Dr. Satyanarayan Bhuyan

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Date of Joining at IGIT Sarang: 24th April 2026

OBJECTIVE AND INTEREST: To build foundation for excellence of the institution, create intellectual property, deliver technology to MNCs, publish papers in international reputed journals, get hold of research grants, develop manpower, produce young talents and win award in the bench mark competitions by igniting interests, nurturing enthusiasm & passion through the combination of solid academic knowledge gained in Engineering physics, Materials science, electromagnetism, Instrumentation, Measurement Technology and Electronics Science.

EDUCATION:

- Ph.D.: Division of Microelectronics, Nanyang Technological University (**NTU**), Singapore (2011).
- M. Tech.: Solid State Materials, Indian Institute of Technology Delhi (**IITD**), New Delhi, India (2006).
- M.Sc.: Physics (Solid State Physics), Utkal University, Bhubaneswar, Odisha, India (2004).
- B. Sc.: Physics, Utkal University, Vani Vihar, Bhubaneswar, Odisha, India (2002).

ACADEMIC ACHIEVEMENTS:

- Total Number of Peer Reviewed Publications:**166** [SCI Journals: 101 International Proceedings:65]
- PhD Thesis Supervision as Main Supervisor: 20 [Aawarded:15; Continuing:05]
- M. Tech./M.Sc. Thesis Guidance as Supervisor: 10 [Aawarded:08; Continuing:02]
- B. Tech. Projects Guidance as Supervisor: 08 Groups [Aawarded:06; Continuing:02]
- Reference Research Book: 01
- Patent: 01 Indian Patent (869/KOL/2014A: Published 01 Jul 2017 U/S11A).
- Research Grant Received: SERB, DST, India; Amount: 2.569 Million INR (Principal Investigator).
- Young Scientist Awardee: Year 2017 (Experimental Physics: Orissa Physical Society, Odisha, India)
- Bronze Award for Research Mentor: Singapore Science and Engineering Fair 2011.
- Frequent Reviewer: Int. Journals: IEEE Trans. PE, Sens and Act, APL, PIER, JMSC
- Editorial Board Member: Co-Editor in Chief: International Journal of Electronics Signals and Systems;

PROFESSIONAL EXPERIENCE (TEACHING/RESEARCH):

- **Research Fellow:** Dept. of Electrical & Computer Eng, NUS Singapore (July 2010-Jun 2011).
- **Scientist Grade-I:** Institute for Infocomm Research (i2R), ASTAR, Singapore (July 2011-Jun 2013).

- **Assistant Professor:** ITER, SOA Deemed to be University Bhubaneswar, India (July 2013-Jun 2016)
- **Associate Professor:** ITER, SOA Deemed to be University Bhubaneswar, India (July 2016-Sept 2019)
- **Professor:** ITER, SOA Deemed to be University Bhubaneswar, India (Oct 2019-23rd April 2026)

Selective Research Publications

1 P. P. Mohanty, S. S. Biswal, D. P. Kar and S. Bhuyan, Design and circuit model analysis of load coil embedded resonant inductively coupled wireless power transfer system. Scientific Reports (2026). https://doi.org/10.1038/s41598-026-47866-z

2 P.S. Sahoo, S. Bhuyan, P. Pattanaik and J. Padhi, Processing and development of lanthanum-substituted bismuth–nickel ferrite electronic material for sensing device application. Journal of Material Science: Materials in Electronics 37, 352 (2026). https://doi.org/10.1007/s10854-026-16766-3

3 D. Chauhan, B. Biswal, S. K. Pradhan, A Study on Structural and Electrical Properties of Lead Zinc Niobate-Bismuth Ferrite Solid Solution for Electronic Device Application. Journal of of Materials Engineering and Performance 35, 1998–2010 (2026). https://doi.org/10.1007/s11665-025-11675-8.

4. Arun Kumar Das, Priyanka Mishra, Sushree S. Biswal, Arya Tripathy, Satyanarayan Bhuyan, Processing, characterization and device performance study of niobium based bismuth ferrous oxide electronic material, Inorganic Chemistry Communications, Volume 183, Part 2, 2026, 115842, ISSN 1387-7003, https://doi.org/10.1016/j.inoche.2025.115842.

5 J. C. Padhi, S. Sahoo, & S. Bhuyan, Exploration of Fe(Ni2/3V1/3)O3 ceramic electronic material: investigation of morphological-topological, dielectric and capacitive sensing characteristics. Applied Physics A 131, 923 (2025). https://doi.org/10.1007/s00339-025-09057-x

6 M. Narasimharao, B. Swain, R. Priyadarshi, P. P. Nayak and S. Bhuyan, A Survey of Machine Learning Techniques for Diabetes Prediction: Current Trends and Future Directions. Archives of Computational Methods in Engineering (2025). https://doi.org/10.1007/s11831-025-10450-1

7 P. P. Nayak, B. Swain, R. R. Patro, S. S. Hota, O. P. Das, and S. BHUYAN, “Comprehensive study on the structural and optical properties of bismuth manganese oxide composite ceramic for optoelectronic applications”, J Met Mater Miner, vol. 35, no. 4, p. e2401, Oct. 2025. https://doi.org/10.55713/jmmm.v35i4.2401.

8 P. Mishra, A. K. Das, S. Kalingani, S. N. Das and S. Bhuyan, Synthesis and electrical characterization of BMN-BFO electronic material system. J Mater Sci: Mater Electron 36, 1261 (2025). https://doi.org/10.1007/s10854-025-15349-y

9 D. Chauhan, B. Biswal, S.K. Pradhan, S. Bhuyan, S.N. Das, Dielectric relaxation and electrical conduction mechanism via hopping of polarons in (Pb0.3Bi0.7)(Zn0.1Nb0.2Fe0.7)O3 perovskite

compound: A study based on CBH model, Physica B: Condensed Matter, Volume 696, 2025, 416633, ISSN 0921-4526, https://doi.org/10.1016/j.physb.2024.416633.

10 S. Kalingani, S. N. Das, & S. Bhuyan, Dielectric and Conductive Properties of ZnMoO4-TiO2: Exploring High-Temperature Performance and Application Potential. Braz J Phys 54, 223 (2024). https://doi.org/10.1007/s13538-024-01609-5.

11 S. Kalingani, S. N. Das, S. Bhuyan and L. Sahoo, Design, Synthesis, and Characterization of a Humidity Sensor Application Using Nano-Rod Shaped ZnWO4–TiO2 Porous Composite Electronic Material. Transactions on Electrical and Electronic Materials. 25, 636–652 (2024). https://doi.org/10.1007/s42341-024-00544-1

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13 D.Patnaik, P. P Nayak, S. Bhuyan, S. N. Das, "Structural, microstructural, and electrical behavior of a relaxor (Mg0.5W0.5)(Pb0.5Ni0.5)O3 electronic material", Journal of the Australian Ceramic Society, vol. 59 (5), p.1337-1348 (2023).

14 D. Patnaik, S. N. Das, P. P. Nayak, S. Bhuyan, "Structural, surface morphology, impedance spectroscopy, and electrical properties of (Sr0.5W0.5)(Pb0.5Ni0.5)O3 electronic material", Indian Journal of Physics, vol.1. p. 1-11 (2023).

15 L Sahoo, S Bhuyan, SN DasSynthesis and electrical characterizations of (Sn0.8Ti0.2)O2 electronic materialPhase Transitions 96 (7), 514-527

16 L.Sahoo, S. Bhuyan, S. N. Das, "Structural, morphological, and impedance spectroscopy of Tin oxide-Titania based electronic material", Physica B: Condensed Matter, , vol.654, 414705 (2023).

17 A. Tripathy, S. Bhuyan, S. N. Das, R N.P Choudhary, "Temperature and frequency depended structural, morphological, and electrical topographies of Bi2MnFeO6 double perovskite", Journal of the Korean Ceramic Society, vol. 60 (2), p.373-380 (2023)

18 S. Kalingani, S. N. Das, S. K. Pradhan, S. Bhuyan, R N P Choudhary, "Structural, Morphological, Electrical and Impedance Spectroscopy Investigation of Pb1/2Ba1/2Ni1/2W1/2O3 Electronic Material", Transactions on Electrical and Electronic Materials, vol. 24 (1), p. 31-38 (2023).

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34 Satish K Samal, Sarbasri Halder, Manas Kumar Mallick, R. N. P Choudhary, Satyanarayan Bhuyan, "Frequency and Temperature-dependent Dielectric Features of Multi-component Electronic Material: $(Pb_{0.8}Dy_{0.1}Bi_{0.1})(Fe_{0.2}Ti_{0.8})O_3$," Applied Physics A, vol. 126, p. 377 (2020).

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36 S. K. Pradhan, S. N. Das, S. Bhuyan, S. Sahoo, R.N.P Choudhary, "Temperature and Frequency Dependent Multiferroic Features of Gadolinium Doped BiFeO3-PbTiO3 Electronic System", Transactions on Electrical and Electronic Materials, vol. 21 (2), p. 175-190 (2020).

37 S. S Biswal, D. P. Kar, S. Bhuyan, "Parameter trade-off between electric load, quality factor and coupling coefficient for performance enrichment of wireless power transfer system", Progress In Electromagnetics Research M, vol. 91, p. 49-58 (2020).

38 S. Halder, S. Bhuyan and R. N. P Choudhary, "Structural, Dielectric and Electrical Properties of Bismuth Magnesium Tantalate Electronic System", Journal of Magnesium and Alloys, vol. 7, Issue 4, pp.628-636 (2019).

39 A. Tripathy, S. N. Das, S.Bhuyan, R. N. P. Choudhary, "Structural, Morphological and Electrical Impedance Spectroscopy of Bi_2MnCdO_6 Double Perovskite Electronic Material", Transactions on Electrical and Electronic Materials , vol. 23, no. 3, pp. 280 – 287, 2019.

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43 S. Sahany, S. S. Biswal, D. P. Kar, A. A. Pattnaik, S. Bhuyan, "Receiver coil position selection through magnetic field coupling of a WPT system used for powering multiple electronic devices", Progress In Electromagnetics Research M 85, 165-173 (2019).

44 S. Sahany, S. S. Biswal, D. P. Kar, P. K. Sahoo, S. Bhuyan "Impact of functioning parameters on the wireless power transfer system used for electric vehicle charging", Progress In Electromagnetics Research M, vol. 79, p.187-197 (2019).

45 T. Mahapatra, S. Halder, S. Bhuyan and R. N. P Choudhary, "Dielectric and electrical characterization of lead-free complex electronic ceramic: $(Bi_{1/2}Li_{1/2})(Zn_{1/2}W_{1/2})O_3$," Journal of

Materials Science : Materials in Electronics, vol. 29 (21), p.18742-18750 (2018).

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48 S. Halder, K. Parida, S. N. Das, S. K. Pradhan, S. Bhuyan and R. N. P Choudhary, "Dielectric and Impedance Characteristics of $Bi(Zn_{2/3}V_{1/3})O_3$ Electronic Material", Physics Letters A. (*SCI-Impact factor 2.707*) Vol. 382 (10), pp.716-722 (2018).

49 A. Tripathy, S. N. Das, S.Bhuyan, R. N. P. Choudhary, "Temperature and frequency dependent dielectric and impedance characteristics of double perovskite Bi_2MnCoO_6 Electronic Material", Journal of Mat. Sc.: Materials in Electronics, vol. 29 (6), pp. 4770 – 4776 (2018).

50 D. P. Kar, S. S. Biswal, P. K. Sahoo, P. P. Nayak and S. Bhuyan, "Selection of Maximum Power Transfer Region for Resonant Inductively Coupled Wireless Charging System", AEU-International Journal of Electronics and Communications, vol. 84, pp. 84-92 (2018).

51 Biswaranjan Swain, Durga P Kar, Praveen P Nayak and Satyanarayan Bhuyan "Thermal Energy Based Resonant Inductively Coupled Wireless Energization Method for Implantable Biomedical Sensor", Progress In Electromagnetics Research, vol. 67, pp. 129-136 (2018).

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characteristics of Bi(Zn2/3Nb1/3)O3 electronic material", Journal of Materials Science Materials in Electronics. (SCI-Impact factor 2.779) Vol. 28 (21), pp.15928-15935 (2017).

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69 Yujie Zhou, Junhui Hu, and Satyanarayan Bhuyan, “Manipulation of silver nanowires in a droplet on a low-frequency ultrasonic stage”, IEEE Transactions on Ultrasonics, Ferrolectrics, and Frequency Control, vol. 60 (3), pp. 622-629 (2013).

70 Satyanarayan Bhuyan, K. Sivanand , S. K. Panda, and J. Hu “A natural battery based on lake water and its soil bank”, *ENERGY,* vol. 51, p.395-399, (2013).

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