Curriculam Vitae of Dr. Bhaskar Bhattacharya

Name:- Prof. (Dr.) Bhaskar Bhattacharya

Designation:- Professor of Physics
Department of Physics (MMV)
Banaras Hindu University,
Varanasi - 221005

Positions Held:

- Dean, Academic Affairs, Sharda University, Greater Noida (2016-2017)
- Dean, School of Basic Sciences and Resaerch, Sharda University, Greater Noida (2015 – 2017)
- Dean, School of Engineering & Technology, Sharda University, Greater Noida (2009 – 2011)
- Controller of Examinations, Sharda University, Greater Noida (2011 – 2016)
- Professor in charge, School of Basic Sciences and Research, Sharda University, Greater Noida (2014-2015)
- Member, Academic Council, Executive Council and University Court, Sharda University (2009-2017)
- Head, Department of Applied Sciences, Hindustan College of Science & Technology, Mathura (2005-2007)

Email ID : bhaskar.phys@bhu.ac.in / b.bhattacharya@sharda.ac.in / bhaskarmiet@gmail.com

Education

Ph. D. In Physics	1991 - 1998	Banaras Hindu University, Varanasi,
M. Sc. In Physics	1989 – 1991	Banaras Hindu University, Varanasi,
B. Sc. (Hons in Physics)	1986 - 1989	Banaras Hindu University, Varanasi,

Teaching Experience: (23 years)

Oct. 2017 – continuing	**Professor** Department of Physics (MMV) Banaras Hindu University, Varanasi – 221005
July. 2009 – Oct 2017	**Professor** School of Engineering and Technology Sharda University, Greater Noida G.B. Nagar, 210310.
Nov 2007 – June 2009 (on leave from HCST)	**Research Professor** Korea Advanced Institute of Science & Technology (KAIST), Daejeon, South Korea
Nov. 2003 –July 2009	**Associate Professor** Hindustan College of Science & Technology NH # 2, Farah, Mathura – 281 122, U.P. (INDIA)
Oct. 1998 – Oct. 2003	**Lecturer in Physics** Meerut Institute of Engineering & Technology Baghpat Road, Bypass Crossing, Meerut – 252 002, U.P. (INDIA)
July 1994 – Sept. 1998	**Department of Physics** Banaras Hindu University, Varanasi

Fellowships

1996 - 1998 **Senior Research Fellow,** CSIR, New Delhi

1991 - 1994 **Junior Research Fellow,** DST, New Delhi

Research Experience: (27 years)

Ph.D. awarded students **: Five**

Students working for Ph.D.**: Six (+ 2 submitted)**

M.Tech./ M.Sc. Dissertation awarded : **16**

Research Interest Area(s)

1. Polymer Electrolytes
2. Dye sensitized Solar Cell (DSSC) using polymer electrolytes
3. Quantum Dot Sensitized Solar Cells
4. Ion Beam Irradiation effects on Polymer Electrolytes
5. Supercapacitors
6. Carbon Nanotubes and other derivatives for electrode application

Research Publication's

In year 1995

1. Hydrogen Ion Transport Studies in PEO:NH_4HSO_4 Polymer Electrolyte

   K.K. Maurya, **B. Bhattacharya** and S. Chandra

   Phys. Stat. Sol (a) 147 (1995) 347.

In year 1996

2. Photoelectrochemical Studies of An Ion Conducting Polymer (PEO)/ Semiconductor (Si) Junction
   B. Bhattacharya, H.M. Upadhyaya and S. Chandra

   Solid State Commun 98 (1996) 633.

3. Photoresponse of Silicon-Polymer Electrolyte (PEO:NH_4X and PEO:Nax) Junction
   B. Bhattacharya and S. Chandra

Solid State Ionics: New Developments, eds. B.V.R. Chowdari et al., (World Scientific, Singapore, 1996) pp. 417.

In year 1998

4. Semiconductor Dispersed Polymer Electrolyte Composites
B.Bhattacharya, A. Chandra, N.Srivastava and S.Chandra

Solid State Ionics: Science & Tcchnology, eds. B.V.R.Chowari et al, (World Scientific, Singapore, 1998) pp. 189-193.

In year 1999

5. Resonant Electron Tunneling in Single Quantum Well Hetrostructure Junction of Electrodeposited Metal Semiconductor Nanostructures Using Nuclear Track Filters
A.Biswas, D.K.Avasthi, B.K.Singh, S.Lotha, J.P.Singh, D.Fink, B.K.Yadav, **B.Bhattacharya**, S.K.Bose,

NIM B 151 (1999) 84.

In year 2001

6. Mixed Anion Effect in Ion Conducting Polymer Electrolytes
B.Bhattacharya and A. Chandra

Phys. Stat. Solidi (b) 225 (2001) 179.

In year 2003

7. A comparative study of nano CdS prepared in methanolic solution and polymeric matrix
Pawan Kumar, T.P.Singh, **B. Bhattacharya**, Sanjeev Kumar, *Presented in the National Conference on Lasers & Spectroscopy, 2003, Meerut College, Meerut*

In year 2004

8. Studies on a Semiconductor dispersed (CdS : alum) crystal-crystal composites –
Pawan Kumar, T.P.Singh, S.K. Tomar, **B. Bhattacharya** *Presented in the 6th national conference on solid state ionics, 2004 at Jadavpur University, Kolkata*

9. Photoelectrochemical response of CdS/ polymer electrolyte junction
S.K. Tomar and **B. Bhattacharya** *Presented in the 6th national conference on solid state ionics, 2004 at Jadavpur University, Kolkata*

10. Photoelectrochemical studies of semiconductor/ polymer electrolyte junction
S.K. Tomar and **B. Bhattacharya** *Presented in the international conference on electroactive polymers, 2004, Dalhousie India*

In year 2005

11. Hydrogenation and annealing studies on swift (~100 MeV) heavy Ion (Au^{7+}) irradiated pd/p-Si devices S.P. Pandey, P.C. Srivastava, K. Ashokan and **B. Bhattacharya**
Presented in Indo German workshop on synthesis and modification of nano structured materials by energetic ion beams, Nuclear Science Centre, India, 2005.

12. Variation of band gap in CdPbS with composition prepared by a precipitation technique
S. Kumar and **B. Bhattacharya**
Ind. J. of Pure and Applied Physics **43** (**2005**) 609.

13. Electrical properties of CdS dispersed ammonium alum composite solid electrolyte
K. Devlal, U.C. Johri, N. Srivastava and **B. Bhattacharya**
Ind. J. Physics **79** (**2005**) 1275.

In year 2007

14. A nanoporous TiO2 electrode and new ionic liquid doped solid polymer electrolyte for dye sensitized solar cell application
B. Bhattacharya, S. K. Tomar and J.-Ki Park
Nanotechnology, 18 (2007) 485711

In year 2008

15. Poly(ethylene oxide)/Poly(dimethylsiloxane) Blend Solid Polymer Electrolyte and Its Dye-Sensitized Solar Cell Applications
J.Y. Lee, **Bhaskar Bhattacharya**, D.W. Kim and J.-Ki Park
J. Phys. Chem. C, 112 (2008) 12576

16. Conductivity modulation of PEO based polymer and composite electrolytes due to Li^{3+} ion bombardment
A. Saxena, D. Singh, S.P. Pandey, S.K. Tomar, K. Asokan, D. Kanjilal, R. Kumar and **B. Bhattacharya**
Proceedings – ICEP 2008, 3 (2008) 363 – 371.

In year 2009

17. Polymer Assisted Assembling Of the Semiconductor Particles: Structural and Electrical Studies
Bhaskar Bhattacharya, J.Y. Lee and J.-Ki Park

Applied Surface Science 256 (2009) 499-502

18. Effect of Cation Size on Solid Polymer Electrolyte Based Dye-Sensitized Solar Cells

Bhaskar Bhattacharya, J.Y. Lee, J. Geng, H.T. Jung and J.-Ki Park

Langmuir, 25 (2009) 3276

19. Self degradation of polymer electrolyte based dye-sensitized solar cells and their remedy

J.Y. Lee, **Bhaskar Bhattacharya**, Y.H. Kim, H.T. Jung, J.-Ki Park

Solid State Communications, 149 (2009) 307

20. Ageing and temperature-dependent behaviour of CdS nanoparticles

Bhaskar Bhattacharya, S.K. Tomar, A. Saxena, J.Y. Lee, and J.-Ki Park

Phys. Status Solidi B, 246 (2009) 832

21. Ion- Beam Modification of Peo Based Polymer Electrolytes

D. Singh, A. Saxena, S.P. Pandey, S.K. Tomar, K. Asokan, D. Kanjilal, R. Kumar, **Bhaskar Bhattacharya**

Macromol. Symp., 277 (2009) 8

22. Hydrogenation and annealing studies on swift heavy ion (Au7+) irradiated Pd/p-Si devices

S. P. Pandey, **B. Bhattacharya**, U.P. Singh, K. Asokan

Journal of Optoelectronics and Advanced Materials, 11 (2009) 186

23. Separator grafted with siloxane by electron beam irradiation for lithium secondary batteries

J.Y. Lee, Y.M. Lee, Bhaskar Bhattacharya, Y.C. Nho, J.-Ki Park

Electrochimica Acta 54 (2009) 4312

24. New separator prepared by electron beam irradiation for high voltage lithium secondary batteries
J.Y. Lee, **Bhaskar Bhattacharya**, Y.C. Nho and J.-Ki Park
NIM-B, 267, (2009) 2390

In Year 2010

25. Synthesis, characterization and application of biopolymer-ionic liquid composite material

Pramod K. Singh, **B. Bhattacharya**, R. K. Nagarale, K.-W. Kim and H.-W Rhee

Synthetic Metals 160 (2010) 139-142. (*SCI, Impact Factor 1.87*)

26. Effect of sodium-mixed anion doping in PEO-based polymer electrolytes.

B. Bhattacharya, R. K. Nagarale and Pramod K. Singh

High Performance Polymers 22 (2010) 498–512. (*SCI, Impact Factor 1.31*)

27. Ionic liquid doped Poly (N-methyl 4-vinylpyridine iodide) Solid Polymer Electrolyte for Dye sensitized solar cell.

Pramod K. Singh, **B. Bhattacharya,** R. K. Nagarale, S P Pandey, K. W Kim and H.-W. Rhee

Synthetic Metals 160 (2010) 950-954. (*SCI, Impact Factor 1.87)*

28. Application of Ionic Liquid Doped Solid Polymer Electrolyte

    Pramod K. Singh, Nitin A Jadhav, S. K. Mishra, U. P. Singh and **B. Bhattacharya**

    Ionics 16(2010) 645-648. (*SCI, Impact Factor 1.04*)

29. Effect of nano TiO_2 dispersion on PEO polymer electrolyte property

    Pramod K. Singh, **B. Bhattacharya** and R.K. Nagarale

    Journal of Applied Polymer Science 118 (2010) 2976-2980. (*SCI, Impact Factor1.24*)

30. Property Enhancement of Dye Sensitized Solar Cell using ionic liquid doped solid polymer electrolyte.

    P. K. Singh, **B. Bhattacharya** and S. K. Mishra in "*Advances in nanotechnology and Cryogenics*", (eds) S. Prasad, B. Sahay, A. K. Pandey and S. K. Mishra, World Education, New Delhi (India) 2010, 1-5.

In Year 2011

31. Plasticizer doped ionic liquid incorporated solid polymer electrolytes for photovoltaic application.

    Pramod K. Singh, B. Bhattacharya, R.M. Mehra and Hee-Woo Rhee

    Current Applied Physics 11 (2011) 616 (*SCI, Impact Factor* 2.21)

32. PEO-Based Polymer Electrolytes: A Novel Material for Dye sensitized solar cell

    Pramod K. Singh, S. K. Tomar and Bhaskar Bhattacharya

    Invertis Journal of Science & Technology 1 (2011) 91-102

33. Study of Nano CdS Prepared in Methanolic Solution and Polymer Electrolyte Matrix
    Pawan Kumar, Pramod K. Singh and Bhaskar Bhattacharya
    Ionics 17 (2011) 721-725. (*SCI, Impact Factor* 1.75)

34. Synthesis and Electrochemical Study of Functional Ionic Polymer

R. K. Nagarale, Bhaskar Bhattacharya, Nitin A. Jadhav and Pramod K. Singh

Macromol. Chem.Phys 212 (2011) 1751-1757 (*SCI, Impact Factor* 2.45)

35. Present status of solid state photoelectrochemical solar cell and dye sensitized solar cell using PEO-based polymer electrolytes (Review Article)

Pramod K. Singh, R. K. Nagarale, S. P. Pandey, H W Rhee and B. Bhattacharya

Advances in Natural Sciences: Nanoscience and Nanotechnology, 2 (2011) 023002-15

36. PbS-Nanoparticles Embedded in Polymer Matrix: Preparation and Characterization

Pramod K. Singh, S.K. Tomar, B. Bhattacharya

Nanoscience and Nanotechnology, 1 (2011) 36-39.

37. Effect of capping agent on controlling the particle size of cadmium sulfide
G. S. Sehrawat, N. A. Jadhav, Pramod K. Singh, and **B. Bhattacharya**
J. Sci. & Tech. Res. 1 (2011) 60-63.

In Year 2012

38. Preparation, characterization and application of Nano CdS doped with Alum composite electrolyte
Pramod K. Singh, Pawan Kumar,T. Seth, Hee-Woo Rhee and **B. Bhattacharya**

Journal of Physics and Chemistry of Solids 73 (2012) 1159–1163 (*SCI, Impact Factor 1.63*)

39. Porous nanocrystalline TiO_2 electrode and poly (N-methyl 4-vinylpyridine iodide) – ionic liquid solid polymer electrolyte for device application.
B. Bhattacharya, S. K. Tomar, S. P. Pandey, R. K. Nagarale and Pramod K. Singh,
Int. J. Nanotechnol, 9 (2012) 1030-1039.(*SCI, Imp. Fac.1.01*)

In Year 2013

40. Detection of Banana bunchy top virus using impedance spectroscopy

Sensor Letters, 11 (2013) 2055-2059 (*SCI, Impact Factor* 0.55)
Shahana Majumder, **B. Bhattacharya**, Pramod K Singh, S. Johari

41. Novel Biopolymer Gel Electrolyte for Dye-Sensitized Solar Cell Application
Carbohydrate Polymers 91(2013) 682-685(*SCI, Impact Factor 4.07*)
Rahul Singh, N.A. Jadhav, S.Majmuder, **B.Bhattacharya** and Pramod K. Singh

42. New Polymer Electrolyte for Electrochemical Applications
Journal of Industrial & Engineering Chemistry 19 (2013) 819-822 (*SCI, Imp. Factor 3.51*)

M Singh,V K Singh, Karan Surana, **B. Bhattacharya**, Pramod K. Singh and Hee Woo Rhee

43. Effect of PMMA dispersion in Polyethylene oxide complexed with NH_4ClO_4 polymer electrolyte

Optoelectronics and Advanced Materials-Rapid Communications 7 (2013)157-160 (*SCI, Impact Factor* 0.44)
Pramod K. Singh and **B. Bhattacharya**

44. Synthesis, characterization and sensing application of a solid alum/flyash composite electrolyte
Materiali in tehnologije 47 (2013) 468-471 (*SCI, Impact Factor* 0.55)
Amit Sachdeva, Roja Singh, Pramod K. Singh, **B. Bhattacharya**

45. Structural, optical and electrical studies on Si-doped polymer electrolytes
Materiali in tehnologije 47 (2013) 799-802 (*SCI, Impact Factor* 0.55)
Amit Saxena, Pramod K. Singh, **B. Bhattacharya**

46. Dye sensitized solar cells based on Poly(vinyl alcohol) doped with Ammonium Iodide solid polymer electrolyte

Journal of Optoelectronics and Advanced Materials,15 (9-10) (2013)927-931 (*SCI,Impact Fact.*0.44)
V K. Singh, A. Annu , U Singh, Prabhakar Singh, S.P. Pandey, **Bhaskar Bhattacharya**, Pramod K. Singh

47. Electrostatic model of semiconductor model of semiconductor nano-particles trapped in polymer electrolytes.
Bulletin of Material Science 36 (2013) 977-980 (*SCI, Imp. Fac.1.01*)
Divya Singh, Nitin A. Jadhav and Pramod K. Singh and **Bhaskar Bhattacharya**

In Year 2014

48. Effect of variation of average pore size and specific surface area of ZnO Electrode (WE) on Efficiency of Dye sensitized Solar Cells

Nanoscale Research Letters, 9 (2014)575-583. *(SCI, Impact Factor 2.77)*
N. A. Jadhav, Pramod K. Singh, Hee Woo Rhee, and **B.Bhattacharya**

49. Effect of Structure Texture and Morphology Modulation on Efficiency of Dye sensitized Solar Cells

Int. J. Electrochem. Sci., 9 (2014) 5377 – 5388. (*SCI, Impact Factor* 1.50)

N. A. Jadhav, Pramod K. Singh, Hee Woo Rhee, S. P. Pandey and **B.Bhattacharya**

50. Synthesis of Lead Sulphide Nanoparticles for Electrode Application of Dye Sensitized Solar Cells

Nanosci. Nanotechnol. Lett. 6 (2014) 31-36 (*SCI, Impact Factor* 1.44)
Roja Singh, S.P. Pandey, P.K. Shukla, S. K. Tomar, **B.Bhattacharya**, Pramod K Singh

51. New Biodegradable Polymer Electrolyte for Dye Sensitized Solar Cell
Int. J. Electrochem. Sci., 9 (2014) 2620 - 2630 (*SCI, Impact Factor* 1.50)
Rahul Singh, *B. Bhattacharya*, Hee Woo Rhee, Pramod K Singh

52. Multiwall Carbon Nanotube Doped Ion Conducting Polymer Electrolyte for Electrochemical Application

J. of Exp. Nanoscience, 9 (2014) 444-451. (*SCI, Imp. Fac.0.98*)
Hima Saxena, **B. Bhattacharya**, N A. Jadhav, S. Shukla, M. Dubey, Vivek Kr. Singh, Pramod K. Singh

53. Electrochemical Synthesis of Graphene Oxide and Its Application as Counter Electrode in Dye sensitized solar cell

Journal of Renewable & Sustainable Energy, 6 (2014)013125-013133 (*SCI, Imp Factor 1.51*)

Pramod K Singh, Upasana Singh, **B. Bhattacharya** and Hee Woo Rhee

54. Synthesis, Characterization and Application of CdSe quantum dots

Journal of Engineering & Industrial Chemistry, 20 (2014) 4188-4193 (*SCI, Imp. Factor 3.51*)

Karan Surana, Pramod K Singh, Hee Woo Rhee, **B. Bhattacharya**

55. Detailed electrical measurements on Sago Starch biopolymer solid electrolyte

Phase Transitions, 87 (2014) 1237-1245 (*SCI, Impact Factor 0.954*)

Rahul Singh, Jaya Baghel, S. Shukla, **B.Bhattacharya**, Hee-Woo Rhee and Pramod K. Singh

56. Structural and electrical studies of Fullerene (C60) dispersed polymer electrolyte
Materiali in tehnologije, 48 (2014) 485–490 (*SCI, Impact Factor 0.55*)
Amit Saxena, Pramod Kumar Singh, **B. Bhattacharya**

57. Surface treatment properties of CdS quantum dot-sensitized solar cells

Applied Nanoscience, 4(6) (2014) 745-752 (*SCI Impact Factor ##*)

Abdul Razzaq, J. Y. Lee, B. Bhattacharya and J.-Ki Park

In Year 2015

58. A comprehensive study of chalcogenide Quantum Dot Sensitized Solar Cells with a new solar cell exceeding 1V output

Renewable and Sustainable Energy Reviews 52 (2015)1083-1092*(SCI, Imp. Factor 5.90)*

Karan Surana, R. M. Mehra, **B. Bhattacharya**, A. P. Reddy, Hee-Woo Rhee, Pramod K. Singh

59. Dye-sensitized solar cell comprising polyethyl methacrylate doped with ammonium iodide solid polymer electrolyte
Applied Physics: A 118 (2015) 877-883 (*SCI, Imp. Factor 1.70*)
Vivek Kr Singh, **B.Bhattacharya**, S. Shukla and Pramod K. Singh

60. Synthesis of Graphene Oxide Coated Nafion Membrane for Actuator Application

Ceramics International, 41 (2015) 5093-5099 (*SCI, Imp Factor 2.60)*

Karan Surana, Pramod K. Singh, **B. Bhattacharya**, C. S. Verma and R. M. Mehra

61. New solid polymer electrolyte for dye sensitized solar cells

Materiali in Tehnologije 49 (2015) 123-127 (*SCI, Impact Factor 0.55*)
Vivek K Singh, **B.Bhattacharya**, S. Shukla, Pramod K. Singh

62. Band Gap Tailoring of Ni Doped Ternary Semiconductors for Photovoltaic Applications
Macromolecular Symposia 347(2015) 68-74

Mitali Sahu, Pramod K Singh, S. P. Pandey, **B. Bhattacharya**

63. Nanoporous TiO_2 and ZnO Photoelectrodes: A Comparative Photovoltaic Performance Study

International Journal of Electroactive Materials 3 (2015) 1-5

Nitin A. Jadhav, S. K. Tomar, Pramod K Singh, **B. Bhattacharya**

64. Solid Gellan gum Carbohydrate Polymer Electrolyte for Energy Application

Int. J. Hydrogen Energy, 26 (2015) 5195-5201 (*SCI, Imp. Factor 3.31*)

Rahul Singh, **B. Bhattacharya**, Hee Woo Rhee, Pramod K Singh

In Year 2016

65. Perspectives for Solid Biopolymer Electrolytes in Dye Sensitized Solar Cell and Battery Application

Rahul Singh, **B. Bhattacharya,** A. P. Reddy, Canan Varlikli, Hee-Woo Rhee, P. K. Singh

Renewable and Sustainable Energy Reviews 65 **(2016)**1098-1117 ***(SCI, Imp. Fac. 6.79)***

66. Synthesis, characterization and dye sensitized solar cell fabrication using solid biopolymer electrolyte membrane

*High Performance Polymers 28 (**2016**) 47-54* (*SCI, Imp. Fac. 1.28*)
Rahul Singh, Pramod K. Singh, S. K. Tomar, **B. Bhattacharya**

67. Efficient Perovskite Sensitized Solar Cell using Solid Polymer Electrolyte
Int. J. Hydrogen Energy 41 (2016) 2847-2852 (*SCI, Imp. Fact.3.31*)

Rahul, **B. Bhattacharya**, P.K. Singh, Roja Singh, Z. H. Khan

68. Synthesis, characterization and detailed studies on plasticized poly(ethyl methacrylate): NH_4I polymer electrolyte

Umar M Jibreel, **B. Bhattacharya** and Pramod K. Singh

Advances in Polymer Technology 89 **(**2016**)** 1146-1154 ***(SCI,Imp. Factor 1.04)***

69. Ion irradiation on polymer electrolyte films: comparative study on conductivity
High Performance Polymers, 28 **(2016)** 1059-1063. ***(SCI, Imp. Fac. 1.17*)**
Divya Singh, **Pramod K Singh**, B. Bhattacharya

In Year 2017

70. Carbon Nanotubes using Spray pyrolysis: Recent Scenario

J. Alloys and Compounds 691 **(2017)** 970-982. ***(SCI, Imp.Fac. 3.13)***

Annubhawi Annu, **B. Bhattacharya,** Pramod K Singh, P.K. Shukla and H - W Rhee

71. Effect of crystal and powder of CH_3NH_3I on the $CH_3NH_3PbI_3$ based Perovskite sensitized solar cell

Rahul, Pramod K Singh, Rahul Singh, **B. Bhattacharya,** S. K. Tomar and Zishan H. Khan

Materials Research Bulletin 89 (2017) 292-296. (*Sci, Impact Fac. 2.44*)

72. Electrical, optical and photoelectrochemical studies on Agarose based biopolymer electrolyte towards dye sensitized solar cell application

Measurement 102**(2017)** 214-219 (**Sci, Impact Fac. 2.35**)

Rahul Singh, **B. Bhattacharya,** S. K. Tomar, V. Singh and **Pramod K Singh**

73. Synthesis and Properties of Polyaniline, Poly (o-anisidine) and Poly (aniline-co-o-anisidine) using potassium iodate oxidizing agent

High Performance Polymers 29**(2017)** 266-271. **(*SCI, Imp. Fac. 1.17*)**
Manglik Neetika, Jain Rajni , Pramod K Singh, V. Singh, **B.Bhattacharya** and S. K. Tomar

74. Agarose biopolymer electrolytes: Ion conduction mechanism and dielectric studies

Cellulose Chemistry and Technology. 51 (**2017**) 949-955 **(*SCI, Imp. Fac. 0.73*)**
Rahul Singh, Pramod K Singh, Vijay Singh and **B.Bhattacharya (*SCI, Imp. Fac. 0.83)***

75. Detail electrical and dielectric studies on Carbon-Fly ash composite

Phase Transitions, 90 **(2017)** 236-243**(*SCI, Imp.Fac. 1.06)***

Pratap Singh, **B. Bhattacharya,** Pramod K Singh

76. Electrical & Structural properties of ionic liquid doped gel polymer electrolyte for dual energy storage devices
Rahul Singh, **B. Bhattacharya,** Meenal Gupta, S K Tomar, Vijay Singh and Pramod K Singh

International Journal of Hydrogen Energy 42 **(2017**)14602- 14607. **(*SCI, Imp.Fac. 3.58)***

77. **C**admium zinc sulfide ($CdxZn_{1-x}S$) Films: Effect of annealing

J Mater Sci: Mater Electron 28 (**2017**) 11163–11171 **(*SCI, Imp.Fac. 2.01)***
Animone Kaul Chaku, Pramod K. Singh and **B. Bhattacharya**

78. Electrical and structural properties enhancement in plasticized high Tg Polymers using metal salts
Amit Sachdeva, Rahul Singh, **Bhaskar Bhattacharya,** Pramod K. Singh

Phase Transition 90 **(2017)** 1143-1153 **(*SCI, Imp.Fac. 1.06)***

79. Fabrication of Perovskite Sensitized Solar Cell using PEO Solid Polymer Electrolyte in room environment

Rahul, **B. Bhattacharya,** Pramod K Singh and Zishan H. Khan

Current Nanomaterials 1 **(2016)** 171-175

80. Electrical, structural and thermal studies of carbon nanotubes from natural legume seeds: kala chana
Rachana Ranua, Yatishwar Chauhan, Pramod K Singh, B. Bhattacharya and S. K. Tomar

PHASE TRANSITIONS (2016) doi:10.1080/01411594.2016.1150473

81. Comparative Photovoltaic Study of Lead and Tin based Perovskite Sensitized Solar Cell using Polymer Electrolyte
Rahul, B. Bhattacharya, Pramod K. Singh, Zishan H. Khana, Meenal Gupta
Int. J. Electroactive Mater. 5 (2017) 13-18

<u>In Year 2018</u>

82. New class of lead free perovskite material for low-cost solar cell application
Rahul, **Pramod K Singh**, Rahul Singh, Vijay Singh, B. Bhattacharya and Zishan H. Khan

Materials Research Bulletin 97 **(2018)** 572-577. (***Sci, Impact Fac. 2.44***)

83. Synthesis of active absorber layer by dip-coating method for perovskite solar cell

Rahul Singh, I.M. Noor, **Pramod K. Singh**, B. Bhattacharya, A.K. Arof

Journal of Molecular Structure 1158 (**2018**) 229-233. **(*SCI, Imp.Fac. 1.73)***

84. Charge carriers dynamics in PEO + NaSCN polymer electrolytes

Sandhya Gupta, **Pramod K Singh** and B. Bhattacharya

IONICS 24 **(2018)** 163-167. **(*SCI, Imp.Fac. 2.01)***

85. Effect of corona discharge on cadmium sulphide and lead sulphide films
Anemone Koul Chaku, **Pramod K Singh** and Bhaskar Bhattacharya
Phase Transitions, DOI: https://doi.org/10.1080/01411594.2017.1382702 (***Sci, Impact Fac. 1.04***)

86. Natural and environment favourable Dye Used as Light Sensitizer in Dye Sensitized Solar Cell: A Critical Review
Rahul, Mohd. Bilal Khan, Pramod K. Gupta, M Parvaz, Sultan Ahmad, Pramod K. Singh, Rahul Singh, **B. Bhattacharya** and Zishan H. Khan
Journal of Materials Science & Surface Engineering, 5(8): 722-728

87. Effect of Carbon Nanotubes as dispersoid in Polymer Electrolyte Matrix

Annubhawi Annu, Abhimanyu Singh, Pramod K. Singh and **B.Bhattacharya**

Journal of Materials Science: Materials in Electronics

doi.org/10.1007/s10854-018-9008-1

88. Environment approachable dye sensitized solar cell using abundant natural pigment based dyes with solid polymer electrolyte
Rahul, Pramod K. Singh, **B. Bhattacharya**, Zishan H. Khan
Optik, 165 (2018) 186-194

89. Electrical and Structural property of multi-wall carbon nanotube doped polymer electrolyte for Photo electrochemical device

Amit Sachdeva, Rahul Singh, **Bhaskar Bhattacharya,** Hee-Woo Rhee and Pramod K. Singh

High Performance Polymers DOI: 10.1177/0954008318772013

87. PVDF-HFP and 1-ethyl-3-methylimidazolium thiocyanate–doped polymer electrolyte for efficient supercapacitors
Pankaj Tuhania, Pramod K Singh, B Bhattacharya, Pawan S Dhapola, Shivani Yadav, PK Shukla and Meenal Gupta
High Performance Polymers 1–7 (2018) DOI: 10.1177/0954008318772009

88. Synthesis and Characterization of High-Dielectric-Constant Nanographite–Polyurethane Composite
P. Mishra, B.R. Bhat, **B. Bhattacharya** and R.M. Mehra
JOM, doi.org/10.1007/s11837-018-2877-1

89. Low Viscosity Ionic Liquid Doped Solid Polymer Electrolytes: Electrical, Dielectric and Ion Transport Studies
Sandhya Gupta, Pramod K. Singh and B. Bhattacharya

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90. Conductivity and Dielectric studies of Li^{3+} irradiated PVP based Polymer Electrolytes
Divya Singh, D. Kanjilal, G.V.S. Laxmi, Pramod K Singh, S K Tomar and **Bhaskar Bhattacharya**
High Performance Polymers DOI: 10.1177/0954008318780494

91. Quantum Dot Solar Cells with size tuned CdSe QDs exhibiting 1.51V
Karan Surana, R. M. Mehra, **Bhaskar Bhattacharya**
Materials Today: Proceedings 5 (2018) 9108–9113

92. Progress, status and prospects of nonporous, heteroatom doped carbons for supercapacitors and other electrochemical applications
Meenal Gupta, P. K. Singh, **B. Bhattacharya**, Y M Shulga, N Y Shulga, Yogesh Kumar
Communicated to Solid State Ionics.

Book/Chapter

Published:3

1. Chapter topic "Present scenario of solid state photoelectrochemical solar cell and dye sensitized solar cell using PEO-based polymer electrolytes"
Nova Science Publishers, Inc., USA (2011)
Pramod K.Singh, **B. Bhattacharya**

2. Studies of Mixed Conducting Polymer Electrolytes
Lambert Academic Publishing (ISBN-13 : 978- 3659928703)
Amit Saxena and **B. Bhattacharya**

3. Recent Scenario of Solid Biopolymer Electrolytes Based Dye sensitized solar cells
In "Nanomaterials in energy devices : energy storage derivatives and emerging solar cells", Ed. H.K. Jun, CRC Press (Taylor & Francis Group, USA) pp. 7 (2018)
Rahul Singh, Pramod K.Singh, **B. Bhattacharya**

As Guest Editor : 3

1. High Performance Polymers (Guest Editor)

2. Macromolecular Symposia (Guest Editor)

3. Indian Journal of Material Science, Hindawi

Patent Information :

1. Jung-Ki Park, J. Y.Lee, **Bhaskar Bhattacharya**, Joon-Yong Sohn, Young-Chang Nho

   "Graft mesoporous separator with anion recepting compounds containing boron, method for preparation of grafted mesoporous separator with anion compounds containing and lithium secondary batteries using the same", KR 2008-0088888

2. Park Jung-Ki, Lee Jun Young, **Bhakar Bhattacharya**, Ryou Myeong Hyeon Han Y.-Dal, Lee Jae Nam, Nho Young Chang and Sun Jun-Young
   "Graft mesoporous separator with anion recepting compounds, a method for preparation thereof and lithium secondary batteries using the same", 10-1013534

Awards and Achievements:

- **Silver Medal** for contribution in Materials Science **,** ISCAS, 2015
- **Young Teachers Career Award** (AICTE, New Delhi, India) 2000.
- **Certificate of Merit** for Research Contributions, Physics Department, B.H.U., India, 1998.
- **Young Scientist Award** for Best Paper Presentation by ISSIS at NERIST, Itanagar, India, 1998.
- **Best Poster award in** International Conference on Solid State Ionics held at Singapore, 1995

Memberships of professional bodies

- Life Member - Indian Physics Association, BARC, Mumbai.
- Life Member - Indian Society for Technical Education, New Delhi.
- Life Member - Indian Solid State Ionics Society, Varanasi.
- Life Member - Indian Society for Radiation and Photochemical Sciences, BARC, Mumbai.

- Active Member - Society for Advancement of Electrochemical Science and Technology, Karaikudi.
- International advisory committee- High Performance Polymers Journal
- Advisory board member- Invertis Journal of Renewable Energy

Referee for the International Journals

- Physica Status Solidi (b)

- Ferroelectrics

- Electrochemistry Communications

- Polymer Engineering and Science

- Journal of composites and Thermoplastics

- Ionics

- Electrochimica Acta

- Journal of Physics D: Applied Physic

- Journal of Applied Polymer Science

- High performance polymer

Member of Advisory board for the International Journals

-High Performance Polymer

-Invertis Journal of Renewable energy

- Journal of Scientific and Technical Research

Projects Completed

1. Development of nanoporous TiO2 electrode and modified solid polymer electrolytes for Dye Sensitized Solar cells (DSSC)
   Principal Investigator DST (18.14 lakh)

2. Development Of High Dielectric Constant Polymer Composite For Pulsed Power System
   Principal Investigator DRDO (MTRDC) (7.0 lakh)

3. Effect of Swift Ion Beam on Polymer Electrolyte Films
   Principal Investigator DST (22.58 lakh)

4. Development of large area dye sensitized solar cells (DSSC) using modified polymer electrolytes
   Principal Investigator DST (20.3 lakh)