PROF. (DR.) ABHIJIT BANDYOPADHYAY

M.Tech, Ph.D., AMIICHE

PROFESSOR, Department of Polymer Science & Technology,
UNIVERSITY OF CALCUTTA, India

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

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

9433186957, 9874915758 (WA)

TECHNICAL DIRECTOR, South Asia Rubber & Polymer Park (SARPOL), WEST BENGAL

Qualified ISO/IEC 17025:2017 Laboratory Management System (LMS) Implementer cum Internal Auditor

Areas of Specialization (Research):

- **Hyperbranched Polymers for Industrial and Bioapplications**
- **Waste Water Treatment and Soild Waste Management**
- **Green Polymer/Rubber Technology**
- **Photophysical Properties of Polymers**
- **Polymer Nanocomposites**
- **Polymer Blends and Composites**
- **Polymer 3D Printing**

Experience (Professional): 2005-Onwards

Position	From	To	Institute
Lecturer on Contract	**14.03.2005**	**02.05.2007**	**Department of Polymer Science & Technology, University of Calcutta**
Assistant Professor	**03.05.2007**	**17.11.2008**	**Rubber Technology Centre, Indian Institute of Technology, Kharagpur**
Assistant Professor	**18.11.2008**	**2.1.2020**	**Department of Polymer Science & Technology, University of Calcutta**
Professor	**3.1.2020**	**Till date**	**Department of Polymer Science & Technology, University of Calcutta**

Experience (Administrative)

1. **Head of the Department: 2017-2019**
2. **Member of the Sennate, University of Calcutta: 2017 onwards**
3. **Member of the Syndicate, University of Calcutta: 2018-2019**

Academic Qualification:

Name of the Examinations	School/ Board/University	Year of Passing	Division/ Rank
Graduation with Honours in Chemistry	University of Calcutta	1997	1st
B.Tech in Polymer Science & Technology	University of Calcutta	2000	Ranked 1st
M.Tech in Polymer Science & Technology	University of Calcutta	2002	Ranked 3rd
Doctorate	Indian Institute of Technology, Kharagpur	2005	---

Professional Recognition and Awards Received:

1. **Ranked 1st** in B.Tech. in 2000.
2. **National Scholarships** for B.Sc. in 1997.
3. **National Scholarships** for Higher Secondary in 1994.
4. Recipient of "**Young Scientist 2005**" award from Materials Research Society of India, Calcutta Chapter.
5. Recipient of "**Career Award for Young Teachers**" from All India Council for Technical Education, Govt. of India, 2010.
6. Recipent of **"Scientist Medal"** from International Association of Advanced Materials (IAAM), Sweden in 2024

Fellowship/Membership

1. Elected Fellow of **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 (Invitee), **All India Rubber Industries Association, Eastern Region**
5. Associate Member of **Indian Institute of Chemical Engineers**

Editorial Board Member of International Journals

1. Advances in Chemical Engineering & Process Technology, USA
2. Exploratory Materials Science Research, India

Sponsored Research 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).

5. **Microbial Desulphurization of Natural And Synthetic Rubber Vulcanizate**

   Harishankar Singhania Elastomer & Tyre Research Institute (HASETRI), JK Tyre (2022) (15 Lakh)

6. **Experimental Observation on Microbial Treatment of Metal Bonded Rubber Products**

   Tega Industries, Kolkata (2024) (Rs. 80,000).

Industrial Consultancy (Major Projects):

1. **Name of the Project: Analysis of Battery Separator Compounds**

   Name of the Company: Exide Industries Ltd. , India, 2015

2. **Name of the Project: Analysis of Carbon Black samples using DLS and TEM**

   Name of the Company: Philips Carbon Black Ltd., Durgapur, India, 2016

3. **Name of the Project: Analysis of a copolymer to meet the REACH compliance**

   Name of the Company: CICO Technologies Ltd., Gurgaon, India, 2018

4. **Name of the Project: Development of Coal Strengthening Compound for Blast Furnace Operation**

   Name of the Company: Plastochem India Ltd., India, 2019

5. **Name of the Project: Development of Damper Rubber Seal**

   Name of the Company: Calor Pyro Ltd., Dubai, 2022

6. **Name of the Project: Development of Biobased Packaging Material**

   Name of the Company: Marico Industries Ltd., India, 2023

International Collaborators:

1. Prof. Suprakas Sinha Ray, CSIR, Pretoria, South Africa
2. Dr. Amit Das, Elastomer Division, IPF Dresden

National Collaborators:

1. Prof. Sagar Pal, IIT(ISM) Dhanbad
2. Prof. Chandan Goswami, NISER, Bhubaneswar
3. Dr. Luna Goswami, KIIT University, Bhubaneswar
4. Prof. Santanu Dhara, SMST, IIT Kharagpur

Year-wise List of International Publications- 121 Publications so far

I_{10} Index: 72	H Index: 28	Total Citation: 2688

Publication Year: 2024 (8 Publications so far)

1. Material Extrusion of SEEPS Blended Isotactic PP For Possible Application As Automotive Bumper: Performance Analysis Through Finite Element Simulation

   Rahul Chatterjee, Mrinmoy Mondal, Suman Acharya, Jagannath Chanda, Debdipta Basu, Prasenjit Ghosh, Rabindra Mukhopadhyay, ***Abhijit Bandyopadhyay,*** **Journal of Manufacturing Processes** (2024) 111, 166-179. **Impact Factor: 6.2**

2. Synthesis of Poly (3-bromo thiophene) supported cobalt molybdate bifunctional catalyst: Manifestation of overall water splitting and hydrazene assisted water splitting

   Abhisek Brata Ghosh, Rumeli Banerjee, Shubham Roy, Samanka Narayan Bhaduri, Dipak Kr Chanda, Papu Biswas ***and Abhijit Bandyopadhyay*****.** **Electrochimica Acta** (2024) 475, 143521. **Impact Factor: 7.3**

3. Genesis of an ecofriendly An + B3 hyperbranched polyesters from Poly (ethylene glycol) and Aconitic acid for application as flocculant

   Sonai Dutta, Subhadeep Chakraborty, Srijoni Sengupta, Suman Acharya, Debdipta Basu and ***Abhijit Bandyopadhyay,*** **Journal of Polymer Research** (2024) 31:39 https://doi.org/10.1007/s10965-024-03889-6. **Impact Factor: 3.2**

4. Exploing experimental and finite simulation analysis to examine nano zinc oxide as a replacement for rubber-grade zinc oxide in passenger carev tire bead filler compounds

   Koushik Banerjee, Debraj Das, Sayan Basak, Jagannath Chanda, Prasenjit Ghosh, Sanjay Kumar Bhattacharyya, Rabindra Mukhopadhyay, ***Abhijit Bandyopadhyay*** **Polymer Composites** (2024) DOI: 10.1002/pc.28578, 1-14 **Impact Factor: 5.2**

5. Toward making polymer chemistry autonomous

   Sayan Basak and ***Abhijit Bandyopadhyay*** **ACS Applied Engineering Materials** (2024) DOI: https://doi.org/10.1021/acsaenm.4c00214

6. Thermoplastic polymers explored: Evaluating fused deposition modeling and investigating structure-property processing interdependencies

   Rahul Chatterjee, Sayan Basak, Anusmita Roy and ***Abhijit Bandyopadhyay*** **Reference Module in Materials Science and Materials Engineering** (2024) DOI: https://doi.org/10.1016/B978-o-323-95486-0.00036-3

7. Beyond traditional stimuli: Exploring salt-responsive bottlebrush polymers-Trends, applications an perspectives

   Sayan Basak, Rahul Chatterjee and ***Abhijit Bandyopadhyay*** **ACS Omega** (2024) DOI: http://doi.org/10.1021/acsomega.4c06137

8. Cytocompatible hyperbranched polyesters capable of altering the Ca^{2+} signaling in neuronal cells in-vitro

   Reetika Sarkar, Rahul Chatterjee, Sonai Dutta, Satish Kumar, Shamit Kumar, Chandan Goswami, Luna Goswmi and ***Abhijit Bandyopadhyay*** **ACS Applied Bio Materials** (2024) DOI: 10.1021/acsabm.4c00848 **Impact Factor: 4.7**

Publication Year: 2023 (6 Publications)

1. Strategic Grafting of Poly METAC And Polyacrylamide Onto Xanthan Gum For Flocculating Kaolin At Lower Concentration

   Subhadeep Chakraborty, Biswarup Dutta, Nayan Ghosh, Suman Halder, Rahul Chatterjee, Srijoni Sengupta, Sagar Pal and ***Abhijit Bandyopadhyay,*** **Materials Today Communications** (2023) 34, 105091. **Impact Factor: 3.66**

2. Indegenous Block Copolymerization By Free Radical Mechanism Using Cis-1,1-Diphenyl Ethylene.

Roumita Hore, Srijoni Sengupta, Abhijit Pal, Jagannath Chanda, Abhijit Bandyopadhyay, **Journal of Polymer Research** (2023) 30, 243. **Impact Factor: 3.2**

3. Ratiometric Synthesis of Non-traditional Polyesters From Poly (Ethylene Glycol) And Trimesic Acid Tethering Bioapplication

   Aniruddha Mukherjee, Srijoni Sengupta, Bijeeta Singha, Rahul Chatterjee, Subhadeep Chakraborty, Abhisekh Singh, Luna Goswami and ***Abhijit Bandyopadhyay*** **Journal of Polymer Research** (2023), 30, 299. **Impact Factor: 3.2**

4. Flocculaion of Low Concentration Kaolin Suspension Using Architecturally Modified Xanthan Gum: Effect of Grafting To Hyperbranching

   Subhadeep Chakraborty, Sonai Dutta, Rahul Chatterjee, Jagannath Chanda, Sagar Pal, ***Abhijit Bandyopadhyay*** **Journl of The Taiwan Institute of Chemical Engineers** (2023), 150, 105066. **Impact Factor: 5.8**

5. How Open Stage Melt Crystallization Affects Tensile And Shrinkage Properties Of 3D Printed Polypropylene

   Rahul Chatterjee, MD. Touhid Sk., Jagannath Chanda, Suman Acharya, Debdipta Basu, Prasenjit Ghosh, Rabindra Mukhopadhyay, ***Abhijit Bandyopadhyay*** **Polymer Engineering and Science** (2023) DOI: 10.1002/pen.26422. **Impact Factor: 3.2**

6. One-Way Shape Memory Polyesters- Evolution, Growth, Developments And Current Trends

   Sayan Basak, Poulomi Dasgupta and ***Abhijit Bandyopadhyay*** (2023) Polymer-Plastics Technology and Materials DOI: 10.1080/25740881.2023.2254372. **Impact Factor: 3.00**

Publication Year: 2022 (7 Publications)

1. Polymer Based Functional Materials: A New Generation Photo-active Candidate For Electrochemical Application

   Abhisek Brata Ghosh, Sayan Basak, ***Abhijit Bandyopadhyay,*** **Electroanalysis** (2022) 34, 1-15. **Impact Factor: 2.5**

2. Synthsis and Characterization of Polypyrrole Encapsulated Formamidinium Lead Bromide Crystals For Fluorescence Memory Recovery

   Soumen Sardar, Prabir Maity, Mona Mittal, Subhadeep Chakraborty, Anamika Dhara, Atanu Jana, ***Abhijit Bandyopadhyay*** **J. Molecular Liquids** (2022) http://doi.org./10.1016/j.molliq.2022.118485 **Impact Factor: 6.1**

3. A Brief Review On Fundamentals Of Conducting Polymers (CP)

   Subhadeep Chakraborty, Rahul Chatterjee, ***Abhijit Bandyopadhyay*** **Organic Polymer Material Research** (2022) 4, 1-11.

4. Styrene-butadiene-styrene based shape memory polymers: Evolution and the current state of the art.

   Sayan Basak, ***Abhijit Bandyopadhyay*** **Polymers Advanced Technologies** (2022) 1-22 DOI: 10.1002/pat.5682, **Impact Factor: 3.665**

5. Improved performance of cobalt hydroxychloride nanoparticles on poly (3-bromo thiophene) template for electrochemical oxygen evolution reaction.

   Abhisek Brata Ghosh, Dipak Kr. Chanda, Heramba V.S.R.M. Koppisetti, Soumen Sardar, Rumeli Banerjee, Papu Biswas, ***Abhijit Bandyopadhyay*** **Journal of Electroanalytical Chemistry** 916 (2022) 116365. **Impact Factor: 4.1**

6. Probing into why aniotropic nanoclay offers better reinforcement in natural rubber than isotropic nanozinc oxide by determining their with sol and gel fractions

   Koushik Banerjee, Soumya Ghosh Chowdhury, Sreedip Ghosh, Jagannath Chanda, Rabindra Mukhopadhyay, Sanjay K. Bhattacharyya, ***Abhijit Bandyopadhyay.*** **J. Applied Polymer Science** (2022) DOI: 10.1002/app.52763. **Impct Factor: 3.1**

7. Two-way semi-crystalline shape memory elastomers: Development and current research trends.

   Sayan Basak and ***Abhijit Bandyopadhyay.*** **Advanced Engineering Materials** (2022), In Press. **Impact Factor: 3.8.**

Publication Year: 2021 (10 Publications)

1. A selective approach towards synthesis of poly (3-bromothiophene)/graphene quantum dot composites via in-situ and ex-situ routes: Application in light emission and photocurrent generation

   Soumen Sardar, Indranil Roy, Subhadeep Chakraborty, Abhisek Brata Ghosh, ***Abhijit Bandyopadhyay,*** **Electrochimica Acta** (2021) 365, 137369. **Impact Factor: 6.90**

2. Effect of pre-mastication on dispesion of nanoclay in presence of carbon black in an inner liner compound- Studies on physico-mechanical and functional properties

*Koushik Banejee, Jagannath Chanda, Soumya Chowdhury, Koushik Pal, Rabindra Mukhopadhyay, Sanjay Bhattacharyya, **Abhijit Bandyopadhyay,*** **Polymer Engineering and Science** (2021) 61, 906-917. **Impact Factor: 2.428**

3. Synthesis and application of C-Dot-The material for the future (A mini review)

*Soumen Sardar and **Abhijit Bandyopadhyay,*** **Polymer Science Peer Reviewed Journal** (2021) 2, 1-3. **Impact Factor: 1.15**

4. Composite Tiles From Waste Plastics And Fly Ash: Modelling the Influence of Composition on Mechanical and Physical Properties

*Sampa Chakraborty, **Abhijit Bandyopadhyay** and Sayantan Adak* **Int. J. Materials Engineering & Innovation** (2021), **Accepted Impact Factor: 0.9**

5. Branched/Hyperbranched Copolyesters From Poly (vinyl alcohol) And Citric Acid as Delivery Agent and Tissue Regeneration Scaffold

*Srijoni Sengupta, Abhishek Singh, Koushik Dutta, Ram Prasad Sahu, Satish Kumar, Chandan Goswami, Saurabh Chawla, Luna Goswami and **Abhijit Bandyopadhyay*** **Macromolecular Chemistry and Physics** (2021) 2100134 **Impact Factor: 2.334**

6. Solvent Responsive Shape memory Polymers-Evolution, Current Status and Future Outlook

*Sayan Basak and **Abhijit Bandyopadhyay*** **Macromolecular Chemistry and Physics** 8 (2021) 2100195 **Impact Factor: 2.334**

7. Hyperbranched Copolymers Forming Polymersome-like Structures Used For Encapsulation And Controlled Release of αTocopherol Succinate (TOS): Drug Transport Modelling

*Srijoni Sengupta, Preetam Guha Ray, Santanu Dhara and **Abhijit Bandyopadhyay*** **ACS Applied Biomaterials** (2021) DOI: 10.1021/acsabm.1c00777

8. Tethering Smartness To The Metal Containing Polymers- Recent Trends In The Stimuli Responsive Metal Containing Polymers

*Sayan Basak and **Abhijit Bandyopadhyay*** **Journal of Organometallic Chemistry** (2021) 956, 122129 **Impact Factor: 2.4**

9. Evaluation Of Lignin As Potential Green Filler In An Optimally Designed Solution Grade Styrene Butadiene Rubber (SSBR) Based Tyre Tread Compound

*Soumya Ghosh Chowdhury, Sreedip Chowdhury, Kausik Pal, Jagannath Chanda, Sanjay Bhattacharyya, Rabindra Mukhopadhyay and **Abhijit Bandyopadhyay*** **Plastics, Rubber and Composites** (2021) Accepted.

10. Fabrication of Self-healable Thermoplastic Polyurethane By Masterbatch Technology

    *Poulomi Dasgupta, Sayan Basak, Srijoni Sengupta, Tamalika Das, Koushik Pal, Sanjay K. Bhattacharyya, **Abhijit Bandyopadhyay,*** **J. Applied Polymer Science** (2022) e52071 http://doi.org./10.1002/app.52071 **Impact Factor: 3.1**

Publication Year: 2020 (4 Publications)

1. An elastic semi IPN polymer hybrid for enhanced adsorption of heavy metals

   *Abhijit Pal, Tamalika Das, Srijoni Sengupta, Soumen Sardar, Sudipta Mondal, **Abhijit Bandyopadhyay***, **Carbohydrate Polymers** (2020) 236, 116055. **Impact Factor: 7.01**

2. Bottom up synthesis of bright fluorescent, mositire resistant methyl ammonium lead bromide@poly (3-bromothiophene)

   *Soumen Sardar, Atanu Jana, Avik Mukherjee, **Abhijit Bandyopadhyay,*** **New Journal of Chemistry** (2020) 44, 2053. **Impact Factor: 3.288**

3. Graphene oxide grafted hyperbranched poly (vinyl imidazole) with ionic liquid components as a potential carbon dioxide scrubber

   *Tamalika Das, Srijoni Sengupta, Animesh Jana, Abhijit Pal, Indranil Ray, Soumen Sardar, Nayan Ranjan Saha, Sourja Ghosh, **Abhijit Bandyopadhyay,*** **Reactive and Functional Polymers** (2020), 146, 104432. **Impact Factor: 3.07**

4. Distribution of Nanoclay in a new TPV/Nanoclay composite prepared through dynamic vulcanization

   *Sayantani Dutta, Srijoni Sengupta, Jagannath Chanda, Amit Das, Sven Weissner, Suprakas Sinha Ray, **Abhijit Bandyopadhyay,*** **Polymer Testing** (2020), 83, 106374. **Impact Factor: 3.28**

Publicaton Year: 2019 (3 Publications)

1. A polyester with hyperbranched architecture as potential nano-grade antibiotics: An in-vitrostudy
   *Srijoni Sengupta, Satish Kumar, Tamalika Das, **Abhijit Bandyopadhyay***, Materials Science & Engineering C (2019) 99, 1246-1256. **Impact Factor: 5.02**

2. Aquasorbent guargum grafted hyperbranched poly (acrylic acid): A potential culture medium for microbes and plant tissues

Tamalika Das, Srijoni Sengupta, Abhijit Pal, Soumen Sardar, Nilanjan Sahu, Naisargik Lenka, Kishor C.S. Panigrahi, Luna Goswami & ***Abhijit Bandyopadhyay****,* Carbohydrate Polymers (2019), 222, 114983. **Impact Factor: 7.02**

3. Impoving hysteresis of a carbon black-filled natural rubber tread compound by using a novel coupling agent

Soumya Ghosh Chowdhury, Koushik Pal, Hirak Satapathi, ***Abhijit Bandyopadhyay****, Rabindra Mukhopadhyay, Sanjay K. Bhattacharyya,* Progress in Rubber Plastics and Recycling Technology 26 (2019) 1-17. **Impact Factor: 0.559**

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: 4.02**

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, ***Abhiji 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: 7.02**

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: 2.12**

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 guargum 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 (2017) 429-444 **Impact Factor: 1.74**

Publication Year: 2016 (5 publications)

1. 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: 7.02**

2. In-situ synthesis of polyacrylate grafted carboxymethyl guargum-carbon nanotube membranes for potential application in controlled drug delivery
   Arindam Giri[1], Tridib Bhunia[2], Abhijit Pal[1], Luna Goswami and ***Abhijit Bandyopadhyay***

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

3. 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: 3.08**

4. 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.

5. 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 Anitbacterial 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. Vijaybaskar 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. Ghorai 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: 7.02**

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: 7.477**
2. Acrylic acid grafted guargum-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: 7.02**

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: 7.02**

4. Guar gum and guar gum-oligomeric poly(vinyl alcohol) blends as novel flocculants for kaolinated waste water

   Tanbir Nasim, Asit K. Pamda 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: 2.12**

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: 3.37**

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: 3.37**

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 guargum 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 (some important ones)

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, 3-5 th 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. EngageR – 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. EngageR – EMA Double Network Hybrids as New Compatibilizer for EngageR -Clay Nanocomposites: Investigations on Physical, Mechanical and Electrical Properties

   Invited talk at an international conference, Advancement in Polymeric Materials, APM 2013, 1-3 rd 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. pH Responsive Self-assembling From Polymersomes To Aggregates In Hyperbranched Copolymer And Waste Water Treatment Through Host-Guest Mechanism

    International Conference on Chemical Engineering & Advanced Polymeric Materials, ICEAPM 2016, 18-20th August, 2016, Ranchi

13. Avenues for Sustainability of Rubber Industry

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

14. 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

15. Hyperbranched Polymers in Waste Water Treatment and Hg^{2+} Sensing

    An International Conference on Advancement in Polymeric Materials, APM 2018, 2-4 th February, 2018 CIPET, Bhubaneswar

16. Synthesis, Characterization and Adhesive Property Analysis of Poly (alpha methyl styrene-co-butyl acrylate) Copolymer

    Asia RubTech-An International Rubber Conference cum Expo-27th -29th September 2018- Hotel Lalit Ashok, Bangalore

17. Recent Progress in Hyperbranched Polymers and Development in Healthcare Application

Emerging Frontiers in Materials Science-EFMS 2019-15th -16th February 2019, Behala College, Kolkata

18. Hyperbranched Polymer-Silver Nanocomposites for Mercury Sensing

    4th International Conference on Nanotechnology for Better Living to Address Polymers and Their Composites, 6-7 th April, 2019, IIT Kanpur

19. Hyperbranched Polymers based superabsorbents as hydroponics in Arid and Semiarid regions

    National Arabidopsis Meeting, 29-31st December, 2019, Puri

20. About Hyperbranched Polymers and its application in mercury sensing

    Plenary Talk, National Conference on Polymeric Materials and Applications, 28-29th January, 2020, Sardar Patel University, Anand, Gujarat

21. About Hyperbranched Polymers and its various applications

    31st Meeting of MRSI, 11-14th February, 2020, CGCRI, Kolkata.

22. Hyperbranched Polymer Nanocomposites and its application in mercury sensing.

    International Conference on Advancements in Polymeric Materials (APM), 13-15th February, 2020, CIPET, Bangalore.

23. Hyperbranched Polymers As Aquaponics For Plant Growth in Arid and Semiarid Regions

    Keynote Lecture, International Conference on Advancement of Polymeric Materials (APM 2021) 9-13th March, 2021, Bubaneswar (Virtual mode)

24. Plastics: Myth vs. Reality

Expert Lecture, Faculty Development Program (FDP 03 & 04) 03-30th March, 2021, Human Resource Development Centre, University of Calcutta (Virtual mode)

25. Short Term Course on : Plastics and Rubber Technology, 7-10th July, 2021, Ordnance Factory Institute of Learning (OFIL), Govt of India (Virtual mode)
26. Over view of Plastics Processing vis-à-vis Polymer 3D Printing

    Keynote Lecture, Faculty Development Program (FDP), CIPET, Guwahati, 19-23rd July, 2021.

27. Polymer Matrix Based Nanostructures For Targeted Drug Delivery- An Overview

    Keynote Lecture, Faculty Development Program (FDP), CIPET, Guwahati: 2-6th August, 2021.

28. About Plastics And Its Recycling With Special Reference To Circular Economy

    Invited Lecture, Faculty Development Program (FDP 05 and 06) Human Resource Development Centre, University of Calcutta, 17th and 18th November 2021.

29. Polymer Nanoparticles in Drug Delivery Application: An Overview

    Invited Lecture, Fculty Improvement Program, Sponsored by Department of Biotechnology, Govt. of India, Lady Brabourn College, Govt. of West Bengal, Kolkata, India, 12th January, 2022

30. Polymer Composites And Nanocomposites In Defence Application

    Special Lecture, Ordnance Factory Institute of Learning, Kolkata, 3rd February 2022.

31. Polymer Nanocomposites in Tarheted Drug Delivery

    Keynote Lecture, Faculty Development Program, CIPET Guwahati, 7th February 2022.

32. Polymers With Hyperbranched Topologies Tethering Bioapplications

Invited Lecture, National Conference on Smart Polymer Materials (SPM 2022), MAKAUT, West Bengal. 18-19th November, 2022.

33. Microbial Devulcanization of Rubber Vulcanizates

    Invited Lecture, International Rubber Conference, IRC 2022, 24-26th November, 2022, Bengaluru, India

34. For Chairing a Session in an International Conference on Recent Trends in Chemical Sciences, RTCS 2022, December 16-18, 2022, IIT (ISM) Dhanbad.

35. Smart Processing of Polymers in 3D Mode

    Invited Lecture, National Rubber Conference (NRC 2022), 4-5th January, 2023, Kolkata.

36. Bioapplications of Unconventional Polyesters Derived from Poly (ethylene glycol) and Citric Acid.

    Invited Lecture and Session Chair, An International Conference on Advancement in Polymeric Materials (APM 2023), CIPET Bengaluru, 18-20th March, 2023.

37. Scope and Opportunity of 3D Printing With Silicone Rubber

    Invited Lecture, One Day National Conclave on Silicone Rubber, 26th June, 2023, Kolkata, India

38. 3D Printing with Thermoplastic Elastomers

    Invited Lecture, National Rubber Conference (NRC 2023), 3-4th November, 2023

39. Enhanching the scope of 3D printing with Thermoplastics

    Distinguished Speaker, Polymer Connect, 14-16th December, 2023, Bhubaneswar

40. 3D Printing with Elastomers

Resource Person, Short Term Course on Recent Trends in Rubber Technology, IIT Kharagpur, 27th February, 2024

41. Rubber Compound Analysis using DMA and RPA
42. Resource Person, Short Term Course on Recent Trends in Rubber Technology, IIT Kharagpur, 27th February, 2024
43. 3D Processing of Isotactic Polypropylyne

    Invited Lecture, Advancement in Polymeric Materials (APM 2024), CIPET Ahmedabad, 14-16th March, 2024

44. Elastomer 3D Printing

    Expert Speaker, Workshop at Indian Rubber Expo 2024, 21-23rd March 2024, Mumbai

45. Finite Element Simulation in Rubber Product Development

    Expert Speaker, Workshop at Indian Rubber Expo 2024, 21-23rd March 2024, Mumbai

46. On Skill Development

    Resource Person, NEP Sensitization Program, Human Resource Development Centre, University of Calcutta, 24th May, 2024

47. Introducing Finite Element Simulation For Rubber Product Development- A New Leap Towards Design Precision And Product Performance Analysis

    Invited Speaker, National Rubber Conference (NRC 2024), New Delhi, 26-27th July, 2024

48. Integrating 3D Printing And Finite Element Simulation For Development Of Automobile Bumper From Blends of PP and SEEPS

    Invited Speaker, Rubber Innovation Forum, 28-29th August, 2024, Kolkata

Patents

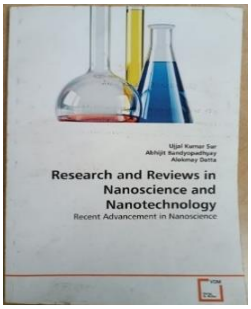
1. Re-utilization of Waste Leather Buffing Dust in Making of Poly (vinyl alcohol) Based Tucking Adhesive for Leather Substrates

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

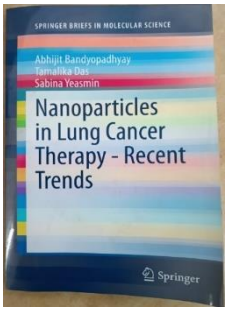
2. Biosorbent for adsorptive separation of heavy metals from aqueous systems

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

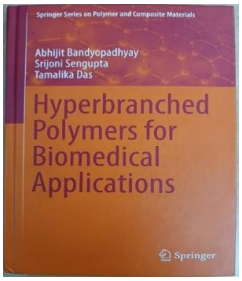
Authored Books:



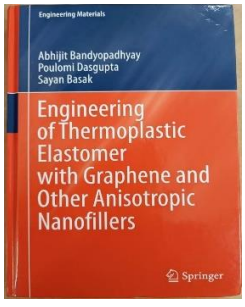
1. **Research and Reviews in Nanoscience and Nanotechnology- Recent Advancement in Nanoscience;** Authors: U. K. Sur**, A. Bandyopadhyay** and A. Datta**,** VDM, Deutschland., 2012



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

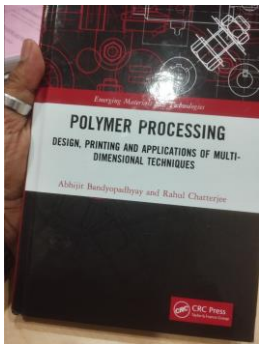


3. **Hyperbranched Polymers for Biomedical Applications;** Authors: **Abhijit Bandyopadhyay,** Srijoni Sengupta, Tamalika Das, Springer, 2018.



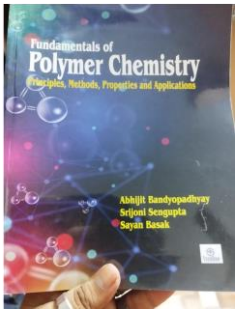
4. **Engineering of Thermoplastic Elastomers With Graphene and Other Nanofillers;** Authors: **Abhijit Bandyopadhyay,** Poulomi Dasgupta, Sayan Basak**, Springer, Germany, October 2020**

5. **Polymer Processing: Design, Printing And Applications Of Multidimensional Techniques;** Authors: **Abhijit Bandyopadhyay** and Rahul Chatterjee. **CRC Press, Taylor and Francis Corp. USA (2023)**

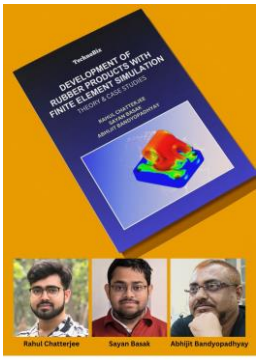


6. **Fundamentals Of Polymer Chemistry: Principles, Methods, Properties And Applications;** Authors: **Abhijit Bandyopadhyay,** Srijoni Sengupta, Sayan Basak

   Techshar Publishers, New Delhi (2024)



7. **Development of Rubber Products With Finite Element Simulation: Theory and Case Studies;** Authors: Rahul Chatterjee, Sayan Basak and **Abhijit Bandyopadhyay**



As Reviewer of International Journals

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: 40; Ph. D.: 15; Post Doc: 1 (Dr. D S Kothari Fellow)**

Details of Ph.D. Thesis Supervised (15 so far)

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**
   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**
   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**
   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: **Dr. Tamalika Das**

   Title of the Thesis: **Synthesis, Study of Structure-Property Relationships And Potential Applications of Hyperbranched Vinyl Polymers**

   Supervisor: **Prof. Abhijit Bandyopadhyay**

   Degree Awarded: **January, 2020**

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

    Title of the Thesis: **Influence of Biobased Reagents On Synthesis And Properties Of Industrial Resins For Printing Ink Application**

    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Degree awarded: **August 2020**

11. Name of the student: **Dr. Soumen Sardar**

    Title of the Thesis: **Development of Light Emitting Polymers from Various Conducting Polymers and Their Derivatives**

    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Degree Awarded: **March, 2021**

12. Name of the student: **Dr. Srijoni Sengupta**

    Title of the Thesis: **Hyperbranched Polymers Synthesised Through Condensation For Potential Biomedical Application**

    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Degree Awarded: **November, 2022.**

13. Name of the student: Mr. Soumya Ghosh Chowdhury

    Title of the Thesis: **Exploring Abundant Natural Material As Potential Filler As Well As Additives And Development Of Environment-Friendly Rubber Compounds Toward Sustainable Tyre Technology**

    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Status: Thesis submitted

14. Name of the student: Mr. Koushik Banerjee

    Title of the Thesis: **Impact Of Isotropic And Anisotropic Nanofillers On The Physicomechanical Properties Of Natural Rubber And Its Blends Pertaining To Sustainable Tyre Technology**

    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Status: Thesis submitted

15. Name of the student: Mr. Subhadeep Chakraborty

    Title of the Thesis: **New Age Architectural Polymers As Efficient Flocculant For Waste Water Treatment**

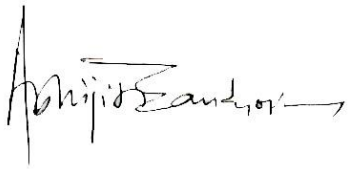
    Supervisor: **Prof. Abhijit Bandyopadhyay**

    Status: Thesis submitted

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

3. Co-convened a One Day Workshop on “Revisiting Sustainability For Rubber Industry: Vision 2047 at University of Calcutta jointly with Indian Rubber Materials Research Institute (IRMRI), Govt of India on 27th July, 2024



Abhijit Bandyopadhyay