

## CURRICULUM VITAE



NAME : SUBENYOY CHAKRABORTY

Father's Name : Late Prakash Chandra Chakraborty

ADDRESS FOR COMMUNICATION : **Department of Mathematics  
Jadavpur University  
Kolkata – 700 032  
West Bengal, India**

DATE OF BIRTH : **July 23, 1959**

NATIONALITY : **Indian**

Residential Address : **5, Shyamapally (Flat no.1A),  
29/A/1N Raja S.C.Mullick Road,  
Sulekha, Jadavpur, Kolkata- 700032**

## **Educational Qualifications :**

<b>Examination Passed</b>	<b>University</b>	<b>Year</b>	<b>Class</b>	<b>Position</b>
B.Sc. (Honours) Mathematics	Calcutta University	1978	First	First
M.Sc. (Applied Mathematics)	Calcutta University	1980	First	First
Ph.D. (Doctor of Philosophy)	Calcutta University	1988	Thesis : “ <b>On some Problems of Atomic Scattering of Charged Particles</b> ” under the supervision of <b>Prof. J. N. Das, Department of Applied Mathematics</b>	
D.Sc. (Doctor of Science)	Jadavpur University	1996	Thesis : “ <b>The Wave Function of the Universe and its consequences in Quantum Cosmology</b> ”.	

## **Professional Experience :**

<b>Designation</b>	<b>Institution / University</b>	<b>Period</b>
Lecturer in Mathematics	Jhargram Raj College Midnapore, West Bengal	11.09.1982 – 30.03.1984
Lecturer and then Sr.Lecturer in Mathematics	Jadavpur University	31.03.1984 – 10.09.1995
Reader in Mathematics	Jadavpur University	11.09.1995 – 27.08.1999
Professor in Mathematics	Jadavpur University	28-08-1999 onwards

## **Honors & Awards :**

- ❖ National Merit Certificate, National Prize & National Scholarship from Govt. of India for the result of Higher Secondary Examination, 1975.
- ❖ Calcutta University Gold Medal, National Scholarship, Jubilee Post Graduate (Merit) Prize, Herschell Award and Six other Prizes for the result of B.Sc. Examination, 1978.
- ❖ Calcutta University Gold Medal and other Prizes for M.Sc. Examination, 1980.
  
- ❖ Awarded Indo-US visiting fellowship for the session 1993-94. Visited the Centre for Gravitational Physics and Geometry, The Pennsylvania State University, USA under the Fulbright fellowship.
- ❖ Selected Associate of Inter University Centre for Astronomy and Astrophysics (IUCAA),Pune for the period 1995-98 and then selected as a Senior Associate of IUCCA for the period 1998 – 2014
- ❖ Elected fellow of West Bengal Academy of Science and Technology, 2006.
- ❖ Selected as a visiting fellow at the Department of Mathematics, Kalyani University, in the UGC-SAP programme during 2012-2013.
  
- ❖ Selected as a Visiting fellow at the Department of Mathematics, North Eastern Hill University(NEHU) under the UGC-DRS programme, during December 11- December 18, 2014.

❖ “Honorable mention” in 2018 Essay Competition of Gravity Research Foundation.

❖ **Project Details :**

5. A project entitled “**Symmetries in Differential Equation and Its Application to Classical and Quantum Cosmology**” has been recommended by the related Mathematical Research Impact Centric Support (MATRICS) to the Science and Engineering Research Board (SERB), DST, Govt. of India. (no. MTR/2017/000407).

4. A project entitled “**Cosmological Studies in Brane World Scenario**” has been awarded by CSIR, Govt. of India for three years starting from February 2009. Project no.03(11131)/08/EMR-II . Amount: 9,51,000/-

3. A project entitled “**Gravitational Collapse in General Theory of Relativity**” has been awarded by CSIR, Govt. of India for three years starting from April 2005.

2. A project entitled “**Electro Dynamics of Rotation and other Accelerations**” has been awarded by the University Grants Commission, Govt. of India for three years starting from April 2001.

1. A project entitled “**The application of Ashtekar variables in Quantum Cosmology and the role of loop formalism**” has been awarded by the Department of Atomic Energy, Govt. of India of Rs. 2,74,050/- for three years 1995-1998.

**Field of Specialization :**

Mathematical Physics, General Relativity, Cosmology, Study of Topological Defects and Quantum Gravity.

### **Recent Field of Interest :**

Lie and Noether symmetry analysis and their applications to Cosmology, Thermodynamics of the Universe, Hawking Radiation, Dark energy, Modified Gravity theories and the Dynamical system in Cosmology.

### **Seminar, Conferences Organized:**

14. Organized a one day seminar on “**Geometry, the key role in Mathematical Physics**” at the Department of Mathematics, Jadavpur University on January 19, 2018.

13. Organized a one day seminar on “**Mathematics and Mathematical Physics**” at the Department of Mathematics, Jadavpur University on January 11, 2017.

12. Organized a one day seminar on “**100 years of Einstein’s General theory of Relativity: The Role of mathematics**” at the Department of Mathematics, Jadavpur University on January 21, 2016.

11. Organized a one day seminar on “**The Fundamental Role of Mathematics in Physical Science**” at the Department of Mathematics, Jadavpur University on January 16, 2015.

10. Organized a one day seminar on “**Mathematics: The Role in Physical Problems**” at the Department of Mathematics, Jadavpur University on January 17, 2014.

9. Organized as an Organizing secretary a National conference on “**Non-Linear Dynamics, Analysis and Optimization**” at the Department of Mathematics, Jadavpur University, from January 9 to 10, 2014

8. Organized a one day seminar on “**The Role of Mathematics in Theoretical Physics**” at the Department of Mathematics, Jadavpur University on 11.01.2013.

7. Organizing secretary of the “**International Conference on Dynamical Systems and its Applications**” organized by the Department of Mathematics, Jadavpur University, during January 11-January 14, 2012.

6. Organized a one day seminar on “**Theoretical Physics and the Role of Mathematics**” at the Department of Mathematics, Jadavpur University on 06.01.2012.

5. Organized a one day seminar on “**Mathematics and Mathematical Physics**” at the Department of Mathematics, Jadavpur University on 07.01.2011.

4. Organized a one day seminar on “**Mathematics and its application to Theoretical Physics**” at the Department of Mathematics, Jadavpur University on 29.01.2010.

3. Organized a one day seminar on “**Recent trend in Physics and the Role of Mathematics**” at the Department of Mathematics, Jadavpur University on 16.01.2009.

2. Organized a one day seminar on “**Mathematics and Contemporary Physics**” at the Department of Mathematics, Jadavpur University on 25.01.2008.

1. Organized a one day seminar on “**Mathematics in Frontier Physics**” at the Department of Mathematics, Jadavpur University on 02.02.2007.

## Invited talks ( Given in last Seven years):

### 2010

1. Delivered two lectures for the students of class IX-XII, Jodhpur Park Boys School, on “Black hole – The Mystery” on 11.01.2010.
2. Delivered an invited talk on “**The validity of the second law of the thermodynamics on the event horizon**” in an workshop on “Astrophysics and Cosmology” organized jointly by the Department of Applied Mathematics, Calcutta University and Inter University Centre for Astronomy and Astrophysics, Pune, during january 13-14, 2010.
3. A talk on “**Are Geometry of space-time and Relativity theory equivalent?**” was given in an one day workshop on “Mathematics and its application to Theoretical Physics” in the Department of Mathematics, Jadavpur University, on 29.01.2010.
4. An invited talk on “**Is Special Theory of Relativity, a theory of Geometry?**” given in the National seminar “Mathematics for Non Linear systems” organized by the Department of Mathematics, Visva Bharati, during march 20-21.
5. An invited talk on “**The Thermodynamics of the Universe bounded by event horizon**” given at the Department of Mathematics, North Bengal University on 09.10.2010.

### 2011

1. Delivered a lecture on “**The Deviation from Classical Mechanics and the role of Geometry**” in the one day workshop on “Mathematics and Mathematical Physics” on 07.01.2011 at the Department of Mathematics, Jadavpur University.

2. An invited talk of 2 hours on “**Applications of Differential Geometry to Relativity**” in the instructional workshop on Differential Geometry held in the Department of Pure Mathematics, Calcutta University, during January 15-18, 2011.
3. Delivered a popular lecture on “**The role of Geometry to Relativity**” at the Department of Mathematics, Belur Vidya Mandir for 1 ½ hrs on 21.02.2011.
4. An invited talk on “**Challenges in Theoretical Physics and possible resolution through geometry**” was given at the Department of Mathematics, Kalyani university on 10.03.2011.
5. Delivered an invited talk on “**Hawking radiation and information loss**” in the Department of Mathematics, Visva Bharati on 27.03.2011.
6. Delivered an invited talk on “**Quantum correction to Hawking radiation**” in the Relativity and Cosmology Research Centre, Department of Physics, Jadavpur University on 30.08.2011.
7. Delivered an invited talk on “**Black hole and recent developments**” in the UGC sponsored seminar on “Modern trends of Mathematical Applications in Biological and other systems” in the Department of Mathematics, Ramkrishna Mission Vivekanda Centenary college, Rahara on 07.09.2010.
8. An invited talk on “**Formation of stars and Chandrasekhar limit**” given in the annual general meeting of CSIR pensioners welfare association in the Meghnad Saha auditorium at CGCRI, Jadavpur, Kolkata, on 5.11.2011.
9. Delivered an invited talk on “**Application of Geometry to Relativity theory**” of 3 hrs duration as a resource person in the refresher’s course organized by the Department of Pure Mathematics, Calcutta University, on 15.11.2011.
10. Delivered a talk on “**Complex vector space in Quantum field theory**” of 3 hrs duration as a resource person in the refresher’s course organized by the Department of Mathematics, Jadavpur University, on 03.12.2011.
11. Delivered an invited talk on “**Operators in complex vector space and Quantum mechanics**” of 3 hrs duration as a resource person in the



refresher's course organized by the Department of Mathematics, Burdwan University, on 16.12.2011.

12. An invited talk in the UGC sponsored National seminar in the Department of Mathematics, Nara Singha Dutta College, Howrah, on 21.12.2011.

## **2012**

1. Delivered a plenary lecture on "**Dynamical system in Cosmology**" in the International conference "Dynamical system : Theory and Applications" organized by the Department of Mathematics, Jadavpur University, during January 11-14, 2012.

2. Delivered two invited talks in the UGC sponsored National seminar organized by the Department of Mathematics, A. M. College, Jhalda, Purulia in March 2012.

3. Delivered an invited talk of 4½ hrs on 20.01.2012 and 24.01.2012 in the refresher's course organized by the Department of Mathematics, North Bengal University as a resource person.

4. Delivered an invited talk at the Department of Mathematics, Kalyani University on March 2012.

5. Delivered an invited talk in the Department of Mathematics, Institute of Technology, BHU on "**Cosmological Evolution – A mathematical model**" on 2012.

6. Delivered lectures on "**Quantum mechanics and complex vector space**" of 4½ hrs duration in the summer school organized by the Faculty of Science, Jadavpur University in July 2012.

7. Delivered lectures of 3 hrs duration "**On Complex analysis**" in the refresher's course organized by the Department of Mathematics, Jadavpur University in July-August 2012.

8. A series of invited lectures on the **Geometric aspects of Special theory of Relativity** were given in a Special Summer School, entitled "Principles and

Applications of the Basic Sciences”, organized by the UGC—Academic Staff College (ASC) and the Department of Physics, Jadavpur University during 09.07.2012—28.07.2012.

9. An invited talk on “**Life and works of Srinivas Ramanujan**” in the NSS programme of Jadavpur University on 22.12.2012.

10. Delivered an invited talk on “**The role of Geometry in Relativity theory**” in the National seminar on “Mathematics and Mathematical sciences” on the occasion of the National Mathematical Year, 2012 during December 27-28 jointly organized by the Department of Pure and Applied Mathematics, Calcutta University.

## 2013

1. Delivered lectures on “**The role of Geometry in Relativity theory**” of 6 hrs duration as a resource person in the refresher’s course organized jointly by the Department of Mathematics and the Department of Physics, north Bengal University in January 2013.

2. An invited talk on “**Generalized Bekenstein-Hawking system : Logarithmic correction**” in the IUCAA resource centre, Department of Physics, North Bengal University on 22.01.2013.

3. An invited talk on “**The Geometry of Black hole**” given on 24.01.2013 in National Institute Of Technology, Sikkim.

4. Delivered a talk on “**Generalized Bekenstein-Hawking system : Logarithmic correction**” at the 27<sup>th</sup> meeting of the Indian Association for the General Relativity and Gravitation.

5. An invited talk entitled “**The Astonishing Indian Mathematician: Life and works**” is delivered in the UGC sponsored state level seminar on “**Ramanujan’s works and its applications**”, organized by the Department of Mathematics, Vivekananda college, Thakurpukur, Kolkata on 24.09.2013.

6. A talk entitled “**Emergent Universe and Particle creation**” is delivered in the Relativity and Cosmology Research Centre, Department of Physics, Jadavpur University on 24.09.2013.

7. An invited talk on “**The Mathematical theory of Relativity theory**” is delivered in an one day seminar “Application of Mathematics in Physical Problems”, organized by the Department of Mathematics, Scottish Church college on 03.10.2013.

8. An invited talk in an international conference on the “**Relativity and Cosmology- A path to Geometry**” was delivered at the Department of Mathematics, Gorakhpur University on 09.11.2013.

9. Delivered 3 lectures on “**Complex Analysis and Operators on Hilbert spaces**” in the refreshers course on “**Mathematical methods, techniques and applications**” jointly organized by the Department of Mathematics and Academic Staff college, UGC, Jadavpur University, from 18<sup>th</sup> November-7<sup>th</sup> December.

10. Delivered an invited lecture of 3hrs duration on “**Relativity Theory: A Model of Geometry**” in the Refresher course on Mathematical Modelling and its Application in Science on 23.12.2013, organized by Academic Staff college, Burdwan University.

11. An invited talk on the “**Black Hole: The Mysterious Object**” was given in the “**National Workshop on Various Aspects of engineering Mathematics and Quantum Physics**” on 24.12.2013 at College of Engineering and Management, Kolaghat.

## 2014

1. An invited talk in the National conference on “**Non-Linear Dynamics, Analysis and Optimization**” at the Department of Mathematics, Jadavpur University” on 9<sup>th</sup> January on “**Motion on a Submanifold: A Dynamical system analysis**”.

2. Two invited talks on “**Relativity theory: The Mathematical formulation**” and “**Black Hole: The Mysterious object**” were delivered at the National Institute of Technology, Durgapur, on 13.01.2014.
3. An invited talk on “**Symmetries in Differential Equations**” was given in a National conference at the Department of Mathematics, Vidyasagar University during 25-26 February, 2014.
4. An invited talk on “**Differential equations and related symmetry**” was given in a National conference organized by the Department of Mathematics, Kalyani University during 4-5 March, 2014.
5. An invited talk was given in the National conference on ‘**Recent Perspectives on Non-linear Mathematics and its Applications**’ on “**Geometrical Features of Lie Point Symmetries of Ordinary Differential Equations and Some Applications**” organized by the Department of Mathematics, Visva Bharati University during 25-26 March, 2014.
6. Two invited talks were given on “**Symmetries in partial differential equations**” in the National conference on “Nonlinear Dynamics” on 26<sup>th</sup> and 27<sup>th</sup> May, 2014 at Government college of Engineering and Textile Technology, Berhampore, Mursidabad.
7. An invited talk on “**A third alternative to explain recent observations: Future deceleration**” was given at the Relativity and Cosmology research centre, Department of Physics, Jadavpur University on 16.09.2014.
8. Delivered two invited lectures on “**The inside geometry on Special theory of Relativity**” and “**Calculus of variations: A path to Classical Mechanics**” were given for the Refreshers’ course organized by the Department of Mathematics, Burdwan University on 17.09.2014.
9. An invited talk on “**The Geometric Universe**” was given in the “**International Conference of Geometry and its Applications**” at the Department of Mathematics, Jadavpur University, jointly organized by the Department of mathematics, Jadavpur University and the Tensor Society, India during 16-18<sup>th</sup> October.

10. A **Key note address** was delivered “**Dynamical System: A differential geometric approach**” on 17<sup>th</sup> November in the “**International Conference on Dynamical System and Mathematical Biology**” jointly organized by the Department of Mathematics, Jadavpur University and the Biomathematical Society of India during 17<sup>th</sup> November-19<sup>th</sup> November, 2014.

11. As an Invited lecturer, invited from North Eastern Hill University (NEHU) under the **UGC-DRS** programme, visited and delivered a set of lectures at the Department of Mathematics, NEHU during December 11-December 18, 2014.

12. As an Invited speaker, delivered an invited talk on “**Symmetries in Differential equations**” in the National Conference on “Contemporary in Mathematics” on 16<sup>th</sup> December, 2014.

## 2015

1. Delivered a talk on “The existence of Wormholes” at the Relativity and Cosmology Research Centre, Department of Physics, Jadavpur University, on 20.01.2015.

2. Delivered an invited talk in the “**DST, UGC, OIL sponsored National Workshop on the General Relativity and Astronomy-its foundations and current trends**” on “Universal thermodynamics” on 28.01.2015 at Tinsukia College.

3. Delivered an invited public lecture in the “**DST, UGC, OIL sponsored National Workshop on the General Relativity and Astronomy-its foundations and current trends**” on “Relativity theory: The inside Geometry” on 29.01.2015 at Tinsukia College.

4. Delivered a key note lecture in the “**UGC sponsored one day state level seminar on present day Mathematics and its applications**” on “The geometrical aspects of special theory of relativity” on 30.01.2015 at K.K.Das college, Garia.

5. Delivered an invited talk in Balurghat College on “Mathematical insight of relativity theory” in the Department of Mathematics, Balurghat College during February 14-15, 2015.

6. Delivered a plenary lecture on “100 years of General theory of Relativity: The story so far” in the International Conference in the Department of Mathematics, Burdwan University during February 18-20, 2015.

7. A Lead lecture was delivered on 28<sup>th</sup> February, 2015 in “22<sup>nd</sup> West Bengal State Science and Technology Congress 2015” during 28<sup>th</sup> Dec-March 1, 2015 at the University of North Bengal.

8. A set of invited lectures on “Partial differential equations” were delivered in the refresher’s course at the Department of Mathematics, University of North Bengal on March 3-4, 2015.

9. Delivered a lecture on “Universal thermodynamics: The story so far” at IUCAA during a visit under Associateship programme during May-June, 2015.

10. A set of lectures on “Application of partial differential equations” were Delivered in the refresher’s course at the Department of Mathematics, Jadavpur University during June-July, 2015.

11. Delivered a lecture on “Geometrical aspects of Relativity theory” in the Department of Mathematics, Sambalpur University, Orissa on August 22, 2015.

11. An invited talk on “A complete cosmic evolution: Particle creation mechanism” was delivered on 10<sup>th</sup> September, 2015 in “A regional meeting on trends and challenges in astronomy and astrophysics” during September 10-12, 2015, organized by IUCAA resource centre, Kolkata, and, department of applied mathematics, Calcutta University.

12. Delivered a series of lectures on “Differential Geometry” in the IUCAA sponsored winter school on General Relativity and its Application, at the Department of Physics, North Bengal University, during November 23- 28, 2015.

13. Delivered a key note address on “Cosmology and future perspective” and an invited talk on the “Mathematical aspects of Einstein’s Relativity theory” in the UGC sponsored National seminar on “Recent Trends in Cosmology and Future Challenges” at the Department of Physics, Prabhat Kr. College, Contai, Purba Medinipur, during December 3-4, 2015.

14. Delivered an invited talk on “The Mathematical Aspects of Relativity Theory” in the special session on the occasion of 100 years of General Relativity in the International conference on “Non linear dynamics, Analysis and optimization” organized by the Department of Mathematics, Jadavpur University during December 9-11, 2015.

15. Delivered an invited lecture on “The Mathematical Aspects of Einstein’s Relativity Theory” in the symposium on Relativity on the occasion of 100 years of Einstein’s General Relativity in the 81th Annual conference of the Indian Mathematical Society, held at Visvesvaraya national Institute of Technology, Nagpur, during December 27-30, 2015.

## **2016**

1. Delivered an invited talk on “Einstein’s General Theory of Relativity: The Mathematical Theory” in the International conference on contemporary topics in Mathematics, in Department of Mathematics, Burdwan University, during February 9-11, 2016.

2. Delivered an invited lecture on “100 years of Einstein’s Relativity Theory” in the Department of Mathematics, Ramakrishna Mission Vivekananda Centenary College, Rahara on March 16, 2016.

3. Delivered an invited talk on “Einstein’s Theory of Relativity: The Mathematical Story” in the Department of Mathematics, Ramakrishna Mission Vidyamandira College on July 25, 2016.

4. Delivered a key note address on “The Mathematical Background of Relativity Theory” and an invited talk on the “Karl Schwarzschild and Black hole in Einstein gravity” in the UGC sponsored National seminar on “CCEGR

-2016” at the Department of Mathematics, Krishnagar Womens College, Krishnanagar, Nadia, during September 6-7, 2016.

5. Delivered an invited talk on “Does geometry dictate the Physical Law or Physics determine the Geometry?” in the Department of Mathematics, Bangabasi Evening College, Kolkata, on November 10, 2016.

## **2017**

1. A set of invited lectures on “Partial differential equations and its Applications” were delivered in the refresher’s course at the Department of Mathematics, Jadavpur University, January 2-21, 2017.

2. Delivered an invited talk on “Does geometry dictate the Physical Law or Physics determine the Geometry?” in 9th National Conference on “Mathematical Techniques and Applications” NCMTA during 27-28 January, 2017 at Department of Mathematics, SRM University, Kattankulathur – 603203, Tamil Nadu, India

3. Delivered an invited talk on “Differential Geometry- The Key role to Physical Laws.” in “Conference on Differential Geometry and its Applications” during 27-28 January, 2017 at Department of Mathematics & Statistics, DDU Gorakhpur University, Gorakhpur, U.P. INDIA.

4. A set of invited lectures on “Differential Equation and Symmetries” were delivered in the refresher’s course at the Department of Pure Mathematics, University of Calcutta, March 8, 2017.

5. Delivered a series of lectures on “The Mathematical tools in Relativity and Cosmology” at the Department of Mathematics, Presidency University, on 22<sup>nd</sup> March and 24<sup>th</sup> March, 2017.

6. Delivered a Third A. K. Gayen memorial lecture on “Black Hole The Mysterious Objects: The Story So Far” on 26<sup>th</sup> April 2017, at Vidyasagar University.



7. Delivered an invited talk on “A Study on Black Hole” at DST Centre for interdisciplinary Mathematical Sciences at BHU, on May 04, 2017.
8. Delivered a lecture on “Dynamical Black Hole and Related Properties” at Gravity seminar in IUCAA on 15<sup>th</sup> June, 2017.
9. Delivered invited talks on “From Blackhole Thermodynamics to Cosmological Constant” and “The Mathematical Story of Time Machine” in the DST SERB on “CCEGR -2017” at the Department of Mathematics, Burdwan University, Golapbag Campus on 31<sup>st</sup> July, 2017.
10. Delivered a lecture on “Special Theory of relativity and limitations of Newtonian theory A mathematical frame work” at Panihati Mahavidyalaya on 31<sup>st</sup> August, 2017.
11. Deliver an invited talk on “Einstein’s Theory of Relativity: The Mathematical Beauty” in the one day Lecture series on Application of Mathematics and statistics to physical and Biological system in the Agricultural and Ecological research unit, ISI, Kolkata on the occasion of 125<sup>th</sup> Birth Anniversary of Prof. P. C. Mahalanavish on 12 December, 2017.
12. Deliver an invited talk on “Mathematical Beauty and Physical Mystry of Lorentzian Manifold: Time Machine” in the 2<sup>nd</sup> Regional Science and Technology Congress (Southern Region) at the University of kalyani in Collaboration with the department of Higher Education, Science and technology and Biotechnology, Govt. Of West bengal on 14 December, 2017.

## 2018

1. Delivered invited talk on “The Mathematical Foundation of Gravitational Waves: The Story so far” in “ICMAAM - 2018” at the Department of Mathematics, Jadavpur University, January 9-12, 2018.\
2. Delivered a course of lectures on “Einstein’s Relativity Theory” and A lecture on “Black Holes” and “Gravitational Waves” at NIT Rourkela during Feb 8-11, 2018.

3. Delivered invited talk on “A tribute to Prof. Satyendra Nath Bose in his 125th Birth Anniversary : Bose-Einstein Statistics” in “ICMA - 2018” at the Department of Mathematics, Burdwan University, Golapbag Campus on 16<sup>th</sup> February, 2018.
4. Delivered a lecture on “Black Hole : The mysterious object” at Vidyasagar College for women, on 23<sup>rd</sup> February, 2018.
5. Delivered two lectures on “Black Hole” and “The mathematical background of Relativity Theory” at Raiganj Surendranath Mahavidyalaya ,Uttar Dinajpur on 6<sup>th</sup> April, 2018.
6. Delivered a lecture on “Black Hole-The story far behind us” at Balagar Vijay Krishna Mahavidyalaya , on 7<sup>th</sup> April, 2018.
7. Delivered a lecture on “Black Hole-The story far behind us” at Narasinha Dutt College , on 21<sup>st</sup> April, 2018.
8. Deliver two invited talks at “Calcutta Mathematical Society” in “Relativity Theory” on May 23<sup>rd</sup> -24<sup>th</sup> , 2018.
9. A invited lectures on “Partial differential equations and its Applications” was delivered in the refresher’s course at the Department of Mathematics, University of Burdwan, July 27, 2018.

### **Administrative Experiences :**

- a) Member of the Jadavpur University court since 2002 to 2006.
- b) Head of the department of mathematics of Jadavpur University since February 2010 to January 2012.
- c) External member of the board of studies in the department of mathematics in Visva-Bharati University.
- d) External member of the departmental Phd. Committee, department of mathematics, Burdwan University.
- e) Member of the UGC assessment committee in department of mathematics, Indian Institute of Science and Chennai Mathematical Institute in 2011-2012.
- f) Act as a member of the UGC expert committee for evaluation and allocation of seminar/ conference/ workshop proposals and also research proposals from the colleges of NE region of India during 2012-2013.
- g) Act as a Coordinator of the UGC-DRS programme, Department of Mathematics, Jadavpur University, since april 2012.

### **List of Ph.D students supervised :**

1. Name : Ashok Kumar Chakraborty

- Title of the thesis : **String theory and other cosmological aspects of the early universe**
- Ph.D awarded in : 1996
2. Name : Gopal Chandra Nandy
- Title of the thesis : **Study of cosmological phenomena in four and higher dimensional space-time**
- Ph.D awarded in : 1997
3. Name : Md. Firoz Shah
- Title of the thesis : **Studies of exact solutions in General Relativity and higher dimensional space-time.**
- Ph.D awarded in : 1998
4. Name : Nabajit Chakravarty
- Title of the thesis : **Some perspective of classical and quantum cosmology using Ashtekar variables.**
- Ph.D awarded in : 1999

5. Name : Lalit Biswas  
Title of the thesis : **Some classical and semi classical aspects of Topological Defects in General Relativity.**  
Ph.D awarded in : 1999
6. Name : Tapan Kumar Ghosh  
Title of the thesis : **Classical cosmology with Brans Dicke theory in four and higher dimensions.**  
Ph.D awarded in : 2000
7. Name : Farook Rahaman  
Title of the thesis : **Some Classical and Quantum aspects of Different Topological Defects.**  
Ph.D awarded in : 2001
8. Name : Anusua Baveja (nee Roy)  
Title of the thesis : **String theory and other cosmological phenomena in four and higher dimensional space-time.**  
Ph.D awarded in : 2001

9. Name : Narayan Chandra Chakraborty  
Title of the thesis : **Solutions of Einstein Equation in different cosmological models and alternative theories.**  
Ph.D awarded in : 2001
10. Name : Arabinda Ghosh  
Title of the thesis : **Some exact solutions in General Relativity theory and with higher dimensional space –time.**  
Ph.D awarded in : 2002
11. Name : Sulagna Chakraborty  
Title of the thesis : **Classical and Quantum aspects of cosmological phenomena in four and higher dimension.**  
Ph.D awarded in : 2004
12. Name : Archan Kumar De  
Title of the thesis : **Brane-world scenario and some of its cosmological implications.**  
Ph.D awarded in : 2004

13. Name : Ujjal Debnath  
Title of the thesis : **Classical solutions in Einstein's Gravity and Study of some collapsing models.**  
Ph.D awarded in : 2004

14. Name : Batul Chandra Santra  
Title of the thesis : **Study of cosmological evolution in four and higher dimensional gravity.**  
Ph.D awarded in : 2005

15. Name : Smt. Sanjukta Chakraborty  
Title of the thesis : **Gravitational collapse in four and higher dimensional space-time.**  
Ph.D awarded in : 2007

16. Name : Smt. Soma Nath (nee Dalal)  
Title of the thesis : **Gravitational Collapse and Astrophysical Consequences in Einstein's Gravity and Brane**

**world scenario.**

Ph.D awarded in : 2007

17. Name :Smt. Tanwi Bandyopadhyay.

Title of the thesis :**Collapse dynamics in Einstein's Gravity and cosmology in Brane scenario.**

Ph.D awarded in : 2009

18. Name : Sri. Jibitesh Dutta

Title of the thesis : **Acceleration and Gravitational thermodynamics in Brane-Gravity based phantom cosmology.**

Ph.D awarded in : 2011

19. Name : Sri. Narayan Kumar Bhadra

Title of The Thesis : **Cosmology of early universe and Einstein Gravity.**

Ph.D awarded in : 2011



20. Name : Sudeshna Mukerji  
Title of The Thesis : **Cosmological solutions in Einstein gravity and modified gravity theory with normal and exotic matter.**  
Ph.D awarded in : 2012
21. Name : Ritabrata Biswas  
Title of The Thesis : **A Brief Study of The Geometry of Black Hole Thermodynamics and Accretion onto Galaxies and Black Holes.**  
Ph.D awarded in : 2012
22. Name : Nairwita Mazumdar  
Title of The Thesis : **Universe as a thermodynamical system and different Gravity theories.**  
Ph.D awarded in : 2012
23. Name : Subhajit Saha  
Title of The Thesis : **Universal Thermodynamics With modified Hawking**

**temperature .**

Ph.D awarded in : 2015

24. Name : Supriya Pan

Title of The Thesis : **An Investigation on the present  
Accelerating Universe**

Ph.D awarded in : 2015

25. Name : Atreyee Biswas

Title of The Thesis : **Universal Thermodynamics,  
Hawking radiation and  
different gravity theories**

Ph.D awarded in : 2016

26. Name : Nilanjana Mahata

Title of The Thesis : **On Some Astrophysical  
problems and role of  
Dynamical system**

Ph.D awarded in : 2016

27. Name : Saugata Mitra

Title of The Thesis : **Universal Thermodynamics in  
Different Gravity Scenario's**

Ph.D awarded in : 2016

28. Name : Sourav Dutta

Title of The Thesis : **Cosmological Evolution And  
Symmetries In The Governing  
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Ph.D awarded in : 2017

29. Name : Sujay Kr. Biswas

Title of The Thesis : **Dynamical system in  
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Ph.D awarded in : 2017

**Present Ph.D students:**

1. Mr. Sourav Halder is working with me on “**Modified Gravity Theories and their role in Cosmology and Universal Thermodynamics**” from June, 2015.
2. Mr. Sudipto Bhattacharjee is working with me on “**Universal Thermodynamics**” as a CSIR fellow from February 01, 2016.
3. Dipanjana Das is working with me on “**Recent Observationally Predicted Cosmic Evolution and Gravity Theories**” as a DST-INSPIRE fellow from May 04, 2016.
4. Pritikana Bhandari is working with me on “**UNIVERSAL THERMODYNAMICS AND RECENT OBSERVATIONS**” as a DST-INSPIRE fellow from May 04, 2016.
5. Sudip Mishra is working with me on “**Dynamical System Analysis**” as a CSIR fellow from January, 2017.
6. Santu Mondal is working with me on “**Lie and Noether symmetry analysis to Einstein;s field equations and cosmological implications**” as a CSIR fellow from February 28, 2017.
7. Subhayan Maity is working with me on “**Universal Thermodynamics**” as a UGC fellow from December 01, 2017.

### **Present Post Doctoral student:**

1. Dr. Abdulla Al Mamon is working with me as a **SERB National Post Doctoral fellow** from September 12, 2017.

### **Publications:**

No. of Papers Published: 260 (National: 17 and International: 243) up to September 2018.

#### **1982**

1. J. N. Das and **S. Chakraborty**, An Improved calculation for the inner shell ionization problems, **Phys. Letts. A 92** (1982) 127-130.

#### **1983**

2. J. N. Das and **S. Chakraborty**, K-shell doubly differential cross-sections for ionization of atoms, **Ind. J. Phys. B 57** (1983) 63-66.

#### **1985**

3. J. N. Das and **S. Chakraborty**, An atomic inner-shell ionization, **Phys. Rev. A 32** (1985) 176-180.
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