

CURRICULUM VITAE

- Name** : Dr. Pratap Kumar Swain
- Address for Correspondence** : Assistant Professor
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Mobile No: (+91) 9436828864.
- Personal Profile** : Nationality: Indian
Date of Birth: June 6, 1983 Sex: Male
Marital Status: Married
- Thesis Topic of PhD** : Semiclassical Strings and D-branes in Diverse String Backgrounds.
- Thesis Supervisor** : Dr. Kamal Lochan Panigrahi

Teaching Experience:

- Classical Mechanics, Statistical Mechanics, Quantum Mechanics-I, Quantum Mechanics-II, Particle Physics, Atomic and Molecular Physics, Atmospheric Physics for M. Sc students at NIT Arunachal Pradesh from July 2015 to present.
- B. Tech 1st year Engineering Physics – I, and Engineering Physics-II (both theory and Practical) at NIT Arunachal Pradesh from 18th October 2013 to present.
- B.Tech. 1st year Physics-I Tutorial (T) at Dept. of Physics & Meteorology, IIT Kharagpur, 1 semester (2 terms) from 2010 to 2012.
- B.Tech. 1st year Physics-I Lab(P) at Dept. of Physics & Meteorology, IIT Kharagpur, 1 semester (3 terms) from 2010 to 2012.
- M. Sc. Physics Optics Lab (P) at Dept. of Physics & Meteorology, IIT Kharagpur, 1 semester (1 term) from 2010 to 2012.
- M. Sc. Physics Nuclear Lab(P) at Dept. of Physics & Meteorology, IIT Kharagpur, 1 semester (1 term) from 2010 to 2012.

No. Ph. D Students (ongoing): 3

- Hage Doley
- Anju Maga
- Soniya Boro

Master Thesis Guided by me

Sl. No	Name	Thesis Title	Year	Affiliation
1	Amit Sharma	Supersymmetry, Dark matter and AdS/CFT Duality	2020	NIT Arunachal Pradesh
2	Vikrant Kumar Verma	How well our universe is described by FLRW model	2019	NIT Arunachal Pradesh
3	Jadv Surbhiben Vallvbhai	Review of Thermal Stability of Black holes solutions in F^{\otimes} gravity	2019	NIT Arunachal Pradesh
4	Nilanjan Nandi	Theoretical study of the emission of gravitational wave from binary pulsar	2019	NIT Arunachal Pradesh
5	Ajit Kumar Dash	Development of code for the calculation of reflection coefficients of ICRF waves at plasma	2019	NIT Arunachal Pradesh
6	Pritesh Khatri	Four Spin Spiky solutions in Beta deformed Background	2018	NIT Arunachal Pradesh
7	Shobham Jha	Linear Perturbation Solutions of Einstein Equation	2018	NIT Arunachal Pradesh
8	Soniya Boro	Solution of Einstein Field Equation in Various Space-time Background	2018	NIT Arunachal Pradesh
9	Ravisankar Varma K	Loop quantum Gravity and its Applications	2018	NIT Arunachal Pradesh

Thesis Review by Me:

- Examine PhD thesis entitled “Density dependence of the symmetry energy and the equation of state of isospin asymmetric nuclear matter with phenomenological effective interaction” of NIT Durgapur.

Project Details:

Sl.No.	Project Title	Investigators	Funding Agency	Total Budgets
1	CNT to enhance the performance of gas sensor	PI: S. Maity (ECE) Co-PI: DR. P. Chakraborty (Physics) Co-PI: Dr. P. K. Swain (Physics)	NIT Arunachal Pradesh	5,00,000.00
2	Gauge-Gravity Duality in Diverse String Backgrounds	PI: Dr. P. K. Swain	TEQIP-III (Seed Grant)	2,00,000.00

Academic Records:

Degree	Institute/Board	Year of passing
PhD	IIT Kharagpur, India	2013
M.Tech (Advanced Materials Science & Technology)	NIT Durgapur, Durgapur, India	2009
M.Sc (Physics)	Ravenshaw (autonomous) College / Utkal University	2006
B.Sc	Kendrapara College / Utkal University	2004

Honours, Scholarships and Extra Curricular Achievements:

- Best Teacher Award of NIT Arunachal Pradesh for the year 2014-15.
- Qualified GATE 2007 Examination with All India Rank 541.
- Qualified Joint CSIR-UGC JRF Examination with UGC JRF Rank.
- Best Graduate Topper of 2004 batch of Kendrapara College.
- Merit-Cum Scholarships +2 to M.Sc.

Workshops/Conferences/Seminar/School Organized:

- One day research seminar on “Application of basic Science in Engineering and Technology” on 7th November, 2015.

Workshop/Conference/School Attended

- Training Program on “General Rules and regulation related to GFR, Procurement Procedures, Accounts and Audit” organized by TEQIP Cell of NIT Arunachal Pradesh in collaboration with Office of the Account General, Arunachal Pradesh during 16th- 20th March, 2020.
- Faculty Development Program on Advanced Pedagogy, IPR, Sponsored Research and Entrepreneurship organized by Academic Cell of NIT Arunachal Pradesh during

16-20 September, 2019.

- UGC sponsored “Research Integrity Awareness Workshop” for east zone on 26th August, 2019 at Tezpur Central University.
- Professional Development Training during 18th -22nd June, 2019 at IIM Kozhikode.
- Short Term Course on “Fundamentals and Recent Advances in Nanomaterials (FRAN-2019)” during 21-25 January, 2019 at NIT Durgapur.
- FDP on “Summer Training Program on Active Learning from 26th June-30th June, 2018 at IIT Kharagpur.
- Short term Course on Advanced Materials & Nano-technology, June 20-24, 2016 at NIT Durgapur.
- One day Workshop on Virtual Laboratory organized jointly by NIT Arunachal Pradesh and IIT Guwahati on 2nd April, 2016 at NIT Arunachal Pradesh.
- Teachers’ Training and Research programme on title “Pedagogical aspects of Laboratory Experiments and Students Project” organized by NIT Arunachal Pradesh from 28th September, 2015 to 3rd October, 2015 at NIT Arunachal Pradesh.
- Advances in Semiconductors, Communication, Electronics and Nanotechnology, May 26 – 30, 2014 at NIT Arunachal Pradesh, India.
- National Strings Meeting 2013 organized by Dept. Physics, IIT Kharagpur from 22nd December, 2013 to 27th December, 2013 at IIT Kharagpur, India.
- Indian Strings Meeting 2012 organized by HRI, Allahbad from 16th December, 2012 to 21st December, 2012 at Puri, Odisha, India.
- Spring School on Superstring Theory and Related Topics, 2012 organized by ICTP from 19th March, 2012 to 27th March, 2012 at ICTP, Trieste, Italy.
- National Strings Meeting 2011 organized by Department of Physics & Astrophysics from 7th December, 2011 to 12th December, 2011 at Delhi University, New Delhi, India.
- International Conference on Theoretical and Applied Physics (ICTAP-2011), 2011 at Department of Physics & Meteorology, IIT Kharagpur, Kharagpur, India.
- International Conference on “New Trends in Field Theories” organized by Dept. of Physics, BHU from 7th February, 2011 to 12th February, 2011 BHU, Varanasi, U.P, India.
- Indian Strings Meeting 2011 organized by IOP, Bhubaneswar from 4th January, 2011 to 11th January, 2011 at Puri, Odisha, India.
- Advanced String School 2010 organized by IOP, Bhubaneswar from 4th October, 2010 to 10th October, 2010 at Puri, Odisha, India.
- National Strings Meeting 2010 organized by Department of Physics, IIT Bombay from 10th February, 2010 to 15th February, 2010 at IIT Bombay, Mumbai, India.
- Preparatory SERC School 2009 in Theoretical High Energy Physics organized by Dept. of Physics, IIT Madras from 4th October, 2009 to 30th October, 2010 at IIT

Madras, Chennai, India.

- National Workshop on “Quest for Advanced Materials,” at Department of Physics, NIT Durgapur, West Bengal on February 26, 2008.
- National Workshop on “Relevance of Physics Education in Present Technological Scenario,” at Department of Physics, NIT Durgapur, West Bengal on January 18-19, 2008.

Seminars and Talks:

1. Deliver a webinar talk on “String Theory and Conceptual Aspects of Gauge-Gravity Duality” in the Three days National Lecture Series on ‘Advancement and Innovations in Modern Physics’ organized by the Physics Department of Jawaharlal Nehru College, Pasighat, Arunachal Pradesh on 8th August, 2020.
2. Deliver a talk in FDP program on ‘Science and Technology’ organized by Basic & Applied Science Department at NIT Arunachal Pradesh on 22nd November, 2019.
3. Deliver a talk on “String Theory and Gauge Gravity Duality” on a research seminar topic *Recent Trends in Physics at Physics Department of DNG College* held on 31st October, 2018.
4. Deliver a talk on “Gravitational waves: A new Astronomical Tools” in a UGC Sponsored seminar on the theme topic “*Applications of Physics in Everyday Life*” *Organized by the Department of Physics DNG College* held on 2nd September, 2017.
5. Deliver talk on ‘Intersecting D-brane’ in Research Summit Seminar at NIT Arunachal Pradesh on 3rd June, 2016.
6. Deliver a talk on “Application of AdS/CFT correspondence” on a research seminar topic *Application of Basic Science in Engineering and Technology* held on 7th November, 2015.
7. Deliver a seminar on “String Theory- A Theory of Every Thing?” on Research Summit at NIT Arunachal Pradesh, India in April, 2015.
8. Oral presentation on “Motivation for PhD students” on 27th January, 2015 at NIT Arunachal Pradesh.
9. Deliver a seminar on “Multispins Spiky Strings in Lunin-Maldacena Background,” at Theory Division, Saha Institute of Nuclear Physics, Kolkata, India in April, 2013.
10. Deliver a Journal Club seminar on “Semiclassical Strings in Beta-deformation Backgrounds” at Dept. of Physics & Meteorology, IIT Kharagpur, Kharagpur, India in July, 2012.
11. Deliver a poster presentation on “D-branes in PP-wave Backgrounds of I-brane” on Research Scholar Day at Dept. of Physics & Meteorology, IIT Kharagpur, Kharagpur, India in March, 2012.

12. Deliver a seminar on “D-branes in a Linear Dilaton PP-wave Background” on Research Scholar Day at Dept. of Physics & Meteorology, IIT Kharagpur, Kharagpur, India in December, 2010.

List of Scientific Publications:

1. H. Doley, A Panigrahi and P. K. Swain, "Modulating the magnetic properties of BiFeO_3 by addition of $\text{Ba}_5\text{TbTi}_3\text{V}_7\text{O}_{30}$ ", International Journal: Processing and Application of Ceramics (Accepted).
2. H. Doley, A Panigrahi and P. K. Swain, "Structural and Ferroelectric properties in the solid solution $(\text{Ba}_5\text{TbTi}_3\text{V}_7\text{O}_{30})_x(\text{BiFeO}_3)_{1-x}$ ", Ferroelectrics, Vol. 569, 2020. (Accepted).
3. H. Doley, P. K. Swain, A. Panigrahi and G. T. Tado, “Study of Structural and Ferroelectric Properties of the Composite Structural and Ferroelectric properties in the solid solution $\text{Ba}_5\text{RTi}_3\text{V}_7\text{O}_{30}$ (R = Pr, Tb), Bulletin of Pure and Applied Sciences section D – Physics, **Vol. 38D**, Number 2, pp, 65-72, 2019.
4. S. Maity, V. Kartik, P. P. Sahu, P. K. Swain and C. T. Bhunia, “ Unavoidable Front Contact Model of Si Solar Cell Through General and Effective Medium Approximation Approach,”43, 31 (2018).
<https://doi.org/10.1007/s12046-018-0799-9>
5. D. K. Das, **P. K. Swain** and S. Sahoo, “Graphene in Turbine Blades,” Mod. Phys. Lett. B, Vol. **30**, No. 20, 1650262 (2016).
<https://doi.org/10.1142/S0217984916502626>
6. **Pratap K. Swain**, K. L. Panigrahi and S. Maity, “Super symmetry D-brane solutions in Godel Universe,”IJCST, **2**, 319 (2014).
7. S. Maity and **Pratap K. Swain**, “On steady flow of thin liquid film over a porous stretching sheet in presence of transverse magnetic field,” IJCST, **2**, 335 (2014).
8. ~~K. L. Panigrahi, P. M. Pradhan and Pratap K. Swain~~, “Three Spin Spiky Strings in beta- deformed Background,” JHEP **1206**, 057 (2012) arXiv:1203.3057 [hep-th]. [https://doi.org/10.1007/JHEP06\(2012\)057](https://doi.org/10.1007/JHEP06(2012)057)

9. K. L. Panigrahi, P. M. Pradhan and **Pratap K. Swain**, “Rotating Strings in AdS $4 \times CP^3$ with B-Field Holonomy,” JHEP **1201**, 113 (2012) arXiv:1109.2458 [hep-th].
[https://doi.org/10.1007/JHEP01\(2012\)113](https://doi.org/10.1007/JHEP01(2012)113)
10. R. R. Nayak and **Pratap K. Swain**, “Note on I-brane Near Horizon PP-wave Background,” Nucl. Phys. B **848**, 490 (2011) [arXiv:1012.2772 [hep-th]].
<https://doi.org/10.1016/j.nuclphysb.2011.03.006>
11. R. R. Nayak and **Pratap K. Swain**, “Fundamental String (Membrane) Orbiting D5 (M5)-branes,” Int. J. Mod. Phys. A **26**, 3065 (2011)[arXiv:1011.1216 [hep-th]].
<https://doi.org/10.1142/S0217751X11053729>
12. **Pratap K. Swain**, “D3-branes at angle in a linear dilaton pp-wave background,” Mod. Phys. Lett. A **25**, 3219 (2010) [arXiv:1006.3189 [hep-th]].
<https://doi.org/10.1142/S0217732310034250>.
13. S. Sahoo and **Pratap K. Swain**, “Supersymmetric Z-prime Models,” Orissa Journal of Physics, **16**, 7, 2009.