School: **Physical Sciences**

Department: Department of Pure and Applied Physics

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Qualifications:

2009 Ph. D. Department of Physics, Indian Institute of Technology Bombay

2002 M.Sc. (Physics) Department of Physics, Indian Institute of Technology Roorkee

2000 B. Sc. (Physics Hons.) University of Burdwan, Burdwan

2001 National Eligibility Test (NET)

2003 Graduate Aptitude Test in Engineering (GATE)

2003 Joint Entrance Screening Test (JEST)

Area of Interest/Specialization:

- Quantum transport properties of three dimensional topological insulators
- Topological Phases in Weyl semimetals (WSM) and Dirac semimetals (DSM)
- Topological Hall Effect
- Crystal growth and low temperature properties of strongly correlated electron systems

Experience:

August 2012 - till date	Assistant Professor, Guru Ghasidas University, Bilaspur,
January 2010 - July 2012	Postdoctoral Fellow, Institute of Materials Science, University of Tsukuba, Tsukuba, Japan
February 2009 - December 2009	Research Associate, Dept. of Condensed Matter Physics & Materials Sciences, Tata Institute of Fundamental Research, Mumbai, India

Awards and Honors: Not applicable

Research Projects:

2014- 2017	DST-SERB Fast Track Research Project: ñSynthesis of topological insulators and Investigation of their topological properties by transport, magnetization, Hall Measurementsò (22.56 lakh)
2018-2021	IUAC, New Delhi, ñWeak antilocalization and quantum oscillations in topological insulator using ion irradiationò (6 lakh)
2018-2022	UGC DAE CSR, Indore, ñTopological insulator based energy efficient and thermoelectric power generation materialsò (1.5 lakh)
2022-2025	UGC DAE CSR, Indore, Investigation of topological Phases in Weyl semimetals (WSM) and Dirac semimetals (DSM) (6.5 lakh)

International Collaboration/Consultancy: Not applicable

Best Peer Reviewed Publication (up-to 10):

1. Comparative fermiology study of PbBi2Te4 and SnBi2Te4 3D topological insulators, Priyanath Mal, Bipul Das, G. Bera, G. R. Turpu, C. V. Tomy, and **Pradip Das**, **J Mater Sci: Mater Electron 33**, 8473 (2022)
2. Observation of 2D Transport in Sn-and In-doped $Bi_{2-x}Sb_xTe_{3-y}Se_y$ topological insulator, Priyanath Mal, Bipul Das, G. Bera, P. Rambabu, G. R. Turpu, C. V. Tomy, and **Pradip Das**, **J. Appl. Phys. 129,** 095702 (2021).
3. Transport evidence of linear Dirac dispersion of non-trivial surface states in Fe-substituted $PbBi_2Te_4$ 3D topological insulator, Priyanath Mal, Bipul Das, Archana Lakhani , G. Bera , G.R. Turpu, C.V. Tomy, **Pradip Das**, **Physica E: Low-dimensional Systems and Nanostructures 130,** 114672 (2021).
4. Spin splitted topological surface states in $PbBi_4Te_7$, Priyanath Mal, Bipul Das, G Bera, P Rambabu, G R Turpu, C V Tomy and **Pradip Das**, **J. Phys. D: Appl. Phys**. **53** 484003 (2020)
5. Unusual Conductance Fluctuations and Quantum Oscillation in Mesoscopic Topological Insulator PbBi 4 Te 7, P.Mal, B.Das, A.Lakhani, G.Bera, G.R.Turpu,J.C.Wu, C.V.Tomy, **Pradip Das, Scientific Reports**, **9 7018** (**2019**) IF **4.011**
6. Vibrational Spectra of $Pb_2Bi_2Te_3$, $PbBi_2Te_4$ and $PbBi_4Te_7$ Topological Insulators: Temperature Dependent Raman and Theoretical Insight from DFT Simulations, Priyanath Mal, G. Bera, G. R.Turpu, S. K. Srivastava, A. Gangan, B. Chakraborty, Bipul Das and **Pradip Das**, **Phy. Chem. Chem. Phy**. **21,** 15030-15039 (2019) IF **3.567**
7. Electronic, magnetic and spectroscopic properties of doped $Mn_{(1\bar{1}\ x)}A_xWO_4$(A = Co, Cu, Ni and Fe) multiferroic: an experimental and DFT study, P. Mal, G Bera, P Rambabu, G R Turpu, B.Chakraborty, L. M Ramaniah, R P Singh, P. Sen, **P. Das Journal of Physics: Cond. Matter 29** 075901 (2017) IF **2.711**
8. Magnetization hysteresis and time decay measurements in $FeSe_{0.50}Te_{0.50}$: Evidence for fluctuation in mean free path induced, **P. Das,** Ajay. D. Thakur, Anil K. Yadav, C. V. Tomy, M.R. Lees, G. Balakrishnan, S. Ramakrishnan, A. K. Grover, **Phys. Rev. B 84** 214526 (2011) IF **3.736**
9. Spin-triplet vortex state in the topological superconductor $Cu_xBi_2Se_3$, **Pradip Das,** Yusuke Suzuki, Masashi Tachiki, and Kazuo Kadowaki, **Phys. Rev. B. Rapid Communication**, **83** 220513(R) (2011) **3.736** (**Cited in Physics spotlight exceptional research by American Physical Society** (http://physics.aps.org/synopsis-for/10.1103/PhysRevB.83.220513))
10. Peak effect phenomena, surface superconductivity and positive field cooled magnetization in a spherical single crystal of niobium, **Pradip Das**, C.V. Tomy, S.S. Banerjee, H. Takeya, S. Ramakrishnan and A.K.Grover**, Phys. Rev. B. 78** 214504 (2008) IF **3.736** Appeared as **focus new item in Nature India section of Nature Magazine** http://www.nature.com/nindia/2008/081228/full/nindia.2008.342.html

Recent Books/Book Chapters/Monographs etc. Not Applicable

Research Supervision:

Name of Scholar: Mr. Priyanath Mal, Date of Award of Ph. D.: 31st August 2021. Topic: "Structural and Electronic Transport Properties of 3D Topological Insulators".
Working as Postdoctoral Fellow at Gwangju Institute of Science and Technology, South Korea

Administrative Responsibilities:

Cultural coordinator Physical Sciences for 5 years
Assistant Centre superintend for End semester examination.

Additional Information