Sayan Dey

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Academic qualification: B. Tech (ECE), M. Tech (Nanoscience & Technology), Ph.D. (E&ECE)
Area of research: Spectroscopy, Sensors and electronic nose, Semiconducting nanomaterials
Subjects of interest: Semiconductor devices, Device microfabrication

Academic qualifications

Degree / Certificate	Area/Subject	College/School	Board / University	Year of Passing	% of Marks / CGPA (out of 10)
Ph.D.	Microelectronic sensor devices	Department of E&ECE, Indian Institute of Technology, Kharagpur	Indian Institute of Technology, Kharagpur	2020	**8.53 (coursework)**
M. Tech (Post-Graduation)	Nanoscience & Technology	School of Material Science & Nanotechnology, Jadavpur University, Kolkata	Jadavpur University	2015	**8.94 (84.56%)**
B. Tech (Graduation)	Electronics & Communication Engineering	Department of ECE, Techno India College of Technology, Newtown, Kolkata	West Bengal University of Technology	2011	**8.68**
ISC (12^{th} Standard)	Science	Salt Lake School, Kolkata	Council for the Indian School Certificate Examination	2007	**87.4%**
ICSE (10^{th} Standard)	General	Salt Lake School, Kolkata	Council for the Indian School Certificate Examination	2005	**86.4%**

Professional positions held

1. **Assistant professor (Grade I):** 06.01.2024 – Till date, School of Electrical & Computer Sciences, IIT Bhubaneswar, Odisha
2. **Assistant professor (Grade II):** 28.12.2022 – 05.01.2024, School of Electrical & Computer Sciences, IIT Bhubaneswar, Odisha
2. **Visiting Scientist (Fulbright – Nehru Post-Doctoral Fellow):** 31.10.2021 – 25.12.2022, Dept. of Electrical Engineering, Columbia University in the city of New York, NY, USA
3. **Post-Doctoral Fellow:** 15.02.2021 – 30.10.2021, Dept. of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra
4. **Project Research Scientist:** 01.01.2021 – 13.02.2021, Dept. of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra (Project title: "Development of Gallium-nitride HEMT Based Power Electronic Interface Enabled by Device to System Characterization and Modelling")
5. **Ph.D. research scholar (Institute fellowship, MHRD):** 31.12.2015 – 17.04.2020, Dept. of Electronics & Electrical Communication Engineering, Indian Institute of Technology Kharagpur, Kharagpur 721302, West Bengal. **(**Thesis title: "NiO based sensors for VOC and heavy metal ion detection")
6. **Junior Research Fellow:** 23.07.2015 – 30.12.2015, Dept. of Physics, Indian Institute of Technology, Kharagpur, Kharagpur 721302, West Bengal. (Project: "Smart nanosensors for medical, coal mine and environmental monitoring" funded by SERB, DST, Govt. of India)
7. **Assistant Systems Engineer:** 23.03.2012 – 14.08.2013, Tata Consultancy Services ltd., G3 Oval, Unitech, Newtown, Kolkata 700156. (Project Role: Team member, Operations, Belgacom, Belgium)

Awards and Honours

1. **Fulbright – Nehru Fellowship:** Selected for Nehru-Fulbright Postdoctoral Fellowship 2021, STEM panel (semiconductor device engineering), USIEF (Host institute: Department of Electrical Engineering, Columbia University)

2. **National award for best Ph.D. thesis (Innovative Student Projects award):** Indian National Academy of Engineering (INAE), New Delhi, November 2020 (Thesis title: NiO based sensors for VOC and heavy metal ion detection)
3. **National award for best M. Tech thesis (Innovative Student Projects award):** Indian National Academy of Engineering (INAE), New Delhi, August 2015 (Thesis title: Porous nickel (III) oxide nanostructures: Study of its defects by positron annihilation technique and its environmental and electronic applications)
4. Ranked **2nd in Master of Technology (Nanoscience and technology)**, Jadavpur University, Kolkata, 2015
5. Received **Institute Fellowship for Ph.D.** funded by **Ministry of Human Resource & Development** from IIT Kharagpur, 2015-2020 (GATE qualified: 2013, 2014)
6. **Senior Member, INAE:** Member (student), Indian National Academy of Engineering, December 2020 to December 2025
7. **Member, IEEE:** Member, IEEE, November 2023 to November 2024

Teaching profile

Theory course(s):

Course name	Session	Course credit	Institute
Principles of Device Microfabrication (EELN 4944)	Autumn 2022 – 23	4	Columbia University
Digital Electronics and Microprocessor (EC 2l006)	Spring 2022 – 23	4	IIT Bhubaneswar
Basic Electronics	Autumn 2023 – 24	4	IIT Bhubaneswar
CAD For VLSI Design	Spring 2023 – 24	3	IIT Bhubaneswar
Semiconductor Device Fabrication	Autumn 2024 – 25	3	IIT Bhubaneswar
Semiconductor Packaging and Testing	Autumn 2024 – 25	3	IIT Bhubaneswar
Semiconductor Characterization	Spring 2024 – 25	3	IIT Bhubaneswar
Semiconductor Device Fabrication	Autumn 2025 – 26	3	IIT Bhubaneswar

Lab course(s):

Course name	Session	Course credit	Institute
Digital Electronics and Microprocessor Lab	Spring 2022 – 23	2	IIT Bhubaneswar
Electrical Technology Lab	Spring 2022 – 23	2	IIT Bhubaneswar
Measurement and Electronic Instruments Lab	Autumn 2023 – 24	2	IIT Bhubaneswar
Semiconductor Lab	Autumn 2023 – 24	2	IIT Bhubaneswar
Digital Electronics and Microprocessor Lab	Spring 2023 – 24	2	IIT Bhubaneswar
TCAD, Simulation and Fabrication Lab I	Autumn 2024 – 25	2	IIT Bhubaneswar
TCAD, Simulation and Fabrication Lab II	Autumn 2024 – 25	2	IIT Bhubaneswar
TCAD, Simulation and Fabrication Lab I	Autumn 2025 – 26	2	IIT Bhubaneswar

Sessional:

Course name	Session	Course credit	Institute
Seminar II	Spring 2022 – 23	2	IIT Bhubaneswar
Seminar	Autumn 2023 – 24	2	IIT Bhubaneswar

Teaching Assistant: Technology & Process Modelling Lab, **Devices** Lab, **VLSI Technology** and **Nanoelectronics**, Dept. of Electronics & Electrical Communication Engineering, IIT Kharagpur, 31.12.2015 – 17.04.2020.

Funding details

Sl. No.	Project code	Project Title	Fund amount (in INR)	Funding Agency	Start Date	End Date	Status
1	SP126	Self-powered Microsensors for Non-invasive Diabetes Monitoring	20,00,000	IIT Bhubaneswar	12.10.2023	11.10.2025	Ongoing
2	RP362	Heavy Metal Ion Detector System for Water Quality Monitoring	23,52,200	SERB, GoI	19.12.2023	18.12.2025	Ongoing
3	RP 417	Portable Real-time Sensor Unit for Trace Level Explosive Detection	39,52,000	IRDE,DRDO	01.04.2024	31.03.2027	Ongoing
4	CP 965	Design and Development of Si MOSFETs For EV Application	$100,000	iVP Semiconductor	12.05.2025	31.10.2026	Ongoing

Research Details

1. Presently heading two labs as Professor-in-Charge in IIT Bhubaneswar**: Microfabrication and Characterization Lab** and **Integrated Devices & Electronic Applications (IDEA) Lab**
2. Head/Principal Investigator of the Sensors & Spectroscopy Research Group with the following students

Sl. No.	Degree/Course/Level of study	Ongoing	Graduated/Completed
1	Postdoctoral Fellowship	1	1
2	Ph.D.	3	0
3	M. Tech	2	5
4	B. Tech	2	4
5	Interns	3	8

Publication Details:

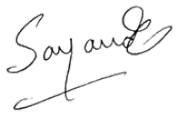
Total citations: 407
h – index: 12
i10 index: 13
Number of Journal Publication(s) (peer – reviewed and SCI/Scopus indexed only): 26
Number of Conference Publication(s): 13
Number of book chapter(s): 1
Number of book(s): 1
Number of patent(s): 2

Founder and Director of **Nano Semic Pvt. Ltd.**, a spin-off startup from the Sensors & Spectroscopy Research Group and IDEA Lab dealing in Sensors (materials, platforms, systems, interfacing electronics) and device fabless and related services (power and sensor devices)

Personal Details

Date of Birth: 28. 01. 1989
Gender: Male
Nationality: Indian
Languages Known: Bengali, Hindi, and English

Place: Bhubaneswar



Date: 29.06.2025

Signature

डॉ. सायन दे/ Dr. Sayan Dey
सहायक प्राध्यापक/ Assistant Professor
विद्युत विज्ञान विद्यापीठ/School of Electrical Sciences
भा.प्रौ.सं. भुवनेश्वर / IIT Bhubaneswar
अनुगुल,जटनी/Anugul, Jatni-752050,ओडिशा/Odisha

List of Publications

Journal(s)

1. Anuvindh. R, S. Mahalik, A. Roy, A. K and **S. Dey***, "Conductance Spectroscopy: A Novel Technique for Ultra-Selective Chemical Detection," in *IEEE Sensors Journal*, vol. 24, no. 24, pp. 40417-40422, Dec 2024, DOI: 10.1109/JSEN.2024.3488531 (**Impact Factor: 4.325**)

2. S. Mahalik, A. K and **S. Dey***, "A 2D-MoS_2 -Based Thin-Film Transistor for Trace-Level SO_2 Monitoring," in *IEEE Transactions on Electron Devices*, Dec 2024, DOI: 10.1109/TED.2024.3492155 (**Impact Factor: 3.221**)

3. A. Pattra, S. Das, M. Kar and **S. Dey***, "Graded junction ZnO on rGO conduction layer for ultra selective Cu(II) ion detection," in *IEEE Sensors Journal*, Dec 2024, DOI: 10.1109/JSEN.2024.3510639 (**Impact Factor: 4.325**)

4. **S. Dey**[*], A. N. Eshore, Z. Chen, C. Zhu, P. K. Guha and I. Kymissis, "Electrochemical Spectroscopy: A Novel Technique for Trace-Level Glucose Detection," in *IEEE Sensors Letters*, vol. 8, no. 10, pp. 1-4, Oct. 2024, Art no. 2001004, DOI: 10.1109/LSENS.2024.3430856 (**Impact Factor: 2.78**)

5. Shreyansh Mishra; Ved Paresh Kowli; Attada Kameswaramma; Himanshu Pramod Padole; **Sayan Dey**; Resistive Sensor Array for Selective Zn(II) Ion Detection From a Mixed Solution Using Machine Learning Techniques, IEEE Sensors Journal, 2024, 24, 9, pp. 1-7, DOI: 10.1109/JSEN.2024.3381604 (**Impact Factor: 4.325**)

6. Navneet Gandhi; Sunil Rathore; Rajeewa Kumar Jaisawal; P. N. Kondekar; **Sayan Dey**; Navjeet Bagga; Unveiling the Self-Heating and Process Variation Reliability of a Junctionless FinFET-Based Hydrogen Gas Sensor, IEEE Sensors Letters, 2023, 7, 9, 1 - 4, DOI: 10.1109/LSENS.2023.3309263 (**Impact Factor: 2.78**)

7. Abhijit Narayan Eshore; **Sayan Dey**; Dipak Kumar Goswami; Prasanta Kumar Guha; "Crystallographic Nanojunctions of Bismuth Ferrite for Unconventional Detection of Carbon Monoxide, ACS Applied Nano Materials, 2023, 6(11), 9397 – 9403, DOI: https://doi.org/10.1021/acsanm.3c01119 (**Impact Factor: 6.14**)

8. **Sayan Dey**[*]; Preetam Guha Ray; Trina Roy; Sumita Santra; Santanu Dhara; Samit Kumar Ray; Prasanta Kumar Guha; "Nano-inspired biocompatible chemosensors: A Progress towards efficient prognosis of arsenic poisoning" ACS Applied Bio Materials, 2022, 5, 3850 – 3858, DOI: https://doi.org/10.1021/acsabm.2c00405 (**Impact Factor: 4.7**)

9. Swati Nag; **Sayan Dey**[#,*]; Debmallya Das; Prasanta Kumar Guha; "Adsorption mediated n – Type ZnO surface reconstruction for enhanced VOC vapour sensing: An experimental and first principle insight" ACS Applied Electronic Materials, 2022, 4, 3825 – 3833, DOI: 10.1021/acsaelm.2c00452 (**Impact Factor: 4.494**)

10. Monikuntala Bhattacharya; **Sayan Dey**[#]; Md Sahanoor Islam; Anirban Roychowdhury; Jiten Ghosh; Chandan Kumar Ghosh; "Trapped exciton enhanced response of n-TiO_2 (110) / p-Si (111) photodetector: adiabatic hole transfer across the interface", ACS Applied Nano Materials, 2022, 5, 2, 2316–2325, DOI: https://doi.org/10.1021/acsanm.1c03993 (**Impact Factor: 6.14**)

11. Monikuntala Bhattacharya; **Sayan Dey**; Chandan Kumar Ghosh; "n-type TiO_2 based re-usable sensor for light assisted Cd(II) ion detection" IEEE Transactions on Electron Devices, 2021, Vol. 68(6), 2951-2956, DOI: 10.1109/TED.2021.3071104 (**Impact Factor: 3.221**)

12. Anurag Kar; **Sayan Dey**[#]; Debasree Burman; Sumita Santra; Prasanta K. Guha; "RGO/Ni_2O_3 heterojunction based re-usable, flexible device for Cr(VI) ion detection in water" IEEE Transactions on Electron Devices, 2021, Vol. 68(2), 780-785, DOI: 10.1109/TED.2020.3045954 (**Impact Factor: 3.221**)

13. **Sayan Dey**; Swati Nag; Sumita Santra; Prasanta Kumar Guha; Samit Kumar Ray; "Voltage controlled NiO/ZnO heterojunction device: A new approach towards selective VOC sensing", Microsystems and Nanoengineering, Nature, 2020, 6(35), https://doi.org/10.1038/s41378-020-0139-1 (**Impact Factor: 8.006**)

14. **Sayan Dey**; Sumita Santra; Prasanta Kumar Guha; Samit Kumar Ray; "$Fe_xNi_{(1-x)}O$/NiO heterojunction based selective VOC sensor device by using temperature tunability", IEEE Sensors Journal, 2019, Vol. 20(14), 7503-7508, DOI: 10.1109/JSEN.2019.2962182 (**Impact Factor: 4.325)**

15. Avik Sett; **Sayan Dey**; Prasanta Kumar Guha; Tarun Kanti Bhattacharya; "ZnO/γ-Fe2O3 heterostructure towards high performance Acetone sensing", IEEE Sensors journal, 2019, Vol. 19(9), 8576-8582, DOI: 10.1109/JSEN.2019.2921421 (**Impact Factor: 4.325**)

16. **Sayan Dey**; Sumita Santra; Prasanta Kumar Guha; Samit Kumar Ray; "Liquid exfoliated NiO nanosheets for trace level detection of acetone vapours", IEEE Transactions on Electron Devices, 2019, Vol. 66(8), 3568-3572, DOI: 10.1109/TED.2019.2922704 (**Impact Factor: 3.221**)

17. **Sayan Dey**; Soumik Podder; A. Roychowdhury; Dipankar Das; Chandan K. Ghosh; "Facile synthesis of hierarchical nickel (III) oxide nanostructure: A synergistic remediating action towards water contaminants", Journal of Environmental Management, 2018, Vol. 211, 356-366, DOI: https://doi.org/10.1016/j.jenvman.2018.01.009 (**Impact Factor: 8.91**)

18. **Sayan Dey**; Sumita Santra; Samit Kumar Ray; Prasanta Kumar Guha; "Coral like $Cu_xNi_{(1-x)}O$ based resistive sensor for humidity and VOC detection", IEEE Sensors Journal, 2018, Vol. 18(15), 6078-6084, DOI: 10.1109/JSEN.2018.2844192 (**Impact Factor: 4.325**)

19. **Sayan Dey**; Sumita Santra; Sabyasachi Sen; Debasree Burman; Samit K Ray; Prasanta K Guha; "Photon assisted ultra-selective Formaldehyde sensing by defect induced NiO based sensing layer", IEEE Sensors Journal, 2018, Vol. 18(14), 5656-5661, DOI: 10.1109/ICSENS.2017.8234446 (**Impact Factor: 4.325**)

20. Inderjeet Singh; **Sayan Dey**; Sumita Santra; Katharina Landfester; Rafael Muñoz-Espí; Amreesh Chandra; "Cerium-doped Copper (II) Oxide Hollow Nanostructures as Efficient and Tunable Sensors for Volatile Organic Compounds", ACS Omega, 2018, Vol. 3(5), 5029-5037, DOI: https://doi.org/10.1021/acsomega.8b00203 (**Impact Factor: 4.132**)

21. Swarupananda Bhattacharjee; Arka Dey; **Sayan Dey**; A Roychowdhury; Partha Ray; Dipankar Das; Gopes Das; Chandan Ghosh; "Electron – phonon interaction to tune metal – semiconductor junction characteristics: ultralow potential barrier and less non-thermionic emission", Physica B: Condensed Matter, 2018, Vol. 547, 101-110, DOI: https://doi.org/10.1016/j.physb.2018.08.011 (**Impact Factor: 2.988**)

22. Shyamasree Gupta Chatterjee; **Sayan Dey**; Dhrubajyoti samanta; Sumita Santra; Somenath Chatterjee; Prashanta K Guha; "Near Room Temperature Sensing of Nitric Oxide Using SnO_2/Ni-decorated Natural Cellulosic Graphene Nanohybrid Film", Journal of Materials Science: Materials in Electronics, 2018, Vol. 29, 20162 – 20171, DOI: https://doi.org/10.1007/s10854-018-0149-z (**Impact Factor: 2.779**)

23. **Sayan Dey**; Sumita Santra; Anupam Midya; Prasanta Kumar Guha; Samit Kumar Ray, "Synthesis of $Cu_xNi_{(1-x)}O$ coral-like nanostructures and their application in the design of a reusable toxic heavy metal ion sensor based on an adsorption-mediated electrochemical technique", Environmental Science: Nano, 2017, Vol. **4**, 191-202, DOI: 10.1039/C6EN00285D (**Impact Factor: 9.473**)

24. R.S. Bose; **S.Dey**; S. Saha; C.K. Ghosh, M. Ghosh Chaudhuri; "Enhanced removal of dissolved aniline from water under combined system of nano zero-valent iron and *Pseudomonas putida",* Sustainable Water Resources Management, 2016, Vol. 2, 143-159, DOI: https://doi.org/10.1007/s40899-016-0045-8 (**Impact Factor: 2.4**)

25. **Sayan Dey**; Swarupananda Bhattacharjee; Raj Shekhar Bose; Chandan Kr. Ghosh "Room temperature synthesis of hydrated nickel (III) oxide and study of its effect on Cr (VI) ions removal and bacterial culture", Applied Physics A: Materials Science & Processing, Spinger, March, 2015, Vol. 119(4), 1343-1354, DOI: https://doi.org/10.1007/s00339-015-9101-8 (**Impact Factor: 2.983**)

26. **S.Dey**; S. Bhattacharjee; M.G. Chaudhuri; R.S. Bose; S. Halder; C.K. Ghosh "Synthesis of pure nickel (III) oxide nanoparticles at room temperature for Cr(VI) ion removal", RSC Advances, 2015, Vol. 5, 54717-54726, DOI: 10.1039/C5RA05810D (**Impact Factor: 4.036**)

Non-referred journals

27. **Dey, S.**, Das, S., Chowdhury, S., Debnath, S., Ghosh, P., Dutta, S. "Circuit design and analysis of wireless cardiac analyzer using the concepts of pulse oximetry", International Journal of Electronic and communication research, 2012, Vol. 3(1), pp-43-50 (**Impact Factor: Not obtained yet**)

28. **Dey, S.**, Datta, S., Ghosh, P., Chowdhury, S., Debnath, S., Das, S. "An effective signal decoding algorithm for wireless MIMO receivers used in mobile communication", Advances in wireless and mobile communications, 2012, Vol. 5(2), 71-78 (**Impact Factor: Not obtained yet**)

29. **Dey, S.**, Ray, R., Datta, S. "Simulation and analysis of low power low cost MIMO-MC CDMA System using FPGA kit", International Journal of Advance in Communication Engineering, 2011, Vol. 5(1), 7-11, ISSN: 0973-6794 (**Impact Factor: No impact factor**)

30. **S. Dey**; S. Dutta; S. Das; "Design, simulation and implementation of a MIMO-MC CDMA based trans-receiver system", Journal of Telecommunication, Volume 9, Issue 2, July, 2011, ISSN 2042-8839 (**Impact Factor: No impact factor**)

31. **S. Dey**; S. Dutta; P. Ghosh; "Generation of an effective pseudo random noise sequence for CDMA transmitters", International Journal of Wireless Communication and Simulation, Vol. –III, 2011 (**Impact Factor: No impact factor**)

Conference(s):

1. **S. Dey**; G. Saha; "Determination and study of a dominant genetic network responsible for the growth of a fungus using the concepts of Bayesian Algorithm", ***International conference on systems in medicine and biology*** (***ICSMB 2010***), IIT, Kharagpur, India; 74-84, IEEE Catalog No.; CFP1017NPRT and IEEE Xplore™ Digital Library.

2. S. Bhattacharjee; S. Sil; **S. Dey**; A. Chakrabarti.; "Simulation, design and analysis of a low power MIMO-OFDM system and its implementation on FPGA", **International Conference of *RETIS***, 2011, Jadavpur University, Kolkata and IEEE Xplore™ Digital library.

3. **S. Dey***; S. Santra; A. Ghorai; A. Midya; P. K. Guha; S. K. Ray; "Synthesis of RGO/NiO hierarchical nanocomposite for enhanced nitric oxide sensing at room temperature", ***IUMRS-ICYRAM 2016***, Bangalore, India.

4. Shaymasree Gupta Chatterjee*; **Sayan Dey**; Dhrubajyoti Samanta; Sumita Santra; Somenath Chatterjee; Prasanta K. Guha; Amit K. Chakraborty; Ajoy K. Ray; "A Facile Solid-state Synthesis of Graphene/ SnO_2 Nanocomposite for NOx Gas Sensing at low temperature", ***IUMRS-ICYRAM 2016***, Bangalore, India.

5. Anurag Kar*; **Sayan Dey**; Sumita Santra; Samit K. Ray; Prasanta K. Guha; "RGO/Ni_2O_3 composites as a multifunctional material for efficient water quality monitoring", ***EMRS Spring Meeting 2017***, Strasbourg, France.

6. **Sayan Dey***; Sumita Santra; Samit K. Ray; Prasanta K. Guha; "Chemically synthesized $Cu_xNi_{(1-x)}O$ hierarchical nanostructures as room temperature humidity sensors", ***EMRS Spring Meeting 2017***, Strasbourg, France.

7. **Sayan Dey***; Sumita Santra; Sabyasachi Sen; Debasree Burman; Samit K. Ray; Prasanta K. Guha; "Photon assisted ultra-selective Formaldehyde sensing by defect induced NiO nanostructured sensing layer", ***IEEE Sensors 2017***, Glasgow, Scotland.

8. **Sayan Dey***; Sumita Santra; Samit K. Say; Prasanta K. Guha; "Faceted p-type NiO for room temperature NO sensing", ***ICONSAT 2018***, Bangalore**,** India.

9. **Sayan Dey**; Sumita Santra; Samit Kumar Ray; Prasanta Kumar Guha*; "Temperature tunable selectivity of NiO/$Fe_xNi_{(1-x)}O$ heterojunction device based VOC sensor", ***IEEE Sensors 2018***, New Delhi, India.

10. Snehanjan Acharyya; **Sayan Dey**; Sudip Nag; Prasanta Guha*; "ZnO cladded MnO_2 based resistive sensor device for formaldehyde sensing", ***IEEE Sensors 2018***, New Delhi, India.

11. S. Gupta Chatterjee; N. Chakrabarty; **S. Dey**; S. Santra; P. K. Guha; A.K. Chakraborty; "Facile synthesis of ZnO nanoflowers for Formaldehyde Sensing", International Conference on Advances in Material Science and Chemistry ICAMSC-2020, 10th -12th August 2020, Kerala, India.

12. Snehanjan Acharyya; **Sayan Dey**; Sudip Nag; Prasanta Kumar Guha; "2-Propanol detection with NiO decorated SnO_2 microspheres for indoor air quality monitoring applications", IWPSD ***2019***, Kolkata, India.

13. Shreyansh Mishra; Sukanya Mahalik; Apabrita Sengupta; Abhijit Eshore; Prasanta K. Guha; **Sayan Dey***; "NiO/Ni_2O_3 based top gated junctionless field effect device for selective Cr(VI) ion detection in water" IEEE EDTM 2024

Patent(s):

1. Prasanta K. Guha; **Sayan Dey**; Sumita Santra; Samit K. Ray; "Doped transition metal oxide based CMOS compatible humidity insensitive nano-sensor for Toluene detection", Indian patent no.: 427581; March, 2023

2. **Sayan Dey**, Abhijit Narayan Eshore, Prasanta Kumar Guha, Ioannis (John) Kymissis, "A semiconductor device based spectroscopic method to identify molecular structure of an analyte", Indian patent no. 553566, December 2023

Book(s) and Book chapter(s):

1.Sunipa Roy; Chandan Kumar Ghosh; **Sayan Dey**; Abhijit Pal; "Solid State Devices and Microelectronics", Bentham Science Publishers, 2023, ISBN: 978-981-5079-88-3

2. **Sayan Dey**, Abhijit Narayan Eshore, Chandan Kumar Ghosh, "Nanostructured Thin Films for gas sensing", Comprehensive Materials Processing, 2E, Elsevier