

Faculty Profile

1. Name: [Tapas Kumar Kundu](#)
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7. Research ID (Google Scholar, ORCID ID, Scopus ID, WOS ID, Vidyan ID, Research Gate):
<https://visvabharati.irins.org/profile/158519>
<https://scholar.google.com/citations?user=P7JbTroAAAAJ&hl=en>
8. Membership of Learned Societies:
9. Homepage (If any):
10. Publication Summary:
 - (a) No. of Research papers - [54](#)
 - (b) No. of Book Chapters - [1](#)
 - (c) No. of Conference papers - [2](#)
 - (d) h-index - [16](#)
 - (e) i-10 index - [25](#)
11. Date of Joining Visva-Bharati Service: [07.12.20024](#)
12. Education:

Degree	Year	University/Institution
Ph. D.	1997	Jadavpur University (/Indian Association for the Cultivation of Science)
M. Sc. / M. Tech.	1991	Burdwan University
B. Sc.	1989	Burdwan University

13. Academic Positions held (in reverse chronological order)

Sl. No.	Positions held	Institution	Period
1	Lecturer	Asutosh College, Kolkata	Sept, 1999 - Jan, 2001
2.	Lecturer	Vidyasagr University	Jan, 2001 - Dec, 2004
3.	Reader	Visva-Bharati University	Dec, 2004 - Dec. 2007
4.	Associate Professor	Visva-Bharati University	Dec, 2007 – Dec, 2010
5.	Professor	Visva-Bharati University	07/12/2010 – till date

14. Areas of Research: [Nanoscience, Nanomaterials, Material Science, Electronics](#)
15. Subject Specialization: [Condensed Matter Physics, Electronic](#)
16. Courses Teach / Taught:

Undergraduate Courses	Digital Electronics, Analog Electronics
Postgraduate Courses	Digital Electronics and microprocessor
Ph.D. Course-work	Experimental Condensed Matter Physics

17. Research Guidance:

- (a) No. of Postdoctoral students (Completed / Ongoing)
- (b) No. of Doctoral students (Completed / Ongoing) : 7
- (c) No. of M.Sc. Dissertations: 18

18. Research Collaboration (National / International):

19. Research Grants/Projects

Sl. No.	Project Title	PI/Co-PI	Funding Agency	Amount (Lakhs)	Completed/Ongoing
1	Indian Participation in the CMS Experiment at CERN- Maintenance Operation and Upgradation	Co-PI	SERC, DST, Government of India	228.50	Ongoing
2	A New Approach for the Development of Nanocrystalline Spinel Ferrites	PI	Nanoscience and Technology Initiative (NSTI), DST, Government of India	11	Completed
3	Synthesis & Characterization of Transition Metal Ion Doped Barium Titanate Nanoparticles	PI	Nano Mission, DST, Government of India	20.66	Completed
4	Metal Nanoparticles Embedded in Oxide Thin Films for Memory Device Applications	PI	UGC, Govt of India, New Delhi.	7.96	Completed

24. List of Scientific Publications:

1. Effect of crystalline phase on the nanoparticles growth in glass-ceramics.
T.K.Kundu and D. Chakravorty, *J. Mat. Res.* **9**, 2480, 1994
2. Nanocomposite films of PZT and metallic nickel by sol-gel route.
T.K.Kundu and D. Chakravorty, *Appl. Phys. Lett.* **66**, 3576, 1995
3. Nanocomposite of PZT glass-ceramics and metallic silver.
T.K.Kundu and D. Chakravorty, *Appl. Phys. Lett.* **67**, 2732, 1995
4. Electrical properties of sol-gel derived films containing composites of glass-ceramics and nanocrystalline silver.
T.K.Kundu and D.Chakravorty, *J. Mat. Res.* **11**, 200, 1996
5. Dielectric behavior of metal-glass-ceramic nanocomposites containing a ferroelectric phase.

T.K.Kundu and D.Chakravorty, *J. Phys. Soc. of Japan.* **65**, 3401, 1996

6. Dielectric behavior of nanocomposite of lead sulphide and ferroelectric glass-ceramics.

T.K.Kundu, M.Mukherjee, D.Chakravorty and L.E.Cross, *J. Appl. Phys.* **83**, 4380, 1998

7. Growth of nano α -Fe₂O₃ in titania matrix by sol gel route.

T.K.Kundu, T.P.Sinha, M.Mukherjee, and D.Chakravorty. *J. Mater. Sci.* **33**, 1759, 1998.

8. Synthesis and characterization of nanocomposite films in titania glass matrices by sol- gel route.

T.K.Kundu and D. Chakravorty, *Appl. Organometallic Chemistry* **13**, 353, 1998.

9. Piezoelectric and pyroelectric behavior of lead zirconate titanate-lead sulphide-glass nanocomposites.

T.K.Kundu , D. Chakravorty and L.E.Cross, *J. Mater. Res.* **14**, 1796, 1999

10. Synthesis and characterization of nonconventional nickel-titania glasses by sol-gel route.

T.K.Kundu and D.Chakravorty, *J. Mater. Res.* **14**, 1069, 1999

11. Nanocrystalline MnFe₂O₄ produced by niobium doping.

T.K.Kundu and D. Chakravorty, *J. Mater. Res.* **14**, 3957, 1999

12. The thickness dependent electrical properties of Pb(Zr,Ti)O₃ thin film capacitors for memory device applications.

T.K.Kundu and J.Y.M.Lee, *J. Elec. Chem Soc.* **147**, 326, 2000

13. Thickness dependence of the time dependent dielectric breakdown characteristics of Pb(Zr,Ti)O₃ thin film capacitors for memory device applications.

T.K.Kundu and J.Y.M.Lee , *Jpn. J. Appl. Phys.* **39**, 3488, 2000

14. Quantum confinement effect in nanocomposites

D.Chakravorty, S.Banarjee and **T.K.Kundu**, *Applied Surface Science* **182**, 251, 2001

15. Electric conduction in composites containing copper core-copper oxide shell nanostructure in silica gel

D.Das, **T.K.Kundu**, M.K.Dey, S.Chakraborty, D.Chakravorty, *Ind. Academy of Science (Chemical Science)*, **115**, 1, 2003

16. Electrical conduction in glass-ceramics containing metal nanodispersoids.

T.K.Kundu , S.Banarjee and D. Chakravorty *Jpn. J. Appl. Phys.* **42**, 1301, 2003

17. Metal ferroelectric nanocomposites as a gas sensor

B.Pal, **T.K.Kundu** and D. Chakravorty *J. Appl. Phys.* **93**, 4201, 2003

18. Conventional Ceramic Route for the Production of Nanocrystalline Ferrites

T.K. Kundu and D. Chakravorty, *Ind. J. of Physics*, **78A**, 53, 2004

19. Synthesis of BaTiO₃ nanoparticles through a novel chemical route with polymer precursor

A.Jana, T.K.Mandal, S.Ram and **T.K.Kundu**, *Ind. J. of Physics*, **78A**, 97, 2004

20. Glass-Ceramic-Metal Nanocomposites containing a ferroelectric phase

A.Dan, **T.K.Kundu**, B.Satpati, P.V.N.Satyam, D.Chakravorty, *Ferroelectrics* **305**, 2004

21. EPR spectrum in localized spins in surface and surface-interface in ZnO semiconductor nanoclusters

S.Ram and **T.K.Kundu**, *J. Nanoscience and Nanotechnology* **4** (No.8), 2004

22. Tetragonal Crystal structure in extended Zr⁴⁺-rich regime in small PbZr_{0.7}Ti_{0.3}O₃ of nanoparticles

T.K.Mandal, S.Ram and **T.K.Kundu**, *Ind. J. of Physics*, **78A**, 233, 2004

23. Dielectric behavior of Fe ion doped BaTiO₃ Nanoparticles

A.Jana, **T.K.Kundu**, and D.Chakravorty, *J. Appl. Phys.*, **97**, 044311, 2005

24. Temperature dependent electrical conduction in PZT thin film capacitors

T.K.Kundu and J.Y.M.Lee , *Ferroelectrics* **328**, 53, 2005

25. Nanocrystalline Nickel Ferrites prepared by doping with Niobium ions

S. Mishra, N. Karak, **T.K. Kundu**, D.Das, N. Maity, and D. Chakravorty, *Materials Letters* **60**, 1111, 2006

26. Preparation of nanocrystalline MnFe₂O₄ by doping with Ti⁴⁺ ions using solid state reaction route

S. Mishra, **T.K. Kundu**, K.C.Barick, D.Bahadur, D.Chakravorty, *J. Mag. Mag. Materials*

307, 222, 2006

27. Microstructure and dielectric characteristics of Ni ion doped BaTiO₃ nanoparticles

A. Jana, **T.K. Kundu**, *Materials Letters* **61**, 1544, 2007

28. Room temperature ferroelectric and ferromagnetic properties of multiferroics xLa_{0.7}Sr_{0.3}MnO₃ - (1-x)ErMnO₃ (weight percent x = 0.1, 0.2) composites

P. Dey, T. K. Nath, **T. K. Kundu** and M. L. Nanda Goswami, *Appl. Phys. Lett.* **90**, 162510, 2007

- 29.** BaTiO₃ nanoparticles of orthorhombic structure following a polymer precursor, Part I :
Nucleation and growth process
A. Jana, S. Ram and **T. K. Kundu**, *Phil. Mag. B* **87**, 5485 2007
- 30.** Nanocrystalline spinel ferrites by solid state reaction route
T.K.Kundu, S. Mishra, *Bull. Mater. Sci.* **31**, 507 2008
- 31.** Synthesis, characterization, and self-controlled orthorhombic to tetragonal polymorphic transformation in BaTiO₃ nanoparticles
S. Ram, A. Jana, and **T. K. Kundu**, *Modern Phys. Lett. B* **21**, 1697, 2007
- 32.** BaTiO₃ nanoparticles of orthorhombic structure following a polymer precursor, Part II:
Thermodynamics analyses of the different phases
A. Jana, S. Ram and **T. K. Kundu**, *Phil. Mag. B* **87**, 5497 2007
- 33.** Doped barium titanate nanoparticles
T.K.Kundu, A. Jana and P. Barick, *Bull. Mater. Sci.* **31**, 501 2008
- 34.** Ferroelectric BaTiO₃ phase of orthorhombic crystal structure contained in nanoparticles
S. Ram, A. Jana, and **T. K. Kundu**, *J. Appl. Phys.* **102**, 054110 2007
- 35.** Light emission from ferroelectric barium titanate nanocrystals
P. Barik, **T.K. Kundu** and S. Ram, *Phil. Mag. Lett.* **89**, 545, 2009
- 36.** Influence of Co - ion doping on tetragonal - orthorhombic polymorphic transformation and dielectric behavior in BaTiO₃ nanoparticles
P. Barik, A. Jana and **T.K. Kundu** *J. Am. Ceram. Soc.*, 94 [7] 2119-2125 (2011)
- 37.** Optical Properties of ZnO Nanoparticles Prepared by Chemical Method Using Poly (VinylAlcohol) (PVA) as Capping Agent

Tapas Kumar Kundu, Nantu Karak , Puspendu Barik , Satyajit Saha, Int. J. of Soft Computing and Engineering, **1**, 19, 2011

38. Effect of Ti^{4+} ions doping on microstructure and dc resistivity of nickel ferrites

T.K. Kundu, S. Mishra, N. Karak and P. Barik *Journal of Physics and Chemistry of Solids* **73**, 579, 2012

39. Surface conductivity of carbon nanotubes in silica Gel

A Dan, **T.K.Kundu** and D. Chakravorty, *International Journal of Nanoelectronics and Materials* **6**, 67, 2013

40. Photoluminescence in Fe^{3+} ion doped barium titanate nanoparticles

P. Barik, **T.K. Kundu**, *Nanosystems: Physics, Chemistry, Mathematics*, **4 (2)**, 1-7, 2013

41. Visible luminescence from triethanolamine-modified zinc oxide nanoparticles

N. Karak, P. Barik and **T.K.Kundu**, *AIP Conf. Proc.* **1536**, 181 (2013)

42. Effect on Co doping on optical Behaviors in ZnO Nanorods

A. Ghosh, N. Karak and **T.K.Kundu**, *AIP Conf. Proc.* **1536**, 177 (2013)

43. Structural and Optical Properties of Alumina Templated Undoped and Co-Doped Zinc Oxide Nanoparticles

Nantu Karak, Pijus Kanti Samanta, and **Tapas Kumar Kundu**, *Journal of Nanoengineering and Nanomanufacturing*, **3**, 1, 2013

44. Green Photoluminescence from Highly Oriented ZnO Thin Film for Photovoltaic Application

Nantu Karak, Pijus Kanti Samanta, **Tapas Kumar Kundu**, *OPTIK*, 124 6227 (2013)

45. Thin Film Application in Advanced Electronic Devices, Fu-Chien Chiu, Tung-Ming Pan,

Tapas Kumar Kundu, and Chun-Hsing Shih, *Advances in Materials Science and Engineering*, **2014** 1, 2014

46. Green and blue emission from ZnO nanorods prepared by using polyvinylpyrrolidone molecules,
N Karak, R Labar, P Barik and **T K Kundu**, *Advanced Science Engineering and Medicine* **7**, 1, 2015 (doi:10.1166/ase.2015.1725)
47. Growth of Co-doped ZnO nanoparticles by porous alumina assisted sol-gel route: Structural optical and magnetic properties
Nantu Karak, Bappaditya Pal, D. Sarkar, **Tapas Kumar Kundu** *Journal of Alloys and Compounds*, **647**, 252, 2015.
48. Barrier Inhomogeneities in n-ZnO/p-Si Heterojunctions Fabricated with ZnO Nanorods
Rini Labar and **Tapas Kumar Kundu**, *Journal of Electronic Materials* (published online 13 March, 2018, <https://doi.org/10.1007/s11664-018-6209-6>)
49. Studies of the Low Voltage Power Supply for a Highly Segmented Fast Detector
M. Rahaman, A. Thakur, M. Maity, S. Roy and **T.K. Kundu**, *Journal of Instrumentation (Jinst)* (published online on 22nd Oct. 2021, <https://doi.org/10.1088/1748-0221/16/10/P10026>)
50. Fabrication and Characterization of Back-to-Back Schottky Diode in Ni/ZnO/Ag Nanojunction
R Labar and **T K Kundu**, *Journal of Electronic Materials*: Vol 51, pages223–231 (2022), Metals & Materials Society, Springer.
51. Nature of transient currents and voltages in the power chain for a Highly Segmented Fast Detector run by Low Voltage Power Supply
M. Rahaman, M. Maity, S. Roy and **T.K. Kundu**, *J. of Instrumentation (Jinst)* Vol-18, 2023
52. DC Conductivity Mechanism in La_{0.7}Sr_{0.3}MnO₃ (LSMO)-ZnO Nanocomposites

Sumon Chatterjee, Rini Labar, Mehbub A K Nooruddin, Subhasish Roy and **Tapas Kumar Kundu**, *J. Appl. Phys* 134, 064301 (2023)

53. Anomalous relaxation behaviour in La_{0.7}Sr_{0.3}MnO₃ (LSMO)-ZnO nanocomposite

Sumon Chatterjee and **Tapas Kumar Kundu**, *Physica Scripta* 100 (2025) 015960

54. Low voltage powering of on-detector electronics for HL-LHC experiments upgrades Vincent Bobillier, Petter Krohg, F. Vasey, Sabyasachi Karmakar, **Tapas Kumar Kundu**, Manas Maity, Subhasish Roy, *Proceedings of Science-058* (<https://pos.sissa.it/313/058/pdf>)

Detector Notes:

1. Power Supply System for Detector and Electronics for PhaseII:
Preliminary Results of Measurement and Simulation
S. Karmakar, **T.K. Kundu**, M. Maity, S. Roy, V. Bobillier, F. Vasey, P. Krohg
Detector Note CMS DN-2018/017 (published on 01 June 2018)

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