



Professional Summary

Myself Dr. Sukhendu Sadhukhan. During my research period, I have one patent published and more than ten articles published in reputed high-impact international journals. I developed few lab instruments for research purposes with my knowledge of hardware, electronics, and LabView software. I also have a deep understanding of programming languages like C, Java, JavaScript, etc., and I also developed many web apps and Android apps. I have qualified for the National Eligibility Test (NET) in Physical science twice and GATE in Physics. And have a teaching experience in degree and engineering colleges, including as a private tutor for more than ten years upto graduation students.

Highlights

- Have a Patent Published
- Qualified NET with JRF twice
- Developed Lab Instruments
- Android App and Web App Developer
- Published more than ten papers in prestigious international Journal
- Can operate instruments like XRD, FESEM, VSM, PPMS, P.E. Loop tracer, JV Tracer, Dielectric Measurement etc.

Professional experience

Research Fellow	Teaching
07/2018 – 07/2023 Burdwan, India	1. Guest Lecturer of Physics Honours at Department of Physics, Khalisani Mahavidyalaya 01.06.2023-01.09.2023 2. Assistant Professor of Physics at Dr. Sudhir Chandra Sur Institute of Technology 22.07.2023-Till Now

Education

Secondary: Qualified *Madhyamik* from *Nawpara High School* under *W.B.B.S.E.* in **2009**, with *Distinction (80.50%)* being School Topper.
Higher Secondary: Qualified *H.S. in Science* from *Chandannagar Bangavidyalaya* under *W.B.C.H.S.E.* in **2011**, with *First class (73.40%)*.
Graduation: Qualified *B.Sc. (Honours) in Physics* from *The University of Burdwan* in **2015**, with *First class (60.38%)* being College Topper.
Post-Graduation: Qualified *M.Sc. in Physics* from *The University of Burdwan* in **2017**, with *First class (8.16 CGPA ≈ 76.60%)*.
National Level Examinations: Qualified **UGC-CSIR NET JRF (Twice) [2016 (AIR 163) and 2017 (AIR 63)]**, **GATE** Qualified.
Ph.D.: *Awarded on 04.09.2023* under the supervision of **Prof. Pabitra Kumar Chakrabarti** from *The University of Burdwan* - Burdwan, West Bengal.
Thesis Title: *To study the Magneto-Electric behavior of some nanocrystalline, nanocomposite and bulk Multiferroics prepared by Chemical and Solid-state reaction routes.*

Research Information

Research Interest: Multiferroics (Condensed Matter Physics).

- [❖ Nanomaterials, nanocomposites (Synthesis, Characterization, and Applications) ❖ X-ray crystallography, Structural and microstructural characterizations]
- [❖ Structure-property relationship ❖ Magnetic, Dielectric, Ferroelectric, J-E, and Magnetolectric coupling properties]

Patent: *A field-based kit and method for screening of hemoglobinopathy condition from normal, No.- 202031035590, Published on 25th February 2022 at IP India, Anupam Basu, Sukhendu Sadhukhan, Pabitra Kumar Chakrabarti, Prosanto Chowdhury, Tamoghna Chowdhury, Dipankar Saha, Upasona Bhattacharya, Debashis Pal, Nibedita Mitra.*

Publications:

1. *Multiferroic properties and magnetolectric coupling observed in nanocrystalline HoFeO₃, Sukhendu Sadhukhan, Abhik S. Mahapatra, Ayan Mitra, Pabitra K. Chakrabarti*, Journal of Alloys and Compounds, 2022, 907, 164443, (10.1016/j.jallcom.2022.164443), I.F.- 6.371.*
2. *Magnetolectric multiferroicity in a newly derived nanocomposite system of (Y_{0.97}Al_{0.03}FeO₃)_x(Bi_{0.5}Na_{0.5})_{0.94}Ba_{0.06}TiO₃(1-x) [x= 0.3, 0.5], Sukhendu Sadhukhan, Ayan Mitra, Abhik S. Mahapatra, Chandi Charan Dey, Souvik Das, Pabitra K. Chakrabarti*, Journal of Magnetism and Magnetic Materials, 2022, 559, 169553, (10.1016/j.jmmm.2022.169553), I.F.- 3.097.*
3. *Strong modulation effects on magnetolectric behavior of Co-ferrite nanoparticles incorporated in ZnO medium in nano-regime synthesized in chemical routes, Sukhendu Sadhukhan, Abhik S. Mahapatra, Ayan Mitra, Nupur Bhakta, Souvik Das, Ayan Mallick, Anupam Banerjee, Souvik Chatterjee, J. M. Greneche & Pabitra K. Chakrabarti*, Applied Physics A, 2023, 129, 68, (10.1007/s00339-022-06345-8), I.F.- 2.983.*
4. *Room Temperature Multiferroicity of Hexagonal LuFeO₃ and its Enhancement by Co-Doping in Lu_{0.9}Co_{0.1}Fe_{0.9}Ti_{0.1}O₃ Nanoparticle System, Sukhendu Sadhukhan, Ayan Mitra, Abhik S. Mahapatra, Pabitra K. Chakrabarti*, Journal of Alloys and Compounds, 2023, 956, 170351, (10.1016/j.jallcom.2023.170351), I.F.- 6.371.*
5. *Enhanced multiferroicity of Ho_{0.95}Co_{0.05}Fe_{0.95}Ti_{0.05}O₃ by co-doping in HoFeO₃ nanoparticle system, Sukhendu Sadhukhan, Abhik S. Mahapatra, Ayan Mitra, Pabitra K. Chakrabarti*, Journal of Magnetism and Magnetic Materials, 2023, 579, 170861, (10.1016/j.jmmm.2023.170861), I.F.- 3.097.*
6. *Investigation of magneto-electric properties of La_{0.85}Nd_{0.15}Fe_{0.9}Ti_{0.1}O₃, Nupur Bhakta, Sukhendu Sadhukhan, Chandi Charan Dey, Ayan Mitra, Pabitra K. Chakrabarti*, Journal of Magnetism and Magnetic Materials, 2022, 564, 170208, (10.1016/j.jmmm.2022.170208), I.F.-3.097.*
7. *Magnetic Energy Morphing, Capacitive Concept for Ni_{0.3}Zn_{0.4}Ca_{0.3}Fe₂O₄ Nanoparticles Embedded in Graphene Oxide Matrix, and Studies of Wideband Tunable Microwave Absorption, Chandi Charan Dey, Sukhendu Sadhukhan, Ayan Mitra, Madhumita Dalal, Anirban Shaw, Anna Bajorek, and Pabitra K. Chakrabarti*, ACS Appl. Mater. Interfaces 2021, 13, 39, 46967-46979, (10.1021/acsami.1c10241), I.F.- 10.38.*
8. *Spin reorientation behavior and enhanced multiferroic properties of co-doped YFeO₃ towards a monophasic multiferroic ceramic Co_{0.05}Y_{0.95}Fe_{0.95}Ti_{0.05}O₃, Souvik Das, Ayan Mitra, Sukhendu Sadhukhan, Amitabh Das, Souvik Chatterjee, Pabitra K. Chakrabarti*, Advanced Powder Technology, 2022, 23, 6, 103622, (10.1016/j.appt.2022.103622), I.F.- 4.969.*
9. *Electromagnetic shielding performance of Co_{0.5}Zn_{0.4}Cu_{0.1}Fe₂O₄-GO/paraffin wax hybrid nanocomposite through magnetic energy morphing prepared by facile synthesis method, Chandi Charan Dey, Abhik Sinha Mahapatra, Sukhendu Sadhukhan, Pabitra K Chakrabarti*, Materials Today Communications 2021/6/1, 27, 102190, (10.1016/j.mtcomm.2021.102190), I.F.- 3.662.*
10. *Rietveld analysis, enhanced magnetic, dielectric, and ferroelectric properties of Gd³⁺ and Ti⁴⁺ co-doped LaFeO₃ multiferroic, Nupur Bhakta, Ayan Mitra, Ayan Mallick, Sukhendu Sadhukhan, Anna Bajorek, P. K. Chakrabarti*, Materials Science and Engineering: B 2021/2, 264, 114810, (10.1016/j.mseb.2020.114810), I.F.- 3.407.*
11. *Hopping conduction of localized polarons with scaling behaviour in multiferroic ceramic composite (YCrO₃)_{1-x} - (CoFe_{1.6}Cr_{0.4}O₄)_x, Souvik Das, Sukhendu Sadhukhan, Ayan Mitra, Chandi Charan Dey, P.K. Chakrabarti*, Materials Science and Engineering: B 2023, 297, 116720, (10.1016/j.mseb.2023.116720), I.F.- 3.6.*
12. *Microwave absorption and hyperthermia properties of titanium dioxide - nickel zinc copper ferrite nanocomposite, Ayan Mallick, Chandi Charan Dey, Sukhendu Sadhukhan, Sujay Das, Raghmani Singh Ningthoujam, Jean-Marc Greneche, Pabitra Kumar Chakrabarti*, Journal of Magnetism and Magnetic Materials, 2023, 587, 171373, (10.1016/j.jmmm.2023.171373), I.F.-3.097.*
13. *Observation of magnetodielectric properties along with negative magnetization in Ba and Ni co-doped YCrO₃, Souvik Das, Ayan Mitra, Sukhendu Sadhukhan, P.K. Chakrabarti*, (Under Review).*
14. *Exploring room temperature multiferroicity in sol-gel derived Holmium, Titanium doped YFeO₃ nanoceramics, Souvik Das, Ayan Mitra, Sukhendu Sadhukhan, P.K. Chakrabarti*, (Under Review).*
15. *Synthesis and characterization of Ag-decorated Co ferrite nanoparticles embedded in MWCNT for biomedical application, Ayan Mallick, Madhumita Dalal, Chandi Charan Dey, Sukhendu Sadhukhan, Sujay Das, Raghmani Singh Ningthoujam, Jean-Marc Greneche, Pabitra Kumar Chakrabarti*, (Under Review).*
16. *Study on Structural and Dielectric Behaviour of Li_{0.3}Zn_{0.3}Co_{0.1}Fe_{2.3}O₄, Madhumita Dalal, Sukhendu Sadhukhan, Pabitra Kumar Chakrabarti*, (Under Review).*
17. *Review on synthesis and characterization of TiO₂ nanoparticles: A potent antimicrobial and drug delivery agent, Moupiya Ghosh*, Susomoy Datta, Anindya Roy, Sukhendu Sadhukhan, Uttam Acharya, Samir Mandal (Under Review).*
18. *Burdwan University Thalassemia Severity (BUTS) Scoring System: A numerical Method For Defining the Clinicopathological status of Thalassemia Patient Anupam Basu, Prosanto Chowdhury, Tamoghna Chowdhury, Sukhendu Sadhukhan, Pabitra Kumar Chakrabarti, Dipankar Saha, Debashis Pal (Under Review).*

Workshops and Conferences Attended:

Seminar and Conferences:

- i. Oral Presented on – ‘Study on Structural and Dielectric Behaviour of Li_{0.3}Zn_{0.3}Co_{0.1}Fe_{2.3}O₄’, at the **International** Conference ‘Third **Global** Conference on Recent Advances in Sustainable Materials (GC-RASM 2023)’, held during 27-28 July 2023, organized by the Department of Mechanical Engineering, PGP College of Engineering & Technology, Tamil Nadu, India.
- ii. Oral Presented on – ‘Enhanced magnetic properties of Al-doped YFeO₃’, at the **International** Conference on Crystal Growth and Spectroscopy, held during 29-31 August 2022, organized by the Department of Physics, St. Joseph's College, In collaboration with SSN Research Centre, SSN Institutions, In association with Indian Association for Crystal Growth (IACG) and Indian Spectro Physics Association (ISPA).
- iii. Poster Presentation on - ‘**Magneto-electric properties of cobalt ferrite nanoparticles incorporated in ZnO host**’ National Seminar on Recent Trends in Condensed Matter Physics including Laser Applications (NCMPLA - 2020), held during 13-14 February 2020, organized by the Department of Physics, The University of Burdwan.
- iv. Poster Presentation on - ‘**Synthesis and Characterization of hexagonal LuFeO₃ Ceramics and Study of its Electric and Magnetic Characteristics**’ National Seminar on Recent Trends in Condensed Matter Physics including Laser Applications (NCMPLA - 2019), held during 16-18 January 2019, organized by the Department of Physics, The University of Burdwan.
- v. Poster Presentation on - ‘**Enhanced magnetic, dielectric and ferroelectric properties of La_{0.85}Er_{0.15}FeO₃**’, at Condensed Matter Days (CMDAYS – 2018), a National Conference on Condensed Matter Physics, held during 29-31 August 2018, organized by the Department of Physics, The University of Burdwan.
- vi. Participated at *National Seminar on Recent Trends in Condensed Matter Physics including Laser Applications (NCMPLA - 2017)*, held during 8-9 March 2017, organized by the Department of Physics, The University of Burdwan.
- vii. Participated at *One-Day National Seminar on International Year of Light: Centenary of Einstein's Equation of General Theory of Relativity*, on 31st March 2016, organized by the Department of Physics, The University of Burdwan, Sponsored by the Department of Science and Technology, Government of West Bengal.

Father	: Mr. Nakul Sadhukhan
Mother	: Mrs. Mira Sadhukhan
Date of Birth	: 05 th February 1994
Gender	: Male
Nationality	: Indian
Religion	: Hindu
Marital Status	: Single
Languages Known	: Bengali, English, Hindi

Workshops:

1. Three days workshop on – ‘Workshop on Rietveld Refinement Method’ (**Participant**), on 22-24 September 2022, organized by UGC-DAE Consortium for Scientific Research, Mumbai Center in association with Indore Center.
2. Seven days workshop on – ‘Analytical Technique in Modern Biology (AMTB- 2022)’ (**Trainer**), from 21st to 27th April 2022, organized by the Department of Biotechnology, The University of Burdwan and Sponsored by the Department of Science & Technology and Biotechnology (DSTBT), Government of West Bengal.

Scientific Milestone

Patent: A field-based kit and method for screening of hemoglobinopathy condition from normal, No.- 202031035590, **Published On 25th February 2022.**

Automation of Instruments:

- i. An LCR meter (Hioki 3250) and PID temperature controller (Eurotherm 2404) are connected and interfaced with PC using LabView programming by me, to automatically record, and process the data with live graphical visualization of variations.
- ii. A sourcemeter (Kithley 2600 B) is interfaced with PC using LabView programming by me to record the JE characteristics of a sample in continuous bipolar voltage variation with all customization options.

Awards:

1. *Young Researcher Award 2022* from InSc (Institute of Scholars).
2. Research Fellowship from UGC-CSIR in 2016 and 2017.

Skills and Interests:

1. Skilled in the synthesis of various nanomaterials, and nanocomposites. 2. Device interfacing with PC through GPIB, RS232, etc. using LabView programming.

3. Can learn any instrument in detail very fast using previous experiences

Instruments used:	❖ Bruker XRD, ❖ Zeiss FESEM and EDAX, ❖ QD Versalab VSM, ❖ QD Dynacool PPMS, ❖ Tektronics P.E. Loop Tracer, ❖ Kithley Sourcemeter J.E. Setup, ❖ Hioki LCR Meter High-Temperature Dielectric Setup, ❖ Metis BH Loop Tracer, ❖ Vector Network Analyzer, ❖ TGA-DSC, ❖ Mössbauer Spectroscopy, ❖ Thermoline Furnace;
Computer packages:	❖ Origin, ❖ MAUD, ❖ VESTA, ❖ ImageJ, ❖ LabView, ❖ SciLab, ❖ Android Studio, ❖ Adobe Photoshop, ❖ MS Office.
Programming Known:	❖ C, ❖ JAVA, ❖ JavaScript, ❖ Python, ❖ LabView.
Hobbies:	Android and Web Development, Programming, etc.

Declaration

I hereby declare that the above-mentioned particulars are true to the best of my knowledge, and I bear the responsibility for the correctness of the above-mentioned particulars.

Yours Sincerely,


Sukhendu Sadhukhan

References

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