapur	Invited Talk and Guest of Honour	30 <sup>th</sup> March 2019
15	One day seminar on “Communication Engineering: Future Challenges”	DIATM, Durgapur	Invited Talk and Guest of Honour	3 <sup>rd</sup> May 2019
16	Celebration of World Telecommunication and Information Society Day	IE (I) Durgapur, Local Centre	Invited Talk and Guest of Honour	17 <sup>th</sup> May 2019
17	5 Days TEQIP Sponsored Workshop on Application of Power Electronics and Control in Power Systems	Dept. of EEE, NIT Manipur	Invited Talk	23 <sup>th</sup> -24 <sup>th</sup> May 2019
18	5 days TEQIP Sponsored STC on Recent Advances in Theoretical and Computational Physics with Hands on Training in Computer Programming	Dept. of Physics, NIT Durgapur	Invited Talk	13 <sup>th</sup> June 2019
19	National Conference on “Device Modeling and Soft Computing	Mallabhum Institute of Technology	Invited Talk	14 <sup>th</sup> September 2019

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	(DMSC 2019)			
20	Advanced Research –Treads and Opportunity	Garden City University,Bangalore	Invited Talk	October 4, 2019
21	Expert Lecture Series	HKBK College of Engineering,Bangalore	Invited Talk	October 5, 2019
22	Short Term Course on Emerging Nano Regime Devices and their Applications	NIT Mizoram.	Invited Talk	17-21 February 2020
23	One Week Faculty Development Programme on “Recent Trends in Electronics and Communication Engineering ”	J. B. Institute of Engineering and Technology, Hyderabad	Invited Talk	26 <sup>th</sup> April to 3 <sup>rd</sup> May 2020
24	Expert Lecture Series, Dept. ofECE	Asansol Engineering College, Asansol	Invited Talk	1 <sup>st</sup> May 2020
25	Expert Lecture Series	Rajendra College of Polytechnic,	Invited Talk	22 <sup>th</sup> May 2020
26	Faculty Development Program 2020	Dr. Sudhir Chandra Sur Degree Engineering College	Invited Talk	11 <sup>th</sup> May 2020 to 15 <sup>th</sup> May 2020
27	Expert Lecture Series (Dept. of ECE/EEE)	Pailan College of Management Technology (Pailan Group of Institutions), Joka Kolkata	Invited Talk	12 <sup>th</sup> June 2020
28	Expert Lecture Series (Dept. ofECE)	Surendra Institute of Engineering & Management, WestBengal	Invited Talk	Nov. 19, 2020
29	Emerging Trends in Computing and Communications	Abacus Institute of Engineering and Management	Invited Talk	3 <sup>rd</sup> April 2021 -4 <sup>th</sup> April 2021
30	INTERNATIONAL CONFERENCE ON EMERGINGTRENDS IN SCIENCE & TECHNOLOGY (ICETST-TECHMEET), 2020	Pailan College of Management & Technology, Kolkata	Invited Talk	21 <sup>st</sup> & 22 <sup>nd</sup> August,2020
31	<b>International Workshop on Advances in Planner Antennas and Communication Technology</b>	Mizoram University	Invited Talk	13 <sup>th</sup> – 17 <sup>th</sup> March 2023

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32	IEEE EDS Mini-Colloquium jointly with the 3rd International Conference on Micro/Nanoelectronics Devices, Circuits, and Systems (MNDCS-2023)	Dept. of ECE, NIT Silchar	Invited Talk	29-31 Jan 2023.
33	5-days long Faculty Development Program online on "Recent Trends in Computer Science & Engineering"	ICFAI University, Tripura	Invited Talk	25th July to 29th July, 2022.
34	IEEE VLSI DCS 2022	MSIT Kolkata	Session Chair	26-27 feb. 2022
35	A seminar on "Computer Application in Mining"	Durgapur Local Centre, IEI	Invited Talk	February 27 (Sunday), 2022
36	2nd International Conference on Micro/Nanoelectronics Devices, Circuits and Systems (MNDCS 2022)	Dept. of ECE, NIT Silchar	Session Chair	29-31 January 2022
37	AICTE Sponsored STTP on Recent Advancement in AI and Machine Learning	Kaziranga University, Assam	Invited Talk	4 <sup>th</sup> to 9 <sup>th</sup> Oct. 2021
38	Student Paper Contest-2021(SPC-2021)	IEEE SSCS Kolkata Chapter	Judge	3 <sup>rd</sup> Oct. 2021
39	AICTE sponsored STTP on " Digital Energy Network: IoT Applications in Smart Grid"	JIS College of Engineering	Invited Talk	16 to 21 June 2021 (Phase-I)
40	Special Summer School on Emerging Trends in Science and Technology	UGC-HRDC, Mizoram University	Invited talk	3 <sup>rd</sup> to 16 <sup>th</sup> August, 2023.

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**Academic Staff College Organized Orientation/ Refresher Courses Attended \_\_\_\_\_**

Name of the Courses	Place	Duration	Sponsoring Authority
VLSI Architectures for Image and Video Processing Systems	IIT Guwahati	19 <sup>th</sup> -23 <sup>rd</sup> September 2011	AICTE
Nanotechnology for Device and Photonics Applications	IIT Kharagpur	3 <sup>rd</sup> -17 <sup>th</sup> October 2012	AICTE

**Training Courses, Teaching-Learning-Evaluation Technology Programmes, Faculty Development Programme \_\_\_\_\_**

Sl. No	Programme/Course	Duration	Organising Authority	Period
1	Optimization Techniques and their Applications in Engineering Problems (OTA-2013)	5 <sup>th</sup> -9 <sup>th</sup> August 2012	TEQIP-II, NIT Durgapur	1 Week
2	FPGA Based Digital System Design	10 <sup>th</sup> -14 <sup>th</sup> August 2015	TEQIP-II, GCETT, Berhampore	1 Week

**Value Aided Course offered \_\_\_\_\_**

Title of the Course	Credit/Duration	Role
"Organic Optoelectronics & Spintronics: Fabrication, Modelling and Experimental Techniques",	48 Hours (3 Months)	Jt. Co-ordinator

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## Organizing Seminar/Conference/Symposia

Sl. No	Whether you are Convenor/Co-convenor	Theme of the Conference/Seminar/Symposia	Funding Authority	Date of the Conference/Seminar/Symposia
1	Convenor	1st International Conference on Emerging Trends in Computing, Communication and Control	NSHM Knowledge Campus, Durgapur	15 <sup>th</sup> -16 <sup>th</sup> March 2017
2	Organising Secretary	1st International Conference on Emerging Trends in Science and Technology-2018	IE(I), India, Asansol Engineering College	23rd-24th March, 2018
3	Co-convenor	Science and Tech Meet 2013	Dumkal Institute of Engg. and Tech.	30 <sup>th</sup> &31 <sup>st</sup> March 2013
4	Faculty-convenor	Autonomous Robotics and Embedded Systems	Collaboration with GeeksLab	1st and 2nd November, 2014
5	Organizing Secretary	1 <sup>st</sup> International Conference on Advances in Data Science and Computing (ADSC-2022)	SERB Sponsored, Publication in Springer LNEE Scopus Indexed Series, Kazi Nazrul University	23th to 24 <sup>th</sup> June 2022.

## MEMBERSHIP OF PROFESSIONAL BODDIES

- Regular Fellow of Optical Society of India, India (**F1599**)
- Member of IE (I), India (**M-162237-9**).

## EDITORIALBOARD MEMBER

- Guest Editor of Nanoscience and Nanotechnology-Asia (Scopus Indexed Journal), Bentham Science Publisher.
- Guest Editor of Recent Patent in Material Science (Scopus Indexed Journal), Bentham

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Science Publisher.

- Guest Editor of International Journal of Computer Network & Communication (Scopus Indexed), AIRCC Publishing Corporation.
- Associate Editor of Cluster Computing (SCIE Indexed Journal), Springer, Publication, IF-2.04 upto 2022
- Editorial Board Member: International Journal of Advanced Engineering and Management (Unpaid Journal)

## ACADEMIC SERVICES

Reviewer of Journal of Circuits, Systems and Computers (World Scientific), International Journal of Science and Technology (ELSEVIER), IETE Journal of Research (Tylor and Fransis), Journal of Optoelectronics and Advanced Material (SCIE), Journal of Communication and Distributed Network (Inderscience), An International Conference published in AISC series, Springer, International Conference on Foundations and Frontiers in Communication, Computer and Electrical Engineering (C2E2) 2013, 2015. IEEE Microcon-2016, IEEE ICCECE-2016, (ICCDC 2017)-Springer, ETES-2018-Springer, ICCDC 2019 (HIT), International Journal of Quantum Information (World Scientific), IEIE Transactions on Smart Processing and Technologies, Microsystem Technologies, IEEE VLSI DCS, OPTRONIX-2020, Engineering and Applied Science Research, Thailand, Microwave Review , IEEE Transactions on Circuits and Systems, Engineering and Applied Science Research , International Journal of Theoretical Physics, Journal of Autonomous Intelligence, Journal of Engineering Science and Technology Review, MDPI Sensors and Electronics

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