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1. Name: Dr Bharat Chandra Dalui
2. Name of Father: Late Tarani Kumar Dalui
3. Permanent Address: Village: Ujirpur, P.O. : Amarpur, Dist.: Purb Bardhaman, PIN-712410
4. Office Address : Katwa College, Katwa, Burdwan, PIN-713130
5. Email ID: [bharatchandradalui@gmail.com](mailto:bharatchandradalui@gmail.com)
6. Sex: Male
7. Date of Birth: 02-10-1976
8. Religion: Hindu
9. Marital Status: Married
10. Phone No: 9433031683
11. Designation: Assistant Professor of Physics
12. Area of Research Interest: Conducting polymer chemistry
13. Research Experience: 8 Years

**14. Educational Qualification:**

Name of Examination	Name of Board /Institution	Year of passing	% of marks	Division /Class	Subjects taken	Remarks
Madhyamik	WBBSE	1993	72.6	I	EngA, BengB, Geo, His, P.Sc, L.Sc, Math, Work Ed Group	
H.S.	WBCHSE	1995	56.9	II	BengA, EngB, Phy, Math, Chem, Bio	
B.Sc.	VISVA-BHARATI	1998	61.4	I	Physics(H), Math, Chem	
M.Sc.	VISVA-BHARATI	2000	59.0	II	Physics	Special Paper- Atomic and Molecular Physics
NET	UGC-CSIR JRF	2001	---	---	Physical Science	
PhD	VISVA-BHARATI	2013	---	---	Title of the thesis: Studies on poly(aniline) based cathode for rechargeable batteries	

15. Teaching Experience: 20 years in Under graduate level
16. Publication: Indian Journal of Chemical Technology, Vol. 15, 2008, Page 576-580 ;  
Bharat Chandra Dalui, I . N. Basumallick, Susanta Ghosh
17. Thesis Title: *Studies on Poly(aniline) Base Cathode for Rechargeable Batteries*
18. Name and Address of Supervisors: Professor I Basumallick, Department of  
Chemistry, Visva-Bharati, Santiniketan, Birbhum, and Professor Susanta Ghosh,  
Integrated Science Education and Research centre, Visva-Bharati, PIN-731235

### **19. Doctoral Research:**

Polymers are generally electrically non conducting but in 1977, it was discovered that polymers are electrically conducting. Just after a decade i.e. in 1987, commercial polymer battery launch in the market. In polymer battery, chemically synthesized conducting polyaniline is used as cathode.

After 1987, a considerable research is going on on polymer battery. We have applied both chemically and electrochemically synthesized polyaniline coated electrode in aqueous zinc battery. Major problems associated with these batteries are their poor rechargeability and incapability of high drain application. Again, the performances of these polymer cathode materials depend on the nature of the doping anions used during polymerization either chemically or electrochemically. Chemical stability of these materials in the battery fluid is also a major problem with polymer electrode.

Keeping these in view, we have synthesized polyaniline and polyaniline derivatives cathode materials with a suitable dopant, among which polyaniline is the best cathode material and it is also chemically stable both in aqueous and organic battery fluid.

Recently, nanomaterials have drawn attention of battery scientists and these nanomaterials are being used as promising electrode materials. It is also well known that nano particles have high surface to volume ratio, so that their electro-catalytic activities are enhanced many folds.

In my research, we have synthesized nano polyaniline by chemically as well as electrochemical techniques. But nano polyaniline synthesized by electrochemical method exhibits excellent electrochemical activities in aqueous and non-aqueous batteries.

An aqueous galvanic cell comprised with nano polyaniline cathode and zinc anode was cycled in the potential range of 0.6 -1.5 Volt at a constant current of 100  $\mu$ A and the specific capacity of nano polyaniline was calculated assuming 100% coulombic efficiency for the

electro-deposition and found to be above 300 AhKg<sup>-1</sup>, which is an excellent figure and much higher than chemical and electrochemical bulk synthesis data.

I have to teach the following topics:

**SEM I: Newtonian Mechanics and LAB class in CBCS**

**SEM II: 1. Electricity and Magnetism & LAB in CBCS**

**2. Waves and Optics & LAB in CBCS**

**SEM III: Analog Electronics and LAB in CBCS**

**SEM IV: Elements of Modern Physics in CBCS**

**SEM V : Quantum Mechanics in CBCS**

**SEM VI: Electromagnetic Theory and LAB in CBCS**

**SEM III: 1. Electricity and Magnetism LAB in NEP**

**2. Waves and Optics & LAB in NEP**

**1. Seminar/Symposium attended**

<b>Sl No</b>	<b>Programme</b>	<b>Duration</b>	<b>Organised by</b>
<b>1</b>	<b>National Seminar on Indian Scientific Heritage: Aryabhata To Harish Chandra</b>	<b>23-24 February,2007</b>	<b>Ramakrishna Mission Vivekananda University</b>
<b>2</b>	<b>65<sup>th</sup> Orientation Programme</b>	<b>4<sup>th</sup> March-31<sup>st</sup> March2008</b>	<b>Academic Staff College, The University of Burdwan</b>
<b>3</b>	<b>Winter School on Nanoparticles-Science and Technology</b>	<b>January 2-15,2009</b>	<b>Indian Institute of Technology Durgapur</b>
<b>4</b>	<b>International Conference on Education: Indian and Global Perspectives</b>	<b>December 12-13, 2009</b>	<b>Ramakrishna Mission Sikshanmandira</b>
<b>5</b>	<b>National Symposium on Atomic &amp; molecular Spectroscopy</b>	<b>March 27-28,2010</b>	<b>Visva-Bharati</b>

6	<b>Refresher Course Recent Developments in Nanoscience &amp; Technology</b>	<b>September 13- October 04, 2010</b>	<b>Jadavpur University</b>
7	<b>National Seminar on Science and Nature: Tagore's Vision and Its Relevance</b>	<b>12-13 March, 2011</b>	<b>Visva-Bharati</b>
8	<b>Neutrino awareness Programme</b>	<b>1<sup>st</sup> April, 2014</b>	<b>The University of Burdwan</b>
9	<b>Indian Nanoelectronics User's Programme</b>	<b>21-23May, 2014</b>	<b>IISc, Bangalore</b>
10	<b>Refresher Course: Nanoscience, Nanotechnology &amp; Applications</b>	<b>11June-1<sup>st</sup> July, 2014</b>	<b>Academic Staff College, The University of Burdwan</b>
11	<b>International Conference on Material Science &amp; Technology (ICMTech-2016)</b>	<b>01-04March,2016</b>	<b>International Association of Advanced Material</b>
12	<b>Workshop on the Syllabus (Semester with CBCS) of Physics (Hons.) Course of Studies</b>	<b>30.10.2017 to 03-11-2017</b>	<b>Department of Physics The University of Burdwan</b>
13	<b>Workshop on SCILAB</b>	<b>17-08-2018 to 18-08-2018</b>	<b>Department of Physics The University of Burdwan</b>
14	<b>Workshop on CBCS</b>	<b>29<sup>th</sup> January-4<sup>th</sup> February, 2019</b>	<b>Academic Staff College, The University of Burdwan</b>

## 2. Posters Presented in Workshops

Sl No	Title	Type of Conference/ Seminar etc	Date of the event	Organise d by	Whether International/National/ States/University /college level
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1	<b>Eletro-Oxidation of ethanol-Pt-Ru composites</b>	<b>Indo-US Workshop</b>	<b>27-02-2013</b>	<b>Banaras Hindu University</b>	<b>International</b>
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### 3. Papers/Posters Presented in Conferences, Seminars, Workshops

SI No	Title	Type of Conference/ Seminar etc	Date of the event	Orga nised by	Whether International/National/Stat es/ University/college level
1	<b>Eletro-Oxidation of ethanol-Pt-Ru composites</b>	<b>Indo-US Workshop</b>	<b>27-02-2013</b>	<b>Banaras Hindu University</b>	<b>International</b>
2	<b>The Biggest Challenge of Green Chemistry : To use its rule in practice</b>	<b>National Seminar</b>	<b>9 Oct 2015</b>	<b>A.K.P.C. Mahavidyalaya, Bengai, Hooghly</b>	<b>National Seminar</b>
3	<b>A new synthetic approach of nano-sized polyaniline cathode material for Zn-polyaniline rechargeable battery</b>	<b>International Conference on Materials Science &amp; Technology</b>	<b>1<sup>st</sup>-4<sup>th</sup> March, 2016</b>	<b>International Association of Advanced Material</b>	<b>International</b>

### 4. Published Books

SI No	Title of Book	Publisher	Date of Publication	ISBN
1	<b>Introduction to Poly(aniline) Based Cathode for Rechargeable Batteries</b>	<b>LAP LAMBERT Academic Publishing</b>	<b>December 1, 2015</b>	<b>978-3-659-80377-2</b>

<b>2</b>	<b>Advanced Practical Physics on Mechanics</b>	<b>LAP LAMBERT Academic Publishing</b>	<b>June25, 2019</b>	<b>978-620-0-22001-1</b>