

CURRICULUM VITAE

NAME: **Dr. Pranab Kumar Bera**

PRESENT ADDRESS: Department of Physics

Dumkal College, Basantapur
P.O.- Dumkal
Dt.-Murshidabad
West Bengal, Pin-742 303
INDIA
Phone- 9732617441
E-mail- pkbdcb@gmail.com

Date of Birth: April 6, 1965

Gender: Male

Martial Status: Double

Nationality: Indian

CURRENT POSITION :

April, 2004-Present Associate Professor of Physics

Department of Physics,
Dumkal College, Basantapur,

EDUCATION:

1990-1995 **Ph.D. (Physics)**

Department of Physics
Visva-Bharati University
P.O. - Santiniketan
Pin-731 235, W.B., INDIA

Thesis Title: Some Topics in Charged Particle Interactions

Advisor: Professor B. Talukdar

1986-1988 **M. Sc. (Physics)**

Department of Physics
Visva-Bharati University
P.O. - Santiniketan
Pin-731 235, W.B., INDIA

Results: First Class, **Marks obtained:** 71%

Courses covered in M. Sc.: Mathematical Physics, Classical
Mechanics, Electrodynamics, Quantum Mechanics, Nuclear

Physics, Solid State Physics, Spectroscopy, Electronics, Field Theory, Statistical Mechanics.

Special Paper: Few-Body Dynamics

1982-1985 B. Sc. Honours(Physics(Hons.), Mathematics, Chemistry)
University of Calcutta, West Bengal, INDIA

Result: Second Class, **Marks Obtained:** 59.25%

1980-1982 Higher Secondary Examination
West Bengal Council of Higher Secondary Education

Result: First Class, **Marks Obtained:** 60%

1974-1980 Secondary Examination
West Bengal Board of Secondary Education

Result: First Class, Marks Obtained: 62%

WORKING EXPERIENCE:

20th April, 2004-Present Working as a Senior Lecturer in Physics at Dumkal
College, Basantapur, Dumkal, Murshidabad,
West Bengal, INDIA

20th April, 2000-March, 2004 Working as a Lecturer in Physics at Dumkal
College, Basantapur, Dumkal, Murshidabad,
West Bengal, INDIA

1995-19 th April, 2000 Worked as a Teacher in Physics at Kharagpur Traffic High
School under West Bengal Board of Secondary Education,
P. O.- Kharagpur, Dist.-West Midnapur, West Bengal,
INDIA

1990-1995 Physics Classes taken as a Teaching Assistant in Physics
at B. Sc. Honours and General level at Physics
Department, Visva-Bharati University, West Bengal,
INDIA

1992-1995 Worked as Senior Research Fellow, Department of
Science and Technology (DST), INDIA, at Department of
Physics, Visva-Bharati University, West Bengal, INDIA

1990-1992

Worked as a Junior Research Fellow, Department of
Atomic Energy (DAE), INDIA, at Department of Physics,
Visva-Bharati University, West Bengal, INDIA

LIST OF PUBLICATIONS OF DR. PRANAB KUMAR BERA:

1. Phase-function method from the Riccati form of Schrödinger equation (A.K. Jana, P. K. Bera, U. Das and B. Talukdar) J. Phys. A: Math. Gen. **23**,153(1990)
2. Integral representation for off-shell Jost functions (U. Das , B. Talukdar and P. K. Bera,) Phys. Rev. **C42**, 1144(1990)
3. Coulomb correction to elastic α - α scattering (P. K. Bera, A.K. Jana, N. Haque and B. Talukdar) Phys. Rev. **C43**, 818(1991)
4. On integral representation of the Coulomb functions(P. K. Bera, U. Das, C. Bhattacharya and B. Talukdar) J. Math. Phys. **33**, 1403(1992)
5. On atomic Compton profile calculation (J. Datta, P. K. Bera and B. Talukdar)J. Phys. B: At. Mol-Opt. Phys. **25**, 3261(1992)
6. Phase-equivalent potential from Supersymmetric quantum mechanics (B. Talukdar, U. Das, C. Bhattacharya and P. K. Bera,) J. Phys. A: Math. Gen. **25**, 4073(1992)
7. Spectral inverse problem in supersymmetric quantum mechanics (P. K. Bera, S. Bhattacharya and B. Talukdar) Int. Mod. Phys. **A8**, 4123(1993)
8. Recurrence relations for N-dimensional radial wavefunctions (P. K. Bera, S. Bhattacharya and B. Talukdar) Phys. Rev. **A48**, 4764(1993)
9. Combined variable-phase supersymmetric quantum mechanics (P. K. Bera, T. K. Nandi and B. Talukdar) J. Phys. A: Math. Gen. **26**, L1073(1993)
10. Quantum defects and atomic core radii (A. Bhattacharya, P. K. Bera, M. M. Panja and B. Talukdar) Phys. Rev. **A51**, 841(1995)
11. Optical theorem and Aharonov-Bohm scattering (M. M. Panja, P. K. Bera, and B. Talukdar) Pramana –J. Phys. **42**, 499(1995)
12. Dalgarno-Lewis method as a perturbation technique (T. K. Nandi, P. K. Bera, M. M. Panja and B. Talukdar) J. Phys. A: Math. Gen. **29**, 1101(1996)
13. Isospectral interactions for three-body problems in line (P. K. Bera, M. M. Panja , and B. Talukdar) Int. J. Mod. Phys. **A11**, 2129(1996)
14. Reply to the comment by Au (T.K. Nandi, P. K. Bera, M. M. Panja and B. Talukdar) J. Phys. A: Math. Gen. **30**, 1789(1997)
15. Isospectral Interactions of the Potential $V(r) = \alpha r^{2d-2} - \beta r^{d-2}$, (P. K. Bera), Indian J. Phys. **79**, 887(2005) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
16. Spectral inverse problem for q-deformed harmonic oscillator (P. K. Bera, J. Datta), Pramana-J. Phys. **67**, 1023(2006) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
17. Linear delta expansion technique for the solution of anharmonic oscillations (P. K. Bera, J. Datta), Pramana-J. Phys. **68**, 117(2007) (ISSN : 0304- 4289)(Impact Factor: 0.575) (Springer)

18. Unified approaches for construction of PT-symmetric quasi-exactly solvable Potentials (P. K. Bera and J. Datta), Indian J. Phys. **81**, 377(2007) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
19. Generalization of quasi-exactly solvable and isospectral potentials (P. K. Bera, J. Datta, M.M. Panja and T. Sil), Pramana -J. Phys. **69**, 337(2007) (ISSN : 0304-4289)(Impact Factor: 0.575)(Springer)
20. A study on nonlinear equation by homotopy perturbation method, (P. K. Bera), Int. J. Nonlinear Science **10**, 422(2010)(ISSN: 1749-3889)(Impact No. 0.5)(World Academic Press, UK)
21. Iterative approach for the eigenvalue problem (J. Datta and P. K. Bera) **76**, 47(2011) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
22. Approximate solutions of the Wei Hua oscillator using the Pekeris approximation and Nikiforov-Uvarov method (P. K. Bera), Pramana-J. Phys. **78**, 91(2012) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
23. The exact solutions for the interaction $V(r) = \alpha r^{2d-2} - \beta r^{-d-2}$ by Nikiforov-uvarov method (P. K. Bera) ,Pramana-J. Phys. **78**,667(2012) (ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
24. Homotopy Perturbation Method in quantum mechanical problems Applied Mathematics and Computation **219**, 3272(2012)(ISSN : 0096-3003)(Impact Factor: 1.338) (Elsevier)
25. Exact solutions of Feinberg-Horodecki equation for Time dependent anharmonic oscillator , (P. K. Bera and T.Sil), Pramana-J. Phys. **80**, 31(2013) (Springer)
26. Brief studies of three-body interactions and the Landau levels using Nikiforov-Uvarov method, Pramana-J. Phys. (.....)2013)(ISSN : 0304-4289)(Impact Factor: 0.575) (Springer)
27. Application of Homotopy Perturbation Method to Eco-epidemic model (P. K. Bera S. Sarwardi and Md. A. Khan)arXiv:1410.4385v1[math.DS]16 Oct ,2014

A. Publication in proceedings

1. Air-Sea Oscillation Model: A Study by Homotopic Mapping Method, Proceeding of National Symposium on Applied Nonlinear Dynamics & Chaos ANDC 2014, Elsevier Science & Technology Publication

Ph. D. Guiding Experience :

Name of the student	Awarded	Title of the thesis
Joydip Datta	2011	Studies on Quantum Mechanical Two-Body Problems".

WORKING EXPERIENCE:

20th April, 2004-Present Working as Associate Professor of Physics at Dumkal College, Basantapur, Dumkal, Murshidabad, West Bengal, INDIA

20th April, 2000-March, 2004 Working as a Lecturer in Physics at Dumkal

College, Basantapur, Dumkal, Murshidabad,
West Bengal, INDIA

1995-19th April, 2000 Worked as a Teacher in Physics at Kharagpur Traffic High

School under West Bengal Board of Secondary Education,
P. O.- Kharagpur, Dist.-West Midnapur, West Bengal,
INDIA

1990-1996 Physics Classes taken as a Teaching Assistant in Physics
at B. Sc. Honours and General level at Physics

Department, Visva-Bharati University, West Bengal,
INDIA

SCHOOL /SEMINAR /SYMPOSIA ATTENDED:

1. Attended 30 days programme of School in Mathematics at Bharati-Daswan University, Triuchirapalli, Tamil Nadu, INDIA, Sponsored by Department of Science and Technology, 1991
2. Attended 20 days programme of first SERC school in Atomic & Molecular Physics at Indian Association for the Cultivation of Science, Calcutta, INDIA, Sponsored by Department of Atomic Energy, 1991
3. Presented two papers on Supersymmetric Quantum Mechanics and Scattering theory of Nuclear Physics at the National Symposia on Nuclear Physics at University of Calicut, Kerala, INDIA, Sponsored by Department of Atomic Energy, 1994
4. Presented two papers on Supersymmetric Quantum Mechanics at the National Seminar on High Energy Physics at Visva-Bharati University, Santiniketan, West Bengal, INDIA, Sponsored by Department of Science and Technology, 1994
5. Attended and paper presented on LDE technique for quantum anharmonic oscillator at 28 days Orientation Programme from 09.03.2002-05.04.2002, University of Burdwan, West Bengal, INDIA, Sponsored by University Grant Commission (UGC)
6. Attended and paper presented on LDE technique for quantum anharmonic oscillator at 21 days Refresher Course in computer Science from 21.01.2006 to 10.02.2006, University of Burdwan, West Bengal, INDIA, Sponsored by University Grant Commission (UGC), 2006
7. Attended 3 days National Workshop on Nuclear and Atomic Techniques Based Pure and Applied Science Organized by UGC-DAE CSR, Kolkata Centre and Kalyani University 29-30, March, 2007, at Kalyani University.
8. Attended National Seminar on Generalizations and Approximations in Mathematics, March 28-29, 2008; Organized by Department of Mathematics, Visva-Bharati, Santiniketan.
9. Attended 5 days International Conference on Nonlinear Dynamical Systems and Turbulence, July 17-22, 2008; Organized by I. I. Sc Mathematics Initiative (IMI)
I. I. Sc, Bangalore, India

10. Attended and presented a paper entitled "**Linear delta expansion technique for the solution of quantum anharmonic oscillators**" in National seminar on Generalizations and approximations in mathematics , March 28-29,2008, Organized by Department of Mathematics, Siksha-Bhavan, Visva-Bharati, Santiniketan
11. Attended the National Seminar on The Problem of India's Nationhood and Indian Federalism Organised by the Department of History and political science, Berhampore Girls' Collegew , Berhamore, Murshidabad, West Bengal , on 21-03-2005
12. **Adomain decomposition method for solving ENSO model** (P. K. Bera) (UGC Sponsored National Seminar on Environmental Hazards(6-7th January, 2012)(Organized by Department of Geography and Chemistry, Dumkal College, Basantapur, Dumkal, Murshidabad, West Bengal)
13. **Supersymmetric solutions of the Schrodinger equation for Manning-Rosen potential by using Pekeris approximation** (P. K. Bera and J. Datta) (UGC Sponsored State Level Seminar on Chemistry: Our Life, Our future(31st January, 2012)(Department of Chemistry, Sripat Singh College, Jiaganj, Murshidabad, West Bengal)
14. **Nonlinear Schrodinger equation and Its importance in Optical Communications (P. K. Bera and J. Datta)** (UGC Sponsored State Level Seminar on Recent trends in Optoelectronics (3rd February,, 2012)(Department of Physics, Sripat Singh College, Jiaganj, Murshidabad, West Bengal)
15. **Solutions of the Manning-Rosen Potential for $l=0$ through Pekeris Approximation and Nikiforov-Uvarov method** (J. Datta and P. K. Bera) (UGC Sponsored National Seminar on Current trends in Chemistry(9th & 10th , February , 2012)(Department of Chemistry, Union Christian Traing College, Berhampore, Murshidabad, West Bengal)
16. **Approximate Solutions of Kinetic Non-Linear Enzyme Reaction Equations Arising in Mathematical Chemistry** (P. K. Bera) , UGC sponsored two-day national seminar on Current trend in chemistry from 23-24th December,2013 organized by Department of Chemistry , Sripat Singh College, Jiaganj, Murshidabad, W.B.
17. **Approximate solutions of Air Sea Oscillation "** (P. K. Bera), in the symposium on Applied Nonlinear Dynamics and Chaos (ANDC-2014) held on 30th May 2014 organized by Government College of Engineering & Textile Technology , Berhampore, Murshidabad, WB and Dumkal Institute of Engineering & Technology Basantapur, Murshidabad, WB.
18. **"Role of Vapor and Cloud Droplets on the Removal of Primary Pollutants Forming Secondary Species from the Atmosphere: A Model Study by Homotropy mapping method"** (P. K. Bera) , UGC sponsored two-day national seminar on Current trend in chemistry from 29-30th December,2014 organised by Department of Chemistry , Sripat Singh College, Jiaganj, Murshidabad, W.B.

Course Attended:

1. Attended an Orientation Programme from 09.03. 2002-05.04.2002 ,University of Burdwan, West Bengal, INDIA, Sponsored by University Grant Commission (UGC)
2. Attended a Refresher Course in computer Science from 21.01.2006 to 10.02.2006 , University of Burdwan, West Bengal, INDIA, Sponsored by University Grant Commission (UGC), 2006
3. Attended a Refresher Course in Physics from 02.02.2009 to 27.02.2009 , Jawaharlal Nehru University, Delhi, India, Sponsored by University Grant Commission (UGC), 2009