

DR. ABHIJIT BANDYOPADHYAY

M.Tech, Ph.D., FICER



DEPARTMENT OF POLYMER SCIENCE AND TECHNOLOGY

UNIVERSITY OF CALCUTTA, India

Email: **abpoly@caluniv.ac.in; abhijitbandyopadhyay@yahoo.co.in**

Phone: (Office) 033-2350-1397/6396/6387/8386, Extn: 288

033-2399-1116 (Residence); 919433186957 (Mobile)

TECHNICAL DIRECTOR

South Asian Polymers & Rubber Park (SARPOL), West Bengal, India

Date of Birth:

12.12.1975

Experience

Institute	From	To	Position
Department of Polymer Science & Technology, University of Calcutta	14.03.2005	02.05.2007	Lecturer on Contract
Rubber Technology Centre, Indian Institute of Technology, Kharagpur	03.05.2007	17.11.2008	Assistant Professor
Department of Polymer Science & Technology, University of Calcutta	18.11.2008	Till Date	Assistant Professor

Academic Qualification:

Name of the Examinations	School/ Board/University	Year of Passing	Percentage of Marks	Rank
West Bengal Board of Secondary Education	West Bengal Board	1992	73.8	---
West Bengal Council of Higher Secondary Education	West Bengal Council	1994	75.3	136 th in the State
Graduation with Honours in Chemistry	University of Calcutta	1997	61.4	134 th in the State
B.Tech in Polymer Science & Technology	University of Calcutta	2000	79.5	1 st
M.Tech in Polymer Science & Technology	University of Calcutta	2002	83.4	3 rd
Doctorate	Indian Institute of Technology, Kharagpur	2005	---	---

Professional Recognition and Awards Received:

1. **Ranked Ist** in B.Tech. in 2000.
2. **National Scholarships** for B.Sc. in 1997.
3. **National Scholarships** for Higher Secondary in 1994.
4. **Second prize winner** in the National Level Young Scientist Essay Competition at IIT. Kharagpur in 2003.
5. Recipient of the “**Young Scientist 2005**” award from Materials Research Society of India, Calcutta Chapter.
6. Recipient of the “**Young Scientist Award**” from Department of Science and Technology, Govt. of India, 2009.
7. Recipient of “**Career Award for Young Teachers**” from All India Council for Technical Education, Govt. of India, 2010.

Fellowship/Membership

1. Elected fellow of the **International Congress of Environmental Research, India**
2. Life member of **Society for Polymer Science, India**
3. Life Member, **Indian Rubber Institute**
4. Managing Committee Member, Indian Plastic Institute, Kolkata Branch

Editorial Board Member of International Journals

1. Topological & Supramolecular Polymer Science, Columbia International Publication, USA
2. Advances in Chemical Engineering & Process Technology, USA
3. SciFed Pharmaceutical Journals

Sponsored Projects:

1. **A novel approach of modification of poly (ethylene-co-octene) elastomer using polar polymers through interpenetrating network**

Department of Science and Technology, Govt. of India (2009) (13 Lakhs)

2. **Development of multiwalled carbon nanotube based natural polymer composites for advanced application**

Centre for Research in Nanoscience and Nanotechnology, University of Calcutta (2010) (2 Lakhs)

3. **Synthesis and Characterization of Engage/ Clay Organic-Inorganic Hybrid Nanocomposites**

All India Council for Technical Education, Govt. of India (2010) (10.5 Lakhs)

4. **Development of Poly (ethylene-co-octene) Based Light Weight Cable Insulation Compounds for Automobile Industries**

TEQIP Phase II, University of Calcutta (2013) (1 Lakh).

List of International Publications by Year

I₁₀ Index: 41

H Index: 22

Total Citation: 1520

Publication Year: 2019 (1 publication)

1. A polyester with hyperbranched architecture as potential nano-grade antibiotics: An in-vitro study
*Srijoni Sengupta, Satish Kumar, Tamalika Das, **Abhijit Bandyopadhyay***, Materials Science & Engineering C (2019) Accepted. **Impact Factor: 5.02**

Publication Year: 2018 (3 Publications)

1. Flocculation of aqueous kaolin suspension using a biodegradable flocculant system of poly (vinyl alcohol)-*Acacia nilotica* gum blends

*Tanbir Nasim, Abhijit Pal, **Abhijit Bandyopadhyay***, *Applied Clay Science* (2018) 152, 83-92. **Impact Factor: 3.101**
2. Influence of a biobased reagent on properties of industrial resin for printing ink application vis-à-vis comparison with standard commercial resin

*Mahuya Biswas, Abhijit Pal, Munmun Dey, Ayan Dey, **Abhijit Bandyopadhyay***, *Polymers From Renewable Resources* (2018) 9, 59-73. **Impact Factor: <1.**
3. Photophysical and Electrochemical Properties of Oligothiophene in Non-Polymeric and Polymeric Solvents

*Soumen Sardar, Riya Koley, Uttam Kumar Ghorai, Abhijit Pal, Srijoni Sengupta, Indranil Roy, **Abhijit Bandyopadhyay***
Journal of Molecular Structure (2018) 1168, 187-194. **Impact Factor: 2.001**

Publication Year: 2017 (5 Publications)

1. Adsorption of soluble Pb(II) by a photocrosslinked polysaccharide hybrid: A swelling-adsorption correlation study

- Abhijit Pal, Kunal Majumder, Srijoni Sengupta, Tamalika Das and Abhijit Bandyopadhyay. Carbohydrate Polymers* 177 (2017) 144-155. **Impact Factor: 4.811**
2. Copolymers from Methyl Methacrylate and Butyl Acrylate with Hyperbranched Architecture
Srijoni Sengupta, Tamalika Das, Uttam K. Ghorai and Abhijit Bandyopadhyay, J. Applied Polymer Science (2017) DOI: 10.1002/app.45356 **Impact Factor: 1.86**
 3. In-vitro anti-cancer activity of shape controlled silver nanoparticles (AgNPs) in various organ specific cell lines
Sabina Yeasmin, Hemanta Kumar Datta, Sujata Chaudhuri, Debasish Malik and Abhijit Bandyopadhyay Journal of Molecular Liquids (2017) 242, 757-766. **Impact Factor: 2.7**
 4. Exploration of carboxymethyl guar gum grafted hyperbranched poly (acrylic acid) as a scaffold for silver nanoparticles for ultrafast and selective sensing of Hg (ii)
Tamalika Das, Srijoni Sengupta, Ayan Dey, Abhijit Pal, Suparna Saha, Abhijit Bandyopadhyay, New Journal of Chemistry (2017) 41, 14379-14389. **Impact factor: 3.2**
 5. Application of the resin derived from the native *Euphorbia Caducifolia* Haines as Multifunctional additive (MFA) in filled Natural Rubber (NR) compounds
Sanjay K. Bhattacharyya, Bhabani S. Parmar, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay Rubber Chemistry and Technology 90 (2016) 429-444 **Impact Factor: 1.74**

Publication Year: 2016 (5 publications)

6. Surfactant mediated synthesis of poly (acrylic acid) grafted xanthan gum and its efficient role in adsorption of soluble inorganic mercury from water.
Abhijit Pal, Kunal Majumder and Abhijit Bandyopadhyay, Carbohydrate Polymers (2016) 152, 41-50. **Impact Factor: 4.811**
7. In-situ synthesis of polyacrylate grafted carboxymethyl guar gum-carbon nanotube membranes for potential application in controlled drug delivery

Arindam Giri¹, Tridib Bhunia², Abhijit Pal¹, Luna Goswami and Abhijit Bandyopadhyay

European Polymer Journal (2016) 74, 13-25. **Impact Factor: 3.00**

8. A noble additive cum compatibilizer for dispersion of nanoclay into ethylene octene copolymer

Soumya Mondal, Amit Das, Joyeeta Bandyopadhyay, Suprakas Sinha Ray, Gert Heinrich and Abhijit Bandyopadhyay **Applied Clay Science** (2016) 126, 41-49. **Impact Factor: 2.5**

9. Influence of hydrodynamic size and zeta potential of a novel polyelectrolyte poly (acrylic acid) grafted guar gum for adsorption of Pb (II) from acidic waste water

Abhijit Pal, Arindam Giri and Abhijit Bandyopadhyay **J. Environmental Chemical Engineering** (2016) 4, 1731-1742.

10. Derivation of a new compounding ingredient for rubber from waste marble powder and study on its suitability in an inner liner compound of a tubeless tyre

Mridul Dasgupta, Saikat Dasgupta, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay **Progress in Rubber, Plastics and Recycling Technology** (2015) 32, 55-72. **Impact Factor: < 1.0**

Publication Year: 2015 (7 publications)

1. Influence of Blend of Guar Gum and Poly (vinyl alcohol) on Long Term Stability And Antibacterial And Antioxidant Efficacies of Silver Nanoparticles

Tamalika Das, Sabina Yeasmin, Somanjana Khatua, Krishnendu Acharya and Abhijit Bandyopadhyay **RSC Advances** 5 (2015) 54059-54069. **Impact factor: 3.7**

2. Green Synthesis of Silver Nano/Micro Particles Using TKP and PVA and Its Anticancer Activity

Sabina Yeasmin, Debasis Malik, Tamalika Das & Abhijit Bandyopadhyay **RSC Advances** 5 (2015) 39992-39999. **Impact Factor: 3.7**

3. Fabrication of acrylic acid grafted guar gum-multiwalled carbon nanotube hydrophobic membranes for transdermal drug delivery

Arindam Giri, Tridib Bhunia, Samir Acharya, Luna Goswami, Asit Baran Panda & Abhijit Bandyopadhyay RSC Advances 5 (2015) 41736-41744. In Press. **Impact Factor: 3.7**

4. Analysis of autohesion and physico-mechanical properties (multi-functional behavior) of the coagulum from the latex of *Euphorbia caducifolia* Haines vis-à-vis comparison against synthetic resins in Natural Rubber compounds

Sanjay K. Bhattacharyya, Bhabani S. Parmar, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay Rubber Chemistry & Technology 88 (2015) 421-436. **Impact Factor: 1.12**

5. Statistically Designed High and Low Methyl Acrylate (MA) Containing EMA-Ethylene-Octene Copolymer Double Network Hybrids: Interesting Contrast in Physico-mechanical, Rheological and Electrical Properties

Rumiya Pervin, Soumya Mondal, Luna Goswami, V. Vijayabaskar and

Abhijit Bandyopadhyay Polymers & Polymer Composites 23 (2015) 65. **Impact Factor: <1.0**

6. Modification of POE with EVA in Melt Through Statistical Approach- Formation of Double Network Hybrids

Rumiya Pervin, Luna Goswami, V. Vijayabaskar and Abhijit Bandyopadhyay, Polymers and Polymer Composites 23 2015 435-442. **Impact Factor: < 1.0.**

7. Sequential amphiphilic and pH responsive hyperbranched copolymer: influence of hyperbranching/ pendant groups on reversible self assembling from polymersomes to aggregates and usefulness in waste water treatment

Tamalika Das, Srijoni Sengupta, Ayan Dey, Uttam K. Ghora and Abhijit Bandyopadhyay RSC Advances 5 (2015) 102932-102941 **Impact Factor: 3.70**

Publication Year: 2014 (5 publications)

1. A carboxymethyl tamarind polysaccharide matrix for adhesion and growth of osteoclast-precursor cells

Sridhar Sanyasi, Asutosh Kumar, Chandan Goswami, Abhijit Bandyopadhyay and Luna Goswami, Carbohydrate Polymers 101 (2014) 1033-1042. **Impact Factor: 3.68**

2. A Transdermal Device From 2- Hydroxy Ethyl Methacrylate Grafted Carboxymethyl Guar Gum- Multiwalled Carbon Nanotube Composites

Arindam Giri, Tridib Bhunia, Abhijit Pal, Samir Mishra, Luna Goswami, Asit B. Panda and Abhijit Bandyopadhyay RSC Adv., 26 (2014) 13546 - 13556, **Impact Factor: 3.7**

3. Polyelectrolytic Aqueous Guar Gum for Adsorptive Separation of Soluble Pb(II) From Contaminated Water

Abhijit Pal, Tanbir Nasim, Arindam Giri and Abhijit Bandyopadhyay Carbohydrate Polymers 110 (2014) 224-230. **Impact Factor: 3.68**

The content of this paper has been used to make story in Nature India and a Marathi Journal

4. Exploring Polyelectrolytic Features of the Exudate From Native *Acacia nilotica* for Flocculating Aqueous Kaolin Suspension

Tanbir Nasim, Abhijit Pal, Luna Goswami, Asit B. Panda and Abhijit Bandyopadhyay Separation and Purification Technology 131 (2014) 50-59. **Impact Factor: 2.96**

5. A new silica-rich material from waste fly ash – Generation, characterisation and study of its effectiveness as a filler for rubber compounds

Mridul Dasgupta, Saikat Das Gupta, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay, Polymers and Polymer Composites 22 (2014) 495-506. **Impact Factor: <1.0.**

Publication Year: 2013 (10 publications)

1. A transdermal diltiazem hydrochloride delivery device using multi-walled carbon nanotube/poly(vinyl alcohol) composites

Tridib Bhunia, Arindam Giri, Tanbir Nasim, Dipankar Chattopadhyay and Abhijit Bandyopadhyay, Carbon 52 (2013) 305-315. **Impact Factor: 5.236**

2. Acrylic acid grafted guar gum-nanosilica membranes for transdermal diclofenac delivery
A. Giri, L. Goswami, S. Mishra, A. B. Panda, S. Pal and A. Bandyopadhyay, Carbohydrate Polymers 91 (2013) 492-501. **Impact Factor: 3.68**

The content of this manuscript was selected to make story in Nature India

3. Uniquely different PVA-xanthan gum irradiated membranes as transdermal diltiazem delivery device.
Tridib Bhunia, Arindam Giri, Tanbir Nasim and Abhijit Bandyopadhyay, Carbohydrate Polymers 95 (2013) 252-261. **Impact Factor: 3.68**
4. Guar gum and guar gum-oligomeric poly(vinyl alcohol) blends as novel flocculants for kaolinated waste water
Tanbir Nasim, Asit K. Panda and Abhijit Bandyopadhyay, International J. Biological Macromolecules 58 (2013) 140-147. **Impact Factor: 2.5**
5. Effect of Fly Ash as Filler- A Comprehensive Study of the Vulcanizate Properties of Styrene Butadiene Compounds
M. Dasgupta, S. Kar, S. Dasgupta, R. Mukhopadhyay and A. Bandyopadhyay, Progress in Rubber Plastics and Recycling Technology, 29 (2013) 123-139. **Impact Factor: < 1**
6. Physical, mechanical and transdermal Diltiazem release analysis of nanosilica tailored various poly (vinyl alcohol) membranes
Tridib Bhunia, Arindam Giri, Tanbir Nasim, Dipankar Chattopadhyay and Abhijit Bandyopadhyay, J. Applied Polymer Science, 130 (2013) 2076-2086. **Impact Factor: 1.212**
7. Microcrystalline Cellulose (MCC) as Green Multifunctional Additive (MFA) in an Emulsion Styrene Butadiene Rubber (E-SBR) Based High Silica Compound
Sanjay Kumar Bhattacharyya, Abhijit Chakraborty, Soumen Ghosh, Saikat Dasgupta, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay. Plastics Rubber & Composites: Macromolecular Engineering 42 (2013) 393-400. **Impact Factor: <1.0**
8. Technical analysis of *Euphorbia caducifolia* Haines latex of South-East Asian Origin- Part I

Sanjay K. Bhattacharyya, Saptarshi Kar, Sugata Chakraborty, Saikat Dasgupta, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay. Polymers from Renewable Resources 4 (2013) 133-151 **Impact Factor: <1.0.**

9. Unique Multifunctional Behaviour of Ash from the Latex of *Euphorbia Caducifolia* Haines in Chlorobutyl Rubber (CIIR) Compound for a Truck Inner-Tube application- Part II

Sanjay K. Bhattacharyya, Saptarshi Kar, Sugata Chakraborty, Saikat Dasgupta, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay. Polymers from Renewable Resources 4 (2013) 169-183 **Impact Factor: <1.0.**

10. Maleic anhydride grafted atactic polypropylene as exciting new compatibilizer for poly (ethylene-co-octene)-organically modified clay nanocomposites: Investigations on mechanical and rheological properties

Anirban Bhattacharya, Soumya Mondal and Abhijit Bandyopadhyay, Industrial Engineering and Chemistry Research 52 (2013) 14143-14153, **Impact Factor: 2.02**

Publication Year: 2012 (8 publications)

1. Shellac as Multifunctional Additive (MFA) in a Typical Truck Tyre Sidewall Compound

Sanjay Kumar Bhattacharyya, Sugata Chakraborty, Giriraj Sharma, Pankaj Kumawat, Saikat Dasgupta, Samar Bandyopadhyay, Rabindra Mukhopadhyay and Abhijit Bandyopadhyay, Progress in Plastics and Rubber Recycling, 28 (2012) 147-162 **Impact Factor: <1**

2. Exploring Microcrystalline Cellulose (MCC) as Green Multifunctional Additive (MFA) in a Typical Solution SBR (S-SBR) Based Tread Compound

S. K. Bhattacharyya, A. Chakrabarty, S. Ghosh, S. Dasgupta, R. Mukhopadhyay and A. Bandyopadhyay, Industrial Engineering and Chemistry Research 51 (2012) 10649-10658. **Impact Factor: 2.02**

3. Introducing different poly (vinyl alcohol)s as new flocculant for kaolinated waste water
T. Nasim and A. Bandyopadhyay, Separation and Purification Technology 88 (2012) 87-94. **Impact Factor: 2.921**

4. Tailoring carboxymethyl guar gum hydrogel with nanosilica for sustained transdermal release of diclofenac sodium

A. Giri, T. Ghosh, A. B. Panda, S. Pal and A. Bandyopadhyay, Carbohydrate Polymers 87 (2012) 1532-1538. **Impact Factor: 3.68**

5. Optimization of engineering and solvent resistive behavior of high vinyl acetate content EVA modified poly (ethylene-co-1-octene) interpenetrating network blends using Taguchi orthogonal array

Rumiya Pervin, Luna Goswami, V. Vijayabaskar and A. Bandyopadhyay, J. Appl. Polym. Sci. 126 (2012) 1993-2003. **Impact Factor: 1.212**

6. Interesting correlation between structure, physico-mechanical, swelling and sustained transdermal release behavior of diltiazem hydrochloride in various poly (vinyl alcohol) hydrogel membranes

Tridib Bhunia, Manas Bhowmik, Dipankar Chattopadhyay and Abhijit Bandyopadhyay, J. Appl. Polym. Sci. 124 (2012) E177-E189. **Impact Factor: 1.212**

The manuscript was selected for a special thematic issue on Membrane Science published by the Journal

7. Plasticizing polystyrene with waste leather buffing dust- A drive towards waste-polymer composite synthesis.

G. C. Basak, L. Goswami, B. Chattopadhyay and A. Bandyopadhyay, Polymers and Polymer Composites 20 (2012) 279-288. **Impact Factor: < 1**

8. The role of tackifiers on the auto-adhesion behavior of EPDM rubber

G. C. Basak, A. Bandyopadhyay and A. K. Bhowmick, J. Mater. Sci. 47 (2012) 3166-3176. **Impact Factor: 2.20**

Publication Year: 2011 (8 publications)

1. Polymer hydrogel from carboxymethyl guar gum and in-situ functionalized multiwalled carbon nanotube for sustained transdermal release of diclofenac sodium

A. Giri, M. Bhowmik, S. Pal and A. Bandyopadhyay, Int. J. Biological Macromolecules 49 (2011) 885– 893. **Impact Factor: 2.46**

2. Sustained trans-dermal release of diltiazem hydrochloride through electron beam irradiated different PVA hydrogels

Tridib Bhunia, Luna Goswami, Dipankar Chattopadhyay and Abhijit Bandyopadhyay, Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 269 (2011) 1822. **Impact Factor: 1.20**

3. Gel viscosity influenced by nanosilica phase morphology in high and low molecular weights PVA-ex-situ silica hybrids

Tridib Bhunia, Dipankar Chattopadhyay and Abhijit Bandyopadhyay, J. Sol Gel Sci. Technol 59 (2011) 260-268. **Impact Factor: 1.60**

4. Physico-mechanical Studies And Solvent Resistance Analysis of Melt-Blended Novel Ethylene-1-Octene Elastomer And Ethylene-co-Acrylic Acid Interpenetrating Network Hybrids

B. Gupta, D. Banerjee, L. Goswami and A. Bandyopadhyay, J. Appl. Polym. Sci., 120 (2011) 3401-3409. **Impact Factor: 1.212**

5. Swelling De-swelling Studies after Freeze-Thaw Treatment of Nano Silica Reinforced Poly(vinyl alcohol) Based Organic-Inorganic Hybrid Hydrogel.

T. Bhunia, L. Goswami, D. Chattopadhyay and A. Bandyopadhyay, Int. J. Nanoscience, 10 (2011) 1087-1090. **Impact Factor: < 1**

6. In-situ Silica Incorporated Carboxymethyl Tamarind: Development and Application of a Novel Hybrid Nanocomposite

S. Pal, M. K. Ghorai, A. Giri, A. Bandyopadhyay, A. B. Panda. Int. J. Biological Macromolecules 49 (2011) 1152-1159. **Impact Factor: 2.46**

7. Surface Modification of Argon/oxygen Plasma Treated Vulcanized Ethylene-Propylene Diene Polymethylene Surfaces for Improved Adhesion with Natural Rubber.

G. C. Basak, A. Bandyopadhyay, S. Neogi and A. K. Bhowmick, Applied Surface Science 257 (2011) 2891-2904. **Impact Factor: 2.103**

8. Influence of Nano Clay on Adhesion of EPDM Vulcanizate.

G. C. Basak, A. Bandyopadhyay and A. K. Bhowmick, Int. J. Adhesion Adhesives 31 (2011) 209-219. **Impact Factor: 2.170**

Publication Year: 2010 (5 publications)

1. Nanoclay Distribution and Its Influence on the Mechanical Properties of Rubber Blends
A. Bandyopadhyay, S. Pradhan, V. Thakur, A. K. Bhowmick, J. Appl. Polym. Sci. 115 (2) (2010), 1237-1246. **Impact Factor: 1.212**
2. Elegant Way of Strengthening Polymer-Polymer Interface using Nanoclay.
G. C. Basak, K. Dinesh Kumar, A. Bandyopadhyay and A. K. Bhowmick, ACS Applied Materials and Interfaces 2 (2010) 2933-2943. **Impact Factor: 4.525**
3. Effect of tackifier compatibility and blend viscoelasticity on peel strength behavior of vulcanized EPDM rubber co-cured with unvulcanized rubber
G. C. Basak, A. Bandyopadhyay and A. K. Bhowmick, Int. J. Adhesion Adhesives 30 (2010) 489-499. **Impact Factor: 2.170**
4. Characterization of EPDM vulcanizates modified with gamma irradiation and trichloroisocyanuric acid and their adhesion behavior with natural rubber
G. C. Basak, A. Bandyopadhyay, Y. K. Bharadwaj, S. K. Sabharwal, A. K. Bhowmick, J. of Adhesion, 86 (2010) 306-334. **Impact Factor: 1.310**
5. Some Physico-mechanical Investigations on Near-Transparent High Hydrolyzed Grade Poly (vinyl alcohol) Gels Impregnated with Surface-modified Waste Fly-ash.
A. Saha and A. Bandyopadhyay, J. Elastomer and Plastics, 42 (2010) 433-442. **Impact Factor: < 1**

Publication Year: 2009 (3 publications)

1. Adhesion of Vulcanized Rubber Surfaces: Characterization of Unmodified and Electron Beam Modified EPDM Surfaces and Their Co-Vulcanization with Natural Rubber
G. C. Basak, A. Bandyopadhyay, Y. K. Bharadwaj, S. K. Sabharwal, A. K. Bhowmick, J. Adhesion Sci. Technol, 23 (2009) 1763-1786. **Impact Factor: < 1.**
2. Ionomeric Modification of Metallocene Based Polyolefinic Elastomers and its Influence on Physico-mechanical Properties: Effect of Crystallinity and Pendant Chain Length

A. Biswas, A. **Bandyopadhyay**, N. K. Singha, A. K. Bhowmick, **J. Appl. Polym. Sci.** 114 (2009) 3906-3914. **Impact Factor: 1.212**

3. Ionomeric Modification of Metallocene Based Polyolefinic Elastomers With Varied Pendant Chain Length and its Influence on Physico-mechanical Properties

A. Biswas, A. **Bandyopadhyay**, N. K. Singha, A. K. Bhowmick, **J. Materials Science** 44 (2009), 3125-3134. **Impact Factor: 2.2**

Publication Year: 2008 (2 publications)

1. New Generation Layered Nanocomposites Synthesized From Ethylene-co-Vinyl Acetate and Naturally Occurring Graphite

J. J. George, A. **Bandyopadhyay**, A. K. Bhowmick **J. Appl. Polym. Sci.** 108 (2008) 1603-1616. **Impact Factor: 1.212**

2. Sulfonation of Metallocene Based Polyolefin Elastomers and Its Influence on Physicomechanical Properties: Effect of Reaction Parameters, Styrene Grafting and Pendant Chain Length

A. Biswas, A. **Bandyopadhyay**, N. K. Singha and A. K. Bhowmick **J. Polymer Science Part A: Polymer Chemistry** 46 (2008) 8023-8040. **Impact Factor: 3.92**

Publication Year: 2007 (3 publications)

1. Studies on Photocatalytic Degradation of Atactic Polystyrene

A. **Bandyopadhyay** and G. C. Basak, **Materials Science Technol** 23 (2007) 307. **Impact Factor: < 1**

2. Chemical Modification of Metallocene based Polyolefin Elastomers by Acrylic Acid and its Influence on Physico-Mechanical Properties: Effect of Reaction Parameters, Crystallinity and Pendant Chain Length

A. Biswas, A. **Bandyopadhyay**, N. K. Singha, A. K. Bhowmick **J. Polym. Sci. Part A: Polym. Chem.** 45 (2007) 5529-5540. **Impact Factor: 3.919**

3. Chemical Modification of Metallocene Based Polyethylene-Octene Elastomer Through Solution Grafting of Acrylic Acid and its Effect on the Physico-Mechanical Properties

A. Biswas, A. **Bandyopadhyay**, N. K. Singha, A. K. Bhowmick **J. Appl. Polym. Sci.** 105 (2007) 3409-3417. **Impact Factor: 1.212**

Publication Year: 2006 (8 publications)

1. Low and High Temperature Degradation of Polymer/ *In-situ* Silica Hybrid Nanocomposites
A. **Bandyopadhyay** and A. K. Bhowmick, **Plastics Rubber Composites: Macromolecular Eng** 35 (2006) 210. **Impact Factor: < 1**
2. Factors Influencing the Structure and Properties of Nanocomposites.
A. **Bandyopadhyay** and A. K. Bhowmick, **J. Polymer Engineering** 26 (2006) 821. **Impact Factor: < 1**
3. Synthesis, Characterization and Properties of Clay and Silica Based Rubber Nanocomposites.
A. **Bandyopadhyay**, M. Maiti and A. K. Bhowmick, **Materials Science Technol.** 22 (2006) 818-828. **Impact Factor: < 1**
4. Effect of Acrylic Copolymer and Terpolymer Compositions on the Properties of *In-situ* Polymer/ Silica Hybrid Nanocomposites.
S. Patel, A. **Bandyopadhyay**, V. Vijaybaskar and A.K. Bhowmick, **J. Mater Sci.** 41 (2006) 927-936. **Impact Factor: 2.20**
5. Synthesis and Properties of Nanocomposite Adhesives.
S. Patel, A. **Bandyopadhyay**, A. Ganguly and A.K. Bhowmick, **J. Adhesion Sci. and Technol.** 20 (2006) 371. **Impact Factor: < 1**
6. Preparation and Properties of New *In-situ* Acrylic Copolymer/ Terpolymer- Clay Hybrid Nanocomposites.
S. Patel, A. **Bandyopadhyay**, V. Vijaybaskar and A.K. Bhowmick, **Rubber Chem. Technol.** 79 (2006) 820-834. **Impact Factor: < 1**
7. Preparation and Characterization of Nanocomposites Based on Thermoplastic Elastomers from Rubber-Plastic Blends
M. Maity, A. **Bandyopadhyay** and A.K. Bhowmick, **J. Appl. Polym. Sci.** 99 (2006) 1645-1656. **Impact Factor: 1.212**

8. Structure-Property Relationship in Sol-Gel Derived Polymer/ Silica Hybrid Nanocomposites Prepared at Various pH.
A. **Bandyopadhyay**, M. De Sarkar and A.K. Bhowmick, J. Materials Science 41 (2006) 5981-5993. **Impact Factor: 2.20**

Publication Year: 2005 (8 publications)

1. Effect of Microstructure of Acrylic Copolymer/ Terpolymer on the Properties of Silica Based Nanocomposites Prepared by Sol-Gel Technique.
S. Patel, A. **Bandyopadhyay**, V. Vijaybaskar and A.K. Bhowmick, **Polymer** 46 (2005) 8079-8090. **Impact Factor: 4.009**
2. Polyamide-6,6/ *In-situ* Silica Hybrid Nanocomposites by Sol-Gel Technique: Synthesis, Characterizations and Properties
R. Sengupta, A. **Bandyopadhyay**, S. Sabharwal, T.K. Chaki and A.K. Bhowmick, **Polymer** 46 (2005) 3343. **Impact Factor: 4.009**
3. Polymer-Filler Interactions in Sol-Gel Derived Polymer-Silica Hybrid Nanocomposites.
A. **Bandyopadhyay**, M. De Sarkar and A. K. Bhowmick, **J. Polym. Sci. Part B: Polym. Phys.** 43 (2005) 2399-2412. **Impact Factor: 1.54**
4. Poly (vinyl alcohol) /Silica Hybrid Nanocomposites by Sol-Gel Technique: Synthesis and Properties.
A. **Bandyopadhyay**, M. De Sarkar and A. K. Bhowmick, **J. Materials Science** 40 (2005) 5233. **Impact Factor: 2.20**
5. Epoxidised Natural Rubber/ Silica Hybrid Nanocomposites by Sol-Gel Technique: Effect of Reactants on the Structure and Properties
A. **Bandyopadhyay**, M. De Sarkar and A. K. Bhowmick, **J. Materials Science** 40 (2005) 53-62. **Impact Factor: 2.20**
6. Effect of Reaction Parameters on the Structure and Properties of Acrylic Rubber/ Silica Hybrid Nanocomposites Prepared by Sol-Gel Technique
A. **Bandyopadhyay**, M. De Sarkar and A. K. Bhowmick, **J. Appl. Polym. Sci.** 95 (2005) 1418-1429. **Impact Factor: 1.212**
7. Rheological Behavior of Hybrid Rubber Nanocomposites.

A. Bandyopadhyay, M. De Sarkar and A.K. Bhowmick, Rubber Chem. Technol 78 (2005) 806. **Impact Factor: < 1**

8. Solution Rheology of Poly (vinyl alcohol)/ Silica Hybrid Nanocomposites

A. Bandyopadhyay, M. De Sarkar and A. K. Bhowmick, Polymers and Polymer Composites 13 (2005) 429. **Impact Factor: < 1**

Publication Year: 2004 (2 publications)

1. Synthesis and Characterization of Acrylic Rubber/ Silica Organic-Inorganic Hybrid Composites Prepared by Sol-Gel Technique

A. Bandyopadhyay, A. K. Bhowmick and M. De Sarkar, J. Appl. Polym. Sci. 93 (2004) 2579. **Impact Factor: 1.212**

2. Epoxidised Natural Rubber /Silica Organic-Inorganic Nanoscale Hybrid Composites Prepared By Sol-Gel Technique.

A. Bandyopadhyay, M. De Sarkar and A. K. Bhowmick, Rubber Chem. Technol. 77 (2004) 830. **Impact Factor: < 1**

Publication Year: 2003 (1 publication)

1. Mechanical, Physical and Morphological Studies on Polypropylene-g-Maleic anhydride/ Starch and Polypropylene-g-Maleic anhydride/ Gelatin Blends on Short Term Biodegradation

A. Bandyopadhyay and D. Chakraborty, J. Polym. Mat. 20 (2003) 293. **Impact Factor: < 1 Journal ISSN: 0973-8622**

Invited Talks

1. Polymer hydrogels

Invited Talk, INSPIRE Internship Program by Department of Science and Technology, Govt. of India, KIIT University, Bhubneswar, 2010.

2. Latex from *Euphorbia Caducifolia* Haines as Potential Green Additive for Various Rubber Compounds

Invited Talk at IISER Kolkata, Symposium on Polymer Science, 10th December 2011, Kolkata, India.

3. Green Process Aid from *Euphorbia Caducifolia* Haines Latex for Natural Rubber Compounds

Invited Talk at International Conference on Advances in Polymeric Materials, APM 2012, 10-12th February, 2012, CIPET Ahmedabad, India.

4. Autohesive tack promotion in EPDM using nanoclay

Invited talk at 1st TAF-UJN Conference at Jinan, 3-5th March, 2012, China.

5. Using MCC as silica replacement in SSBR based PCR Tread Compound

Invited Talk at National Conference on Polymer & Rubber for 21st Century: A Kaleidoscopic View of Research & Industrial Progress, PRC 2012, 12th & 13th October, 2012, Kolkata, India.

6. Tailoring Acrylic Acid Guar Gum Matrix with Nanosilica for Sustained Transdermal Diclofenac Delivery

Invited talk at Third International Conference on Natural Polymers, ICNP 2012, 26-28th October, 2012, Kottayam, Kerala, India

7. Reverse Engineering of Rubber Products

Invited talk at National Rubber Conference, NRC 2012, Kolkata, 14-15th December, 2012, Kolkata.

8. Engage^R – EVA Double Network Hybrids as Exciting New Compatibilizer for Engage^R-Clay Nanocomposites

Invited talk at 6th International Rubber Expo, Conference and Tyre Show, IRE2013, 22nd-24th January, Bombay Exhibition Centre, Mumbai. India.

9. Engage^R – EMA Double Network Hybrids as New Compatibilizer for Engage^R-Clay Nanocomposites: Investigations on Physical, Mechanical and Electrical Properties

Invited talk at an international conference, Advancement in Polymeric Materials, APM 2013, 1-3rd March 2013, CIPET Lucknow.

10. Biopolymers in Versatile Applications

Invited talk at an international conference, Advancement in Polymeric Materials, APM 2014, 14-16th March 2014, CIPET Bhubaneswar.

11. Ethylene Octene Copolymer-Nanoclay Composites With Superior Electrical Insulation Properties

Invited talk at an international conference, Advancement in Polymeric Materials, APM 2015, 26-28th Feb 2015, IISC Bangalore.

12. Avenues for Sustainability of Rubber Industry

Invited talk at a national conference, National Rubber Conference, NRC 2016, 16-17th December, 2016, Kolkata, India

13. A Silica Rich Filler from Waste Fly Ash

Invited talk at an international conference, Interdisciplinary Conference on Humanitarian Technology, 15-17th December, 2016 at KIIT University, Bhubaneswar, Orissa, India

International/ National Conference Publications (as Abstracts)

1. Synthesis and Characterization of Acrylic Rubber /Silica Nanocomposites Prepared by Sol-Gel Technique

A. Bandyopadhyay, M. De Sarkar and A. K. Bhowmick

Paper #43, 164rd Technical Meeting, 14th-17th October, 2003, Rubber Division, Cleveland, U.S.A.

2. Synthesis and Characterization of Organic-Inorganic Hybrid Nanocomposites
A. Bandyopadhyay, A. K. Bhowmick and M. De Sarkar
International Conference on Nanoscience and Technology (ICONSAT 2003) 17th – 20th December 2003, Kolkata.
3. Structure-Property Relationship in Sol-Gel Derived Polymer/ Silica Hybrid Nanocomposites Prepared at Various pH. (Poster presentation)
A. Bandyopadhyay, M. De Sarkar and Anil K. Bhowmick
International Conference on Nanomaterials, 4th-6th November, 2004, Kolkata.
4. Factors Influencing the Structure and the Properties of Nanocomposites Derived by Sol-Gel Technique.
A. Bandyopadhyay and Anil K. Bhowmick
International Workshop on Polymer Nanocomposites, 22nd – 26th May, 2005, Melbourne, Australia.
5. Synthesis and Characterization of Unusually Transparent and Mechanically Reinforced Rubber/ *In-situ* Silica Hybrid Nanocomposites.
A. Bandyopadhyay
Young Scientists Colloquium 2005, Materials Research Society of India, 8th July, 2005, Kolkata, India.
6. Studies on Novel Composite System Synthesized from Leather Buffing Dust and Poly (Vinyl Chloride)
A. Bandyopadhyay
Paper no: OL 2.1, Polymer 2006, 10-12 February, 2006, Kolkata, India.
7. Poly (vinyl alcohol)-Unmodified Clay Hybrid Nanocomposites: Some Unique Observations.
A, Bandyopadhyay

NanoAware 2006, University College of Technology, University of Calcutta, 24-25th March, 2006, Kolkata, India.

9. Effect of Electron Beam and Gamma Irradiation on Adhesion Property of Polymer Composites.

G. C. Basak, **A. Bandyopadhyay** and A. K. Bhowmick

Paper No: 11C, India International Rubber Conference & Expo 2007, Udaipur, Rajasthan.

10. In-situ Modification of High Crystallinity Grade Poly (ethylene-co-octene) Elastomer with Poly (ethylene-co-acrylic acid) in Melt.

B. Gupta and **A. Bandyopadhyay**

Paper No: A 05, International Conference on Rubber and Rubber-Like Materials, ICRRM 2008, 8-10th January, IIT., Kharagpur.

11. Electron Beam Modification of EPDM Vulcanizate Surface and Studies on its Adhesion Behavior with NR.

G. C. Basak, **A. Bandyopadhyay** and Anil K. Bhowmick

Paper No: E 08, International Conference on Rubber and Rubber-Like Materials, ICRRM 2008, 8-10th January, IIT., Kharagpur.

12. Preparation and Properties of Sulfonated Metallocene Based Polyolefinic Elastomers

A. Biswas, **A. Bandyopadhyay**, N. K. Singha and A. K. Bhowmick

Paper No: A 26, International Conference on Rubber and Rubber-Like Materials, ICRRM 2008, 8-10th January, IIT., Kharagpur.

13. Synthesis of Elastomeric Hybrids from Poly (ethylene-co-octene) with Poly (ethylene-co-acrylic acid) and Studies on their Solvent Resistance Properties

B. Gupta and **A. Bandyopadhyay**

Paper No: NRP 12C, Indian Rubber Expo and International Conference -09, IRE-09, 28-31st January 2009, Kolkata.

14. Plasticization of Atactic Polystyrene using Waste Leather Buffing Dust- A Merit Towards Waste-Polymer Composite.

A. Bandyopadhyay

Paper No: WRE 04C, Indian Rubber Expo and International Conference -09, IRE-09, 28-31st January 2009, Kolkata, India.

15. Influence of Nanofillers on Mechanical Properties and Adhesion of EPDM Rubber.

G. C. Basak, **A. Bandyopadhyay** and A. K. Bhowmick

Paper No: ADB 05C, Indian Rubber Expo and International Conference -09, IRE-09, 28-31st January 2009, Kolkata, India.

16. Swelling and de-swelling studies on elastomeric hydrogels synthesized from high hydrolyzed poly (vinyl alcohol) using freeze-thaw technique.

T. Bhunia, D. Chattopadhyay and **A. Bandyopadhyay**

Paper No: ABS-271, Asian Polymer Association-09 (APA-09), 17-20th December, 2009, IIT Delhi, Delhi, India.

17. Swelling De-swelling Studies after Freeze-Thaw Treatment of Nano Silica Reinforced Poly (vinyl alcohol) Based Organic-Inorganic Hybrid Hydrogel

T. Bhunia, L. Goswami. D. Chattopadhyay and **A. Bandyopadhyay**

Paper No: HD 01, International Conference on Nanoscience and Technology, ICONSAT-10, 17-20th February, IIT Bombay, India.

18. Low shear rheological behavior of carbon nanotube modified thermosensitive carboxymethyl guar gum hydrogel

A. Giri, L. Goswami, S. Pal and **A. Bandyopadhyay**

Paper No: CMP34, International Conference on Advances in Polymer Technology, 2010, APT-10, 26-27th February, Cochin, Kerala, India.

19. Poly (vinyl alcohol)-nanosilica interaction in aqueous gel illustrated through room temperature gel-hysteresis study.

T. Bhunia, D. Chattopadhyay and **A. Bandyopadhyay**

Oral presentation at International Conference on Nanomaterials, ICN-10, 27-29th April 2010, Kerala, India.

20. Physico-mechanical Analysis of Novel High Octene Grade Poly (ethylene-co-1-octene) Elastomer and Poly (ethylene-co-vinyl acetate) Inter-penetrating Network Blends

A. Bandyopadhyay

Oral Presentation at International Rubber Conference, IRC-2010, 17-19th Nov. 2010, Mumbai, India.

21. Adhesion promotion on vulcanized rubber surfaces

A. Bandyopadhyay

Invited Talk, Harishankar Singhanian Elastomer and Tyre Research Institute, JK Tyre, Rakasthan, 2010.

List yet to be updated

Patents

1. Re-utilization of Waste Leather Buffing Dust in Making of Poly (vinyl alcohol) Based Tucking Adhesive for Leather Substrates

P. Chattopadhyay and A. Bandyopadhyay, Indian Patent, File No. T. 1(55)/TIFA/2008, Dated: 4.3.2008

2. Biosorbent for adsorptive separation of heavy metals from aqueous systems

Luna Goswami, Kunal Majumdar, Abhijit Pal, Mrityunjay Suar and Abhijit Bandyopadhyay,
Indian Patent, Application Number. 201631013293 in the year 2016.

Invited Book Chapters

Chapters: 1. *Rubber-Silica Hybrid Nanocomposites*

 A. Bandyopadhyay and A. K. Bhowmick

 2. *Rubber Nanocomposites based on Miscellaneous Nanofillers*

 A. Ganguly, J. J. George, S. Kar, A. Bandyopadhyay and A. K. Bhowmick

Name of the book: “**Current Topics on Elastomer Research**” – Publisher: CRC Press

Authored Book:

1. **Research and Reviews in Nanoscience and Nanotechnology- Recent Advancement in Nanoscience;** Authors: U. K. Sur, A. Bandyopadhyay and A. Datta, VDM, Deutschland., 2012.

2. **Nanoparticles in Lung Cancer Therapy- Recent Trends;** Authors: **Abhijit Bandyopadhyay**, Tamalika Das, Sabina Yeasmin, Springer, 2015

3. **Hyperbranched Polymers for Biomedical Applications;** Authors: **Abhijit Bandyopadhyay**, Srijoni Sengupta, Tamalika Das, Springer, 2018.

Reviewer

1. J. Applied Polymer Science
2. Polymer Engineering and Science
3. Carbohydrate Polymers
4. International Journal of Biological Macromolecules
5. Environmental Science and Technology
6. Bioresource Technology and many more

Thesis supervised

M.Tech: 16; M. Sc.: 1, Ph. D.: 10

Details of Ph.D. Thesis Supervised

1. Name of the student: **Dr. Ganesh Chandra Basak**
Title of the Thesis: **Adhesion Improvement of Vulcanized Ethylene Propylene Diene Polymethylene Rubber: Effect of Surface Modifications and Compounding Ingredients.**
Rubber Technology Centre, IIT Kharagpur
Supervisors: **Dr. Abhijit Bandyopadhyay and Prof. Anil K. Bhowmick**
Degree Awarded: **2012**
2. Name of the student: **Dr. Tridib Bhunia**
Title of the Thesis: **Poly (vinyl alcohol) Based Hydrogels in Controlled Transdermal Drug Delivery Application.**
Department of Polymer Science and Technology, University of Calcutta.
Supervisor: **Dr. Abhijit Bandyopadhyay**
Associate Supervisor: **Prof. Dipankar Chattyopadhyay**
Degree Awarded: **2014**
3. Name of the student: **Dr. Sanjay Kumar Bhattacharyya**
Title of the Thesis: **Exploring application perspective of naturally occurring green materials as potential multifunctional additives in rubber compounds**
Department of Polymer Science and Technology, University of Calcutta.
Supervisor: **Dr. Abhijit Bandyopadhyay**
Associate Supervisor: **Dr. R. Mukhopadhyay**
Degree Awarded: **August, 2015**
4. Name of the student: **Dr. Arindam Giri**
Title of the Thesis: **Synthesis and characterization of natural polymer based hydrogel nanocomposites for sustained transdermal release of diclofenac sodium**
Supervisor: **Dr. Abhijit Bandyopadhyay**
Degree Awarded: **August, 2015**
5. Name of the student: **Dr. Mridul Dasgupta**
Title of the Thesis: **Development, characterization and engineering property analysis of industrial solid waste based rubber composites – An attempt towards solid waste management**
Department of Polymer Science and Technology, University of Calcutta.
Supervisor: **Dr. Abhijit Bandyopadhyay**

Associate Supervisor: **Dr. R. Mukhopadhyay**
Degree Awarded: **October, 2015**

6. Name of the student: **Dr. Tanbir Nasim**

Title of the Thesis: **Natural and Synthetic Polymeric Flocculants For Kaolinated Waste Water Treatment**
Supervisor: **Dr. Abhijit Bandyopadhyay**
Degree Awarded: **June, 2017**

7. Name of the student: **Dr. Abhijit Pal**

Title of the Thesis: **Natural and Semi-natural Polymers for Adsorptive Removal of Heavy Metal Ions from Water**
Supervisor: **Dr. Abhijit Bandyopadhyay**
Degree Awarded: **October, 2018**

8. Name of the student: **Dr. Sabina Yeasmin**

Title of the Thesis: **Synthesis, Characterization and Potential Biomedical Applications of Silver Core-Biopolymer Shell Nanoparticles**
Supervisor: **Dr. Abhijit Bandyopadhyay**
Degree Awarded: **December, 2018**

9. Name of the student: **Ms. Tamalika Das**

Title of the Thesis: **Synthesis, Study of Structure-Property Relationships And Potential Applications of Hyperbranched Vinyl Polymers**
Supervisor: **Dr. Abhijit Bandyopadhyay**
Thesis Submitted: **November, 2018**

10. Name of the student: **Ms. Mahuya Biswas**

Thesis Title of the Thesis: **Biobased Reagentts For Preparation of The Resin To Be Used For Printing Ink Application**
Suoervisor: **Dr. Abhijit Bandyopadhyay**
Thesis submitted: **May, 2019**

Events Organized:

1. Convened an International Conference cum Expo: Recent Advances in Polymer & Rubber Science & Technology, RAPT 2014- 23rd to 25th January, 2014, Kolkata.
2. Convened an International Conference cum Expo: Innovation in Materials Science & Technology, IMST 2018- 14th-16th December 2018, Kolkata

**Abhijit Bandyopadhyay**