

BANKURA UNIVERSITY



FACULTY ACADEMIC PROFILE/ CURRICULUM VITAE

- Name:** Dr. BALARAMDEY
- Designation:** ASSISTANT PROFESSOR
- Date of Birth :**20/02/1987
- Specializations:** Experimental Nuclear Physics
- Contact Information:**
Contact Address: Vill – Khandary, Post – Mukatore, Dist – Bankura, West Bengal
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- Academic qualifications:**

College/ University from which the degree was obtained	Abbreviation of the degree
Bankura Christian College	Graduation
Bengal Engineering and Science University (BESU, Shibpur)	Post Graduation
Variable Energy Cyclotron Centre, HomiBhabha National Institute	Post-M.Sc
Variable Energy Cyclotron Centre, HomiBhabha National Institute	Ph.D

7. Past Employments/ Academic Experience:

- Visiting Fellow (Tata Institute of Fundamental Research, Mumbai)
- DST-SERB National Post Doctoral Fellow (Saha Institute of Nuclear Physics, Kolkata)

8. Research Interests:

- Development of novel detectors and instrumentation for future Experimental low Energy nuclear physics and Astrophysics.
- Giant Dipole Resonance at very high temperature.
- Study of thermodynamic quantities and pairing correlation in atomic nuclei.
- Nuclear level density at very high excitation energy using γ -gated particle or neutron spectra.
- Angular momentum gated Superfluid-Normal phase transition in atomic nuclei.
- The effect of α -clustering on exotic shape of atomic nuclei.

- Designing and development of windowless gas-jet target facility in india.
- Entropy difference and Pairing re-entrance phenomena in atomic nuclei.
- Nuclear level density and reaction rate in nuclear astrophysics
- Simultaneous measurement of neutron and γ in nuclear reaction.

9. Select list of publications:

a) *Journals / Online Journals:*

1. "Study of radioactivity built-up and decay with singles time-stamped data" Sangeeta Das, Arkajyoti De, [BalaramDey](#), Sathi Sharma, AnikAdhikari, et al., **Accepted in Journal of Instrumentation (2019)**.
2. "S-shaped heat capacity in odd-odd deformed nucleus" [BalaramDey](#), N. Quang Hung, Deepak Pandit, Srijit Bhattacharya, N. Dinh Dang, L. T. QuynhHuong, DebasishMondal, S. Mukhopadhyay, Surajit Pal, A. De, S. R. Banerjee., **Physics Letters B 789 (2019) 634638**
3. "Role of fluctuations in a thermal phase transition in a nucleus probed via the giant dipole resonance" Deepak Pandit, Srijit Bhattacharya, DebasishMondal, [BalaramDey](#), S. Mukhopadhyay, Surajit Pal, A. De, and S. R. Banerjee., **Phys. Rev. C 99, 024315 (2019)**
4. "Slow fission of highly excited plutonium nuclei" AK Sikdar, A Ray, Deepak Pandit, [BalaramDey](#), Sarmishtha Bhattacharyya, Soumik Bhattacharya, A Bisoi, A De, S Paul, Srijit Bhattacharya, A Chatterjee., **Physical Review C 98 (2019) 024615**.
5. "Spectroscopy of a tetrahedral doubly magic candidate nucleus in ^{160}Yb " ASaha, T Bhattacharjee, D Curien, [BalaramDey](#), A Goswami et al., **J. Phys. G :Nucl. Part. Phys. 46 (2019) 055102**.
6. "Study of Jacobi shape transition in $A \sim 30$ nuclei" [BalaramDey](#), C. Ghosh, Deepak Pandit, A.K. Rhine Kumar, S. Pal, V. Nanal, R. G. Pillay et al., **Physical Review C 97, 014317 (2018)**.
7. "Experimental signature of collective enhancement in nuclear level density" Deepak Pandit, Srijit Bhattacharya, DebasishMondal, Pratap Roy, K. Banerjee, S. Mukhopadhyay, Surajit Pal, A. De, [BalaramDey](#), and S. R. Banerjee **Phys. Rev. C 97, 041301(R) (2018)**.
8. "Study of giant dipole resonance in hot rotating light mass nucleus ^{31}P " DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, Srijit Bhattacharya, A. De, N. Dinh Dang, N. Quang Hung, Soumik Bhattacharya, S. Bhattacharyya, [BalaramDey](#), Pratap Roy, K. Banerjee, S.R. Banerjee., **Physics Letters B 784 (2018) 423428**.
9. "Excited negative parity bands in ^{160}Yb " ASaha, T Bhattacharjee, D Curien, K mazurek, [BalaramDey](#) et al., **Phys. Scr. 93 (2018) 034001**.
10. "Level densities and thermodynamics in hot rotating ^{96}Tc nucleus" [BalaramDey](#), Deepak Pandit, Srijit Bhattacharya, N. Quang Hung, N. Dinh Dang, L. Tan Phuc et al., **Physical Review C 96, 054326 (2017)**.
11. "Experimental Determination of η/s for Finite Nuclear Matter" DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, [BalaramDey](#), Srijit Bhattacharya, A. De, Soumik Bhattacharya, S. Bhattacharyya, Pratap Roy, K. Banerjee, and S.R. Banerjee., **Physical Review Letter 118 (2017) 192501**.

12. "Giant Dipole Resonance studies in Ba isotopes at $E/A \sim 5$ MeV" C. Ghosh, A.K. Rhine Kumar, [BalaramDey](#), V. Nanal, R.G. Pillay, et al., **Physical Review C** **96**, **014309** (2017).
13. "Signature of clustering in quantum many body system probed by giant dipole resonance" Deepak Pandit, DebasishMondal, [BalaramDey](#), Srijit Bhattacharya, S. Mukhopadhyay, Surajit Pal, A. De, and S. R. Banerjee, et al. **Physical Review C** **95** (2017) **034301**.
14. "Exclusive measurement of isospin mixing at high temperature in ^{32}S " DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, Srijit Bhattacharya, A. De, S. Bhattacharya, S. Bhattacharyya, [BalaramDey](#), Pratap Roy, K. Banerjee, and S. R. Banerjee, **Physics Letter B** **762** (2016) **422**.
15. "Experimental investigation on the temperature dependence of the nuclear level density parameter" [BalaramDey](#), Deepak Pandit, Srijit Bhattacharya, K. Banerjee, N. Quang Hung, N. Dinh Dang, DebasishMondal, S. Mukhopadhyay, Surajit Pal, A. De and S. R. Banerjee, Communicated in **Physical Review C** **91** (2015) **044326**.
16. "Probing the critical behavior in the evolution of GDR width at very low temperatures in $A \sim 100$ mass region" [BalaramDey](#), DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, Srijit Bhattacharya, A. De, K. Banerjee, N. Dinh Dang, N. Quang Hung, S. R. Banerjee, **Phys. Lett. B** **731** (2014) **92**.
17. "Examination of level density prescriptions in the interpretation of high energy γ -ray spectra" Srijit Bhattacharya, Deepak Pandit, [BalaramDey](#), DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, A. De and S. R. Banerjee, **Phys. Rev. C** **90**, **054319** (2014)
18. "Giant dipole resonance width and the universality of a fluctuation model including critical temperature" Deepak Pandit, Srijit Bhattacharya, [BalaramDey](#), S. Mukhopadhyay, Surajit Pal, A. De, S. R. Banerjee, **Phys. Rev. C** **88**, **054327** (2013).
19. "Giant dipole resonance width as a probe for nuclear deformation at finite excitation" Deepak Pandit, [BalaramDey](#), DebasishMondal, S. Mukhopadhyay, Srijit Bhattacharya, Surajit Pal, A. De and S. R. Banerjee, **Phys. Rev. C** **87**, **044325** (2013).
20. "Neutron response of the LAMBDA spectrometer and neutron interaction length in BaF_2 " [BalaramDey](#), DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, Srijit Bhattacharya, A. De and S. R. Banerjee, **Nucl. Instru and Meth in Phys Research A** **727** (2013) **7**.

10. **Invited lectures delivered:**

- "S-shaped heat capacity in deformed odd-odd nucleus" at "The 2nd international workshop on quantum many body system in particle, nuclear and atomic physics" in NhaTrang City, Vietnam (07/03/2019 – 12/03/2019)
- "Jacobi shapes and clustering effect in light nuclei" at Zakopane conference (2018), Zakopane, Krakow, Poland (26/08/2018 – 02/09/2018)
- "Probing the critical behavior in the variation of GDR width at very low temperature" at Collective Motion of Nuclei under Extreme Conditions (COMEX), Krakow, Poland (14/09/2015-18/09/2015)

11. **Awards:**

12. Papers presented in Conferences, Seminars, Workshops and Symposia:

1. "Neutron response of PARIS phoswich detector" **BalaramDey**, C Ghosh, V Nanal, S Pal, R.G.Pillay, K V Anoop and M S Pose Advanced Detectors for Nuclear, High Energy and Astroparticle Physics. Springer Proceedings in Physics, vol 201, (2018) 187 . Springer, Singapore
2. "Lifetime measurement of $3/2^+$ state of ^{117}Sn , SangeetaDas,SumanAich,A. Adhikari,S.S. Alam,Sathi Sharma, **BalaramDey**,ArkabrataGupta,Y. Sapkota,A. Das,A. Saha,S.K. Dey,DibyadyutPramanik,D. Banerjee,T. Bhattacharjee,C.C. Dey,AbhijitBisoi, S. Sarkar, M. SahaSarkar DAE Symp. onNucl. Phys. 63 (2018) 1144.
3. Singles time stamped data in In-beam spectroscopy, Sangeeta Das, Arkajyoti De, **BalaramDey**, Sathi Sharma, A. Adhikari,S.S. Alam,Arkabrata Gupta, Y. Sapkota,A. Das,A. Saha,DibyadyutiPramanik,D. Banerjee,T. Bhattacharjee,AbhijitBisoi,S. Sarkar, M. SahaSarkar DAE Symp. onNucl. Phys. 63 (2018) 1144.
4. Population of n-unbound states of ^{65}Ni via one neutron transfer reaction $^{64}\text{Ni}(^9\text{Be}, ^8\text{Be})$, RajkumarSantra,SubinitRoy,HaridasPai,RajbanshiSubhendu,Sajad Ali, **BalaramDey**,SaikatBhattacharjee,AnjaliMukherjee,F. S. Babra,Md. S. R. Laskar,SanjoyPal,RudrojyotiPalit DAE Symp. onNucl. Phys. 63 (2018) 802.
5. 'Few-body aspects in the kinematically complete cross sections of $^4\text{He}(d,p\alpha)$ at $E_d = 18 \text{ MeV}$ ', A De,DMajee,SPaul,SBhattacharya,S R Banerjee,DeepakPandit,SMukhopadhyay, S Pal,DebasishMondal, **BalaramDey** DAE Symp. onNucl. Phys. 63 (2018) 742.
6. Investigation of structural evolution in ^{70}Ge , RajkumarSantra,SubhenduRajbanshi,HaridasPai,SubinitRoy,Sajad Ali, **BalaramDey**,SaikatBhattacharjee,AnjaliMukherjee,F. S. Babra,Md. S. R. Laskar,SanjoyPal,RudrojyotiPalit DAE Symp. onNucl. Phys. 63 (2018) 350.
7. Evolution of fluctuation and thermal phase transition in nuclei Deepak Pandit, Srijit Bhattacharya, DebasishMondal, **BalaramDey**, S. Mukhopadhyay, Surajit Pal, A. De, and S. R. Banerjee DAE Symp. onNucl. Phys. 63 (2018) 116.
8. Anomaly in the giant dipole resonance spectrum of ^{28}Si , **BalaramDey**,CGhosh,DeepakPandit,A K Rhine Kumar,SPal,VNanal,R G Pillay,PARumugam, S De,HKrishnamoorthy,GGupta,E T Mirgule,SurajitPal,P C Rout DAE Symp. onNucl. Phys. 62 (2017) 446.
9. Characterization of CLYC detector, **BalaramDey**,H. Krishnamoorthy,S. Pal,M.SPose,V. Nanal,R.G. Pillay DAE Symp. onNucl. Phys. 62 (2017) 994
10. Characterizationof $\text{CeBr}_3\text{-NaI(Tl)}$ phoswich detector for PARIS collaboration, G. Gupta,**BalaramDey**,C. Ghosh,S. Pal,M.S. Pose,V. Nanal,R.G. Pillay DAE Symp. onNucl. Phys. 62 (2017) 1004.
11. Linearity test of PARIS phoswich elements using cosmic muons, C. Ghosh,**BalaramDey**,V. Nanal,R.G. Pillay DAE Symp. onNucl. Phys. 62 (2017) 1036.
12. Fluidity of finite nuclear matter - An experimental endeavour, DebasishMondal,DeepakPandit,S. Mukhopadhyay,SurajitPal,**BalaramDey**,SrijitBhattacharya,A.De,SoumikBhattachary

- a,S. Bhattacharyya,PratapRoy,K. Banerjee, S. R. Banerjee DAE Symp. onNucl. Phys. 62 (2017) 49 .
13. Confirmation of collective enhancement and. its fadeout in the NLD , Deepak Pandit,SrijitBhattacharya,DebasishMondal,PratapRoy,KaushikBanerjee,SMukhopadhyay,SurajitPal,ADe,**BalaramDey**,S R Banerjee DAE Symp.onNucl. Phys. 62 (2017) 62.
 14. "Study of neutron interaction in PARIS phoswichdetecto" **BalaramDey**, C. Ghosh, S. Pal, V. Nanal, R.G. Pillay, K.V. Anoop, M.S. Pose. DAE Symp. onNucl. Phys 61 (2016) 1040.
 15. "Study of Jacobi shape transition in α cluster and non- α cluster nuclei" **BalaramDey**, C. Ghosh, S. Pal, Deepak Pandit, V. Nanal, R.G. Pillay, H. Krishnamoorthy, G. Gupta, P.C. Rout, E.T. Mirgule, Sukanya De, M.S. Pose, and Surajit Pal. DAE Symp. onNucl. Phys 61 (2016) 100.
 16. "In-beam test of PARIS mini-cluster" S. pal, **BalaramDey**, C. Ghosh, V. Nanal, R.G. Pillay, Deepak Pandit and M.S. Pose. Submitted to DAE-BRNS 61 (2016) 968.
 17. "Pulse height response function of different neutron energies in the LAMBDA spectrometer" **BalaramDey**, Deepak Pandit, DebasishMondal, S. Mukhopadhyay, Surajit Pal, K. Banerjee, S. R. Banerjee submitted in DAE Symp. onNucl. Phys. 60 (2015) 906.
 18. "Shape transition from collective prolate to spherical as a function of temperature in ^{169}Tm nucleus via GDR gamma-rays", Deepak Pandit,Srijit Bhattacharya, **BalaramDey**,DebasishMondal,SMukhopadhyay,SurajitPal,ADe,S R Banerjee., DAE Symp. onNucl. Phys. 60(2015) 58.
 19. "Systematic Study of the temperature variation of isospin mixing in ^{32}S " DebasishMondal,S. Mukhopadhyay,DeepakPandit,**BalaramDey**,SurajitPal,SrijitBhattacharya,A. De,K. Banerjee,SoumikBhattacharya,S. Bhattacharyya, S. R. Banerjee., DAE Symp. on Nucl.Phys.60 (2015)158.
 20. "Experimental investigation on the temperature dependence of the nuclear level density parameter" **BalaramDey**, Deepak Pandit, Srijit Bhattacharya, DebasishMondal, S. Mukhopadhyay, Surajit Pal, A. De, K. Banerjee, and S. R. Banerjee DAE Symp. onNucl. Phys. 59 (2014) 76.
 21. "A Unique TAS Setup for high multiplicity events at VECC, Kolkata using BaF2 detectors" G Mukherjee, **BalaramDey** ,S Mukhopadhyay, Deepak Pandit, Surajit Pal, H Pai, S. R Banerjee , EPJ Web of Conferences, 66 (2014) 11026
 22. "Verification of the critical behavior of the Giant Dipole Resonance width in $A \sim 100$ mass region" **BalaramDey**,DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, Srijit Bhattacharya , A. De, K. Banerjee and S. R. Banerjee DAE Symp. onNucl. Phys. 58 (2013) 52.
 23. "Measurement of average interaction length of neutrons in BaF2 crystal" **BalaramDey**,DebasishMondal, Deepak Pandit, S. Mukhopadhyay, Surajit Pal and S. R. Banerjee, DAE Symp. onNucl. Phys. 58 (2013) 844.
 24. "Neutron response of the LAMBDA spectrometer" **BalaramDey**, Deepak Pandit, S. Mukhopadhyay, Surajit Pal, K. Banerjee, S. R. Banerjee DAE Symp. onNucl. Phys. 57 (2012) 868.

25. "Clover detector setup at VECC" Soumik Bhattacharya, **BalaramDey**, A. Saha, A. Choudhury, S. Bhattacharyya, T. Bhattacharjee, S.R. Banerjee, S. Das Gupta, D. Mondal, G. Mukherjee, S. Mukhopadhyay, P. Mukhopadhyay, D. Pandit, S. Pal, T. Roy, I. Seikh, DAE Symp. on Nucl. Phys. 58 (2013)
26. "Determination of the nuclear deformation via the giant dipole resonance width at finite temperature" Deepak Pandit, **BalaramDey**, Debasish Mondal, S. Mukhopadhyay, Srijit Bhattacharya, Surajit Pal, A. De and S. R. Banerjee, DAE Symp. on Nucl. Phys. 58 (2012)
27. "A modular TAS Setup at VECC using BaF₂ detectors" G Mukherjee, **BalaramDey**, S. Mukhopadhyay, Deepak Pandit, Surajit Pal, H. Pai, S. R. Banerjee DAE Symp. on Nucl. Phys. 57 (2012) 872
28. "The effect of level density prescriptions on the understanding of high energy γ -ray spectra" Srijit Bhattacharya, Deepak Pandit, **BalaramDey**, Debasish Mondal, S. Mukhopadhyay, Surajit Pal, A. De and S. R. Banerjee DAE Symp. on Nucl. Phys. 59 (2014) 178.
29. "The decay of high energy GDR γ -rays from ³²S nucleus" Deepak Pandit, **BalaramDey**, Debasish Mondal, Srijit Bhattacharya, S. Mukhopadhyay, Surajit Pal, A. De and S. R. Banerjee DAE Symp. on Nucl. Phys. 59 (2014) 64.
30. "Indication of long fission lifetime of ²⁴²Pu at EX \sim 55 MeV" A. Ray, A. K. Sikdar, **BalaramDey**, D. Pandit, S. Bhattacharya, A. De, S. Paul, Srijit Bhattacharya, A. Bisoi DAE Symp. on Nucl. Phys. 59 (2014) 486.
31. "Measurement of Intrinsic Neutron Detection Efficiency of a Liquid Scintillator using Digital Data Acquisition System" Abhijit Bisoi, D. Pramanik, **BalaramDey** and M. Saha Sarkar. DAE Symp. on Nucl. Phys. 58 (2013) 998.
32. "Isospin symmetry breaking at high excitation via isovector giant dipole resonance decay in ³²S" Debasish Mondal, Deepak Pandit, **BalaramDey**, S. Mukhopadhyay, Surajit Pal, A. De, Srijit Bhattacharya, and S. R. Banerjee, DAE Symp. on Nucl. Phys. 58 (2013) 50.
33. "Suitability of Digital Signal Processing for LAMBDA spectrometer" Debasish Mondal, S. Mukhopadhyay, **BalaramDey**, Deepak Pandit, Surajit Pal, Pranab Singha Roy, Partha Dhara, S.R. Banerjee, DAE Symp. on Nucl. Phys. 58 (2013) 894.
34. "An investigation on off-shell behavior of nuclear reaction in the alpha-induced break-up of deuterons at low energies" A. De, Sushovan Paul, Debakinandan Majee, S. R. Banerjee, Surajit Pal, S. Mukhopadhyay, Deepak Pandit, **BalaramDey**, Debasish Mondal and Srijit Bhattacharya DAE Symp. on Nucl. Phys. 59 (2014) 376.