
Curriculum Vitae

Ananya Das

Department of Physics, Parvatibai Chowgule College of Arts and Science (Autonomous),
Margao, Goa - 403 602, India.

Professional

Parvatibai Chowgule College of Arts and Science (Autonomous), Goa, India.

Associate Professor (2012 – Present)

Sr. Grade Lecturer (2009 – 2012)

Sr. Lecturer (2004 – 09)

Lecturer (2000 – 2004)

Joined the organization: 1997

Post-Doctoral Experience:

1. CSIR Research Associateship: Ref. No. 9/409(20)/96-EMR-I (1996 Jan.-1998 Jan.)
~Institute of Physics, Bhubaneswar, Odisha. (January 1996 – November 1996)
~Department of Physics, Goa University, Goa. (November 1996 – June 1997)
2. Visiting Fellowship: Post-Doctoral Fellowship
~Variable Energy Cyclotron Centre, Kolkata. (September 1993 – August 1994)

Education:

Ph.D in Physics, 1994

~ Specialization: Theoretical Nuclear Physics

~ Thesis: **Study of Nuclear Dynamics through Multifragmentation process**

~ Recipient: **D. A. E. Research Scholarship (1987- 1993)**

~ Thesis work was carried out at Institute of Physics, Bhubaneswar, Odisha, India, an autonomous national institute funded by Department of Atomic Energy, Govt. of India; under guidance of Prof. L. Satpathy.

~ Submitted on August 1993 to Utkal University for the thesis evaluation and awarding degree.

~ <https://shodhganga.inflibnet.ac.in/handle/10603/119006>

Post B. Sc. Diploma in Computer Science & Application, 1988

Utkal University, Odisha, India.

Diploma in Advance Physics(Equivalent to M. Phil degree of Utkal University), 1987

Institute of Physics, Bhubaneswar, Orissa, India – 751 005

~Recipient: **D. A. E Research Scholarship (1986-87)**

Masters in Physics, 1985

Utkal University, Odisha, India.

~ Recipient: **National Merit Scholarship (1983-1985)**

Bachelor of Science, Physics, 1983

Utkal University, Odisha, India.

Academic Qualification

Examination	College/ Institute	University/ Board	Year Of Passing	Subjects	Roll No	% of mark obtained	Class/ Grade	Fellowship /Rank, If any
HSC	Capital GHS Unit 2 Bhubaneswar	Board of Sec. Edu. Orissa	1979	Science	19N013	68.3	I	
Intermediate Science	BJB College, Bhubaneswar	Utkal University, Bhubaneswar	1981	Physics, Chemistry, Mathematics, Antropology	228028	69.1	I	Merit Scholarship (1979-1981)
Bachelor of Science	BJB College, Bhubaneswar	Utkal University, Bhubaneswar	1983	Physics (Hons) with Chem.&Maths	808P340	75.4	I	University Rank 2
Master of Science	Utkal University, Bhubaneswar	Utkal University, Bhubaneswar	1985	Physics Specialization: Solid State Physics	0021503	78.9	I	National Scholarship (1983-1985) University Rank 2
Diploma in Advanced Physics (M.Phil)	Institute of Physics, Bhubaneswar. (DAE)	Institute of Physics, Bhubaneswar (Utkal University, Bhubaneswar)	1987	Physics	--	--	--	DAE Research Fellowship (1986-1987)
Post B. Sc. Diploma in Computer Science & Application	Utkal University, Bhubaneswar	Utkal University, Bhubaneswar	1988	Computer Sciences	3	61.0	I	
Ph. D	Institute of Physics, Bhubaneswar (DAE)	Utkal University, Bhubaneswar	1994	Nuclear Physics Theory	--	--	--	DAE Research Fellowship (1987-1993)

Research Projects Completed/Ongoing

1. UGC MRP (as Principal Investigator): Ref. No. F.47-366/2004 (Sanctioned amount: Rs. 65,000/-) **Completed** (2006-2008)

“Hadron Production in High Energy Heavy Ion Collision and search for signature of Quark-Gluon Plasma”

2. DSTE, Goa Research Project (as Co-Investigator): Ref. No. 8-217-2013/STE-DIR/Acct/1418, (Sanctioned amount: Rs. 5,18,000/-) **Completed** (2014-2019)

“Cluster-Mean-field theory for Bose-Hubbard models”

3. DHE, Goa Research Project under the Scheme for Promotion of Science Education (as Principal Investigator): Ref. No. 9/328/2016-17/SPSE-PP/DHE/1269 (Sanctioned amount: Rs.4,30,000/-) **Completed** (2019-2022)

“Study of Bose-Hubbard Model using Real Space Renormalization Group Method”

Research Publications in International Research Journals:

1. L. Satpathy, M. Mishra, **A. Das** and M. Satpathy, *Fragment interactions in nuclear multifragmentation phenomena*, Phys. Lett. B **237**, (1990) 181-186. **ISSN No. 0370-2693**
2. **A. Das**, R. Nayak and L. Satpathy, *Thermostatic properties of hot nuclear systems with finite range force*, J. Phys. G. **18** (1992) 869-888. **ISSN No. 0954-3899**
3. **A. Das**, M. Mishra, M. Satpathy and L. Satpathy, *Effect of interfragment nuclear interaction and statistical approach to multifragmentation phenomena*, J. Phys. G. **19** (1993) 319-338. **ISSN No. 0954-3899**
4. **A. Das**, M. Satpathy and L. Satpathy, *The effect of the interfragment nuclear interaction on the kinetic energy spectra in the multifragmentation process*, J. Phys. G. **20** (1994) 189-196. **ISSN No. 0954-3899**
5. Subrata Pal, S. K. Samaddar, **A. Das**, and J. N. De, *Microcanonical simulation of multifragmentation of exotic nuclear shapes*, Phys. Lett. B **337** (1994) 14-18. **ISSN No. 0370-2693**
6. Subrata Pal, S. K. Samaddar, **A. Das**, and J. N. De, *Recombination effect in nuclear multifragmentation*, Nucl. Phys. A **586** (1995) 466-482. **ISSN No. 0375-9474**
7. C. B. Das, **A. Das**, L. Satpathy and M. Satpathy, *Statistical simulation multifragmentation model for heavy ion collision with entrance channel characteristics*, Phys. Rev. C **53** (1996) 1833-1839. **ISSN No. 0556-2813**
8. C. B. Das, **A. Das**, M. Satpathy and L. Satpathy, *Entrance channel dependence of fragmentation dynamics in heavy-ion collisions*, Phys. Rev. C **56** (1997) 1444. **ISSN No. 0556-2813**
9. Bhargav K Alavani, **Ananya Das** and Ramesh V Pai, *Cluster mean field theory for two dimensional spin-1 Bose–Hubbard model*, J. Phys. B: At. Mol. Opt. Phys. **51** (2018) 145302. **ISSN No. 0953-4075**
10. Chetana G. F. Gaonker, B. K. Alavani, **A. Das**, and R. V. Pai, *Spin-1 Bosons in optical superlattice*, AIP Conference Proceedings, 2115, (2019) 030016. **ISSN No. 0094243X**
11. Bhargav K Alavani, **Ananya Das** and Ramesh V Pai, *Melting of Mott phases in spin-1 Bose Hubbard model*, AIP Conference Proceedings, (2021), 2369, 020031.
12. Pallavi P. Gaude, **Ananya Das**, Ramesh V. Pai, *Cluster mean field plus density matrix renormalization theory for the Bose Hubbard models*, J. Phys. A: Mathematical and Theoretical, **55** (2022) 265004.

National Symposium Proceedings

1. **A. Das**, L. Satpathy, M. Mishra and R. Nayak, *The effect of asymmetry on critical temperature*, Proceedings of the D.A.E Symposium on Nuclear Physics, **32B** (1989) P113.
2. **A. Das**, L. Satpathy, M. Mishra and M. Satpathy, *Multifragmentation versus liquid-gas phase transition in nuclear systems*, , Proceedings of the D.A.E Symposium on Nuclear Physics, **33B** (1990) P247
3. **A. Das**, L. Satpathy, M. Mishra and M. Satpathy, *Multiplicities of the emitted neutron and light charged-particles in multifragmentation phenomena*, Proceedings of the D.A.E Symposium on Nuclear Physics, **34B** (1991) P279
4. **A. Das**, *Properties of hot nuclear systems*, Proceedings of the D.A.E Symposium on Nuclear Physics, **35B** (1992) T5
5. **A. Das**, M. Satpathy, and L. Satpathy, *On the reduction of Coulomb energy of the emitted fragmentation and their kinetic energy spectra in multifragmentation process*, Proceedings of the D.A.E Symposium on Nuclear Physics, **36B** (1993) P176.
6. **A. Das**, M. Satpathy, and L. Satpathy, *Sub-nuclear density and the mechanism of fragment*

- production in heavy-ion collisions*, Proceedings of the D.A.E Symposium on Nuclear Physics, **36B** (1993) P 220.
7. Subrata Pal, S. K. Samaddar, **A. Das**, and J. N. De, *Role of sequential binary mode in nuclear fragmentation*, Proceedings of the D.A.E Symposium on Nuclear Physics, **36B** (1993) P 298.
 8. R. C. Nayak, **A. Das** and L. Satpathy, *Thermostatic properties of hot nuclei*, Proceedings of the D.A.E Symposium on Nuclear Physics, **36B** (1993) P 384.
 9. Subrata Pal, S. K. Samaddar, **A. Das**, and J. N. De, *Multifragmentation of Exotic Nuclear shapes*, Proceedings of the D.A.E Symposium on Nuclear Physics, **37B** (1994) P 173.
 10. Subrata Pal, S. K. Samaddar, **A. Das**, and J. N. De, *Effect of Recombination in Nuclear Multifragmentation*, Proceedings of the D.A.E Symposium on Nuclear Physics, **37B** (1994) P 197.
 11. C. B. Das, **A. Das**, L. Satpathy and M. Satpathy, *Statistical simulations multifragmentation model for heavy ion collision with entrance channel characteristics*, Proceedings of the D.A.E Symposium on Nuclear Physics, **38B** (1995) P 231.
 12. C. B. Das, and **A. Das**, *Exotic nuclear shapes and the mechanism of IMF production in heavy ion collisions*, Proceedings of the D.A.E Symposium on Nuclear Physics, **39B** (1996) P 136.
 13. C. B. Das, **A. Das**, M. Satpathy and L. Satpathy, *Study of multifragmentation process in non-central heavy ion collision*, Proceedings of the D.A.E Symposium on Nuclear Physics, **39B** (1996) P 208.
 14. Bhargav K. Alavani, **Ananya Das** and Ramesh V. Pai, *Cluster Mean-field Theory for Spin-1 Bose Hubbard Model*, 59th DAE-Solid State Physics Symposium, organized by BARC, DAE, BRNS, held at VIT University, Vellore, TN, during December 16-20, 2014.
 15. Chetana G. F. Gaonker, B. K. Alavan, **A. Das**, and R. V. Pai, *Spin-1 Bosons in optical superlattice*, 63rd DAE- Solid State Physics Symposium, organized by BARC, DAE, BRNS, held at Guru Jambheshwar University of Science & Technology, Hisar, Haryana, during December 18-22, 2018. [**Best Poster Award**]
 16. C. N. Fernandes, S. S. Prabhu Desai, X. A. Quadros, R. R. Gowda and **Ananya Das**, *Structural and Dielectric Properties of PCT Ceramics*, National Conference Proceedings on 'Recent Advances in Synthesis, Characterization Techniques and Applications of Materials', organized by Department of Physics, K. J. Somaiya College of Science and Commerce, Mumbai, December 29 & 30, 2019.
 17. Bhargav K. Alavani, **Ananya Das** and Ramesh V. Pai, *Melting of Mott Phases in Spin-1 Bose Hubbard Model*, On-line National Conference on 'Physics and Chemistry of Materials', organised by Department of Physics, Govt. Holkar Science College, Indore, December 14-16, 2020. [**Best Paper Award**]

International/National Symposium Proceedings

1. M. Satpathy, **A. Das**, M. Mishra and L. Satpathy, *Importance of interfragment nuclear interaction in multifragmentation phenomena*, 4th International Conference on Nucleus-Nucleus Collision, Kanazawa, Japan, (1991) Paper no. B32, Page 202.

Symposia/ Schools/Meetings Attended

1. D.A.E. Symposium on Nuclear Physics, held at B.A.R.C., Bombay, December 1988.
2. Tutorial School on QCD and Nuclear Physics, held at C.T.S., Bangalore, March 1989.
3. Annual Topical meeting on Nuclear Physics, held at V.E.C.C., Calcutta, September 1989.
4. Winter School on QGP, held at Puri, Orissa, December 1989.

5. D.A.E. Symposium on Nuclear Physics, held at Madras University, Madras, December 1990.
6. II SERC School on Nuclear Physics, held at N.E.H.U., Shillong, February 1991.
7. D.A.E. Symposium on Nuclear Physics, held at B.A.R.C., Bombay, December 1991.
8. Young Physicist Colloquium, held at S.I.N.P., Calcutta, August 1992.
9. IV SERC School on Nuclear Physics, held at Goa University, Goa, February 1993.
10. D.A.E. Symposium on Nuclear Physics, held at Calicut University, Calicut, December 1993.
11. Winter Workshop on Nuclear Equation of States, held at Puri, Orissa, January 1994.
12. D.A.E. Symposium on Nuclear Physics, held at Utkal University, Bhubaneswar, December 1994.
13. State level: Workshop on Introduction to Microprocessors and Microcontrollers organized by Department of Physics, at Parvatibai Chowgule College of Arts and Science, Goa from 16th-18th January, 2014.
14. State level Workshop: Lecture series on Material Science organized by Department of Physics, at Parvatibai Chowgule College of Arts and Science, Goa from 15th-18th September, 2014.
15. National Seminar on Recent Advances in Physics organized by Dept. of Physics, Kakatiya University, Warangal, Telangana State on 6th & 7th November, 2014.
16. State level: 'Experimental Demonstration of Scientific Concepts' by Prof. B. D. Chakrudev, at Carmel College of Arts, Science and Commerce for Women, Goa, held on 21st November 2014.
17. State level: Workshop on "Research Based Pedagogical Tolls for Teaching Physics Concepts", organized by Department of Physics, at Parvatibai Chowgule College of Arts and Science, Goa held on 19th and 20th November, 2018.
18. State level: Goa Physics research Meet, organized by Department of Physics, at Parvatibai Chowgule College of Arts and Science, Goa held on 2nd March 2019. [presented 3 posters]
19. 7th International Conference on Issues and Challenges in Doctoral Research organized by Goa University, Goa, held on 25th & 26th August, 2019; on the occasion of World Doctorates Day.
20. State level Workshop on Scope & Limitation of Goa University B.Sc. Physics Revised CBCS Syllabus and Discussion on Model Question Paper organized by IAPT Goa Regional Council in collaboration with DCT's Dhempe College of Arts and Science, at Dhempe College of Arts and Science, Panaji, held on 14th September 2019.
21. National Conference Proceedings on 'Recent Advances in Synthesis, Characterization Techniques and Applications of Materials', organized by Department of Physics, K. J. Somaiya College of Science and Commerce, Mumbai, held on 29th & 30th December, 2019.
22. State level Goa Physics Research Meet, at Indian Institute of Technology, Goa, held on 25th January 2020. [presented 1 poster]
23. IAPT 20th Annual Convention, at PES College Ponda, held on 22nd February, 2020. [presented 1 poster]
24. National Symposium on 'Recent Trends in Condensed Matter Physics and Material Science', at Goa University, held on March 12th & 13th 2020.
25. International E-Conference on Covid-19 Global Impacts on 20th & 21st July 2020, organised by African British Journals.
26. National level: Free Webinar: Criteria III of NBA Accreditation - PO-CO Attainment Computation on 25th November 2020, organised by inPods.
27. State level: Webinar on Demystifying Dyslexia- Assisting children with Specific Learning Disability on 10th October, 2020 organized by Goa Dyslexia Association in collaboration with Unique Ability Consulting and Parvatibai Chowgule College of Arts and Science.

Seminar Talks Delivered @ National level

1. Stability of hot nuclear matter', Seminar organized by I.P.A., Bhubaneswar Chapter, held at Institute of Physics, Bhubaneswar, June 1990.
2. Multiplicities of the emitted neutron and light charged-particles in fission and multifragmentation processes', Seminar organized by I.P.A., Bhubaneswar Chapter, held at Institute of Physics, Bhubaneswar, June 1991.
3. Thermostatic properties of hot nuclear matter using a finite range force', II S.E.R.C. School on Nuclear Physics: Nuclear Reactions, held at N.E.H.U., Shillong, February 1991.
4. Statistical decay of hot nuclei', Young Physicist Colloquium, organized by I.P.S., held at S.I.N.P., Calcutta, August 1992.
5. Several oral presentations in the Annual D.A.E. Symposium on Nuclear Physics during 1989-1993.

Teaching Modules Prepared and Recorded @ DISHTAVO An initiative of DHE, Govt. of Goa

T.Y. B. Sc. (Semester V): PHYSICS (PYD 103): **Solid State Physics**

Sl. No.	Unit No/Name	Module No	Module Name
1	No.1 Crystal Structure	1	Solids-Amorphous and Crystalline Materials
2		2	Unit Cells and Basis
3		3	Lattice Translation Vectors
4		4	Types of Lattices-I
5		5	Types of lattices-II
6		6	Miller Indices-I
7		7	Miller Indices-II
8		8	Reciprocal Lattice
9		9	Brillouin Zones
10	No.3 Band Theory of Metals	20	Electrons in a Periodic Lattice
11		21	Kronig Penny Model (Qualitative Approach) Part-I
12		22	Kronig Penny Model (Qualitative Approach) Part-II
13		23	Effective Mass of Electron

Other Prominent Contribution to Parent and Other Organisations:

1. Appointed as **Dean** of Sciences of our college from academic year 2013-14 to 2017-18 (during the initial stage of academic autonomy), and again in year October 2021- January 2022.
Worked as a member of **IQAC** from 2015-2018.
2. Appointed as **Teacher representative to Governing Body** from 2016-2018.
3. **Chairman BoS** (Physics) from 2015-16 & 2016-17 of our college. Heading dept. October 2021- January 2022.
4. **Initiated Educational Outreach Programme** (November 2016, May 2017)
5. Member of **Research committee** from the year of inception of committee. Played a key role to

- bring out **VISION**: inhouse interdisciplinary research journal in print. Appointed as the Convener of Research Committee in year 2012 to 2015. Worked as an editor (academic year 2014-2015) and as a joint editor (the academic year 2013- 2014) for On-line VISION.
6. Attended as **HoD** (Physics) Concluding session for the three days 'Basic Course in Microprocessors' at R.P. Gogate College of Arts and Science, Ratnagiri, Maharashtra on 27th April 2016, as part of **MoU activity**. Under leadership as head of dept. then we had academically noteworthy collaborations.
 7. Worked as **Resource Person in Faculty Enrichment Programme**, workshop on 'College Autonomy' at Yashwantrao Chavan Institute of Science, Satara, held on 10th & 11th February 2017. [Delivered a talk on Designing Course Structure based on CBCS.]
 8. Appointed as the **Convener of Mentoring Committee** from 2010-2014. As an invite, delivered a talk on 'Mentoring' to the staff of VVM's Shree Damodar College of Commerce & Economics on 12th July 2018.
 9. Worked as co-coordinator for **NIRF**.
 10. Worked as **member of BoS, Physics, Goa University**, as paper setter and examiner for University Examination in theory as well as practicals.
 11. Appointed as **Vice Principal** from January 2022- July 2022,
 12. Appointed as **Offg. Principal** from July 2022- February 2023.
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Personal

Date of Birth: 15 June 1964

Place of Birth: Bhubaneswar, Odisha, India

Sex: Female

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