

DR. TITASH MONDAL

OBJECTIVE

Passionate researcher and a strong team player. Strong acumen for developing application-oriented research and development. Instrumental in identifying potential areas that cut across the market segments. Ardent believer of result-oriented findings and making fact-based decision. Compatible with stakeholders from different geographies. Trained in project management skills. Strong background in polymer, elastomer and carbon-based filler. Translating the industrial learning of product development to academic field. Potential experience in segments like polymer composites, adhesives, and flexible electronics segments.

CORE COMPETENCIES

- Project Management
- Leadership/Supervision
- Collaborative
- Technical Reporting/Documentation
- Team Player

EXPERIENCE

ASSISTANT PROFESSOR, RUBBER TECHNOLOGY CENTRE, INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

March 04, 2020- Till Date

Primarily responsible for teaching and research activities. Managing a team of Ph.D. and master's students for their thesis in the field of polymer nanocomposites for flexible electronics, rheology and adhesives. Holding administrative position of assistant warden for a hall of residence. Managing industrially and Government funded sponsored projects and consultancy for delivering measurable outcomes. Reviewer of various journals from different publishing house.

RESEARCH SCIENTIST, MOMENTIVE PERFORMANCE MATERIALS, INDIA

July 01, 2018 to February 28, 2020

Primarily responsible for silicone composite-based product development and managing incubation research in the organization. Special emphasis was to develop silicone composite-based formulations for electric vehicles and autonomous vehicles.

ADVANCED SCIENTIST, MOMENTIVE PERFORMANCE MATERIALS, INDIA

October 16, 2016 to June 30, 2018

Primarily responsible for silicone composite-based product development and managing incubation research in the organization.

SENIOR PROJECT OFFICER, RUBBER TECHNOLOGY CENTRE, INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, INDIA

May 13, 2015 to October 15, 2016

Research and Development related to the new energy efficient tire formulations for two big industrial giants.

EDUCATION

PH.D. JOINTLY FROM THE CHEMISTRY DEPARTMENT, IIT PATNA, INDIA AND THE CHEMICAL ENGINEERING DEPARTMENT, UNIVERSITY OF HOUSTON, UNITED STATES OF AMERICA, 2015

The PhD thesis work was carried out at the Chemistry department, IIT Patna and the Chemical Engineering department of the University of Houston. The Ph.D. thesis focused on carbon nanomaterial modification, polymer synthesis, development of polymer nanocomposite and understanding the underlying physics involved with the polymer nanocomposite. Part of the thesis work was done at the National Institute of Standards and Technology (NIST), MD, United States of America.

M-TECH, RUBBER TECHNOLOGY CENTRE, INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, INDIA, 2011

Basics of polymer science and technology, followed by a year long thesis work by research. Master's thesis was mostly focused on synthesis and characterization of biodegradable polymers for biomedical applications. Adjudicated as the best M-Tech thesis award by IIT Kharagpur, 2011.

MSC ORGANIC CHEMISTRY, UNIVERSITY OF CALCUTTA, INDIA, 2009

Courses related to chemistry with special focus on organic chemistry as the special paper.

BSC CHEMISTRY (HONORS), UNIVERSITY OF CALCUTTA, INDIA, 2007

Courses related to chemistry along with Physics and Mathematics.

EDITED BOOK

Graphene-Rubber Nanocomposites-Fundamentals to Applications, Editors: Titash Mondal, Anil K. Bhowmick, CRC Press USA, 2022

PUBLICATIONS

1. Influence of Nanofillers on Adhesion Properties of Polymeric Composites by Guchait, A., Saxena, A., Chattopadhyay, S., Mondal T.* ACS Omega, <https://doi.org/10.1021/acsomega.1c05448>, 2022
2. Radiation curable polysiloxane: synthesis to applications by Selvan M., Mondal T.* Soft Matter -17, 6284- (2021)
3. Controlled Methodology for Development of a Polydimethylsiloxane Polytetrafluoroethylene-Based Composite for Enhanced Chemical Resistance: A Structure Property Relationship Study by Kaur B., Kumar S., Mondal T.*, Phukan M., Saxena A., Dalavoy T., Bhowmick A. K., Bhat S. ACS Omega - 5, 22482-(2020)
4. Study of reinforcement mechanism and structural elucidation of expanded graphite carbon black hybrid filler SBR nanocomposites through comprehensive analysis of mechanical properties and small angle X ray data by Roy A., Mondal T., Kar S., Naskar K., Ghosal R.,

- Mukhopadhyay R., Bhowmick A. K. *Journal of Applied Polymer Science* 138 49093- (2020)
5. Structure property correlation of silicone hydrogels based on 3 [tris(trimethylsilyloxy)silyl]propyl methacrylate monomer by Sharma A., Bhat S. , Dasgupta D. , Samantara L. , Kalyanachakravarthi K. , Manchanda B. , Shah C. , Saxena A. , Choudhury V. , Mondal T.* *Journal of Applied Polymer Science* 137 49198- (2020)
 6. Expanded graphite as an agent towards controlling the dispersion of carbon black in poly (styrene co-butadiene) matrix: An effective strategy towards the development of high performance multifunctional composite by Mondal T, Bhowmick A. K., Ghosal R. , Mukhopadhyay R. *Polymer* 146 31-41 (2018)
 7. Ionic liquid modification of graphene oxide and its role towards controlling the porosity, and mechanical robustness of polyurethane foam by Mondal T.*, Basak S. , Bhowmick A. K. *Polymer* 127 106-118 (2017)
 8. Graphene-based elastomer nanocomposites: functionalization techniques, morphology, and physical properties by Mondal T, Bhowmick A. K., Ghosal R. , Mukhopadhyay R. *Advances in Polymer Science* 267-318 (2016)
 9. Graphene Nanocomposites with High Molecular Weight Poly(ε-caprolactone) Grafts: Controlled Synthesis and Accelerated Crystallization by Mondal T, Ashkar R. , Butler P. , Bhowmick A. K., Krishnamoorti R. *ACS Macro Letters* 278-282 (2016)
 10. Impeded repair of abasic site damaged lesions in DNA adsorbed over functionalized multiwalled carbon nanotube and graphene oxide by Kumari R., Mondal T, Bhowmick A. K., Das P. *Mutation Research/Genetic Toxicology and Environmental Mutagenesis* 803-804 39-46 (2016)
 11. Unique method to improve the thermal properties of bisphenol A tetraacrylate by graphite oxide induced space confinement by Mondal T.*, Chandra V. , Bhowmick A. K. *RSC Advances* 6 104483-104490 (2016) Controlled Synthesis of Nitrogen Doped Graphene from a Heteroatom Polymer and Its Mechanism of Formation by Mondal T, Bhowmick A. K., Krishnamoorti R. *Chemistry of Materials* 27 716-725 (2015)
 12. Butyl lithium assisted direct grafting of polyoligomeric silsesquioxane onto graphene by Mondal T, Bhowmick A. K., Krishnamoorti R. *RSC Advances* 4 8649-8656 (2014)
 13. Conducting Instant Adhesives by Grafting of Silane Polymer onto Expanded Graphite by Mondal T, Bhowmick A. K., Krishnamoorti R. *ACS Applied Materials and Interfaces* 6 160197-16105 (2014)
 14. Stress Generation and Tailoring of Electronic Properties of Expanded Graphite by Click Chemistry by Mondal T, Bhowmick A. K.,

- Krishnamoorti R. ACS Applied Materials and Interfaces 7244-7253 (2014)
15. Synthesis and characterization of bi-functionalized graphene and expanded graphite using n-butyl lithium and their use for efficient water soluble dye adsorption by Mondal T., Bhowmick A. K., Krishnamoorti R. Journal of Materials Chemistry A 1 8144-8153 (2013)
 16. 2-Methyl oxazoline-grafted carbon nanofibers: preparation, characterization and their role in elastomeric actuators by Mondal T., Bhowmick A. K. Journal of Materials Science 47 4178-4186 (2012)
 17. Chlorophenyl pendant decorated graphene sheet as a potential antimicrobial agent: synthesis and characterization by Mondal T., Bhowmick A. K., Krishnamoorti R. Journal of Materials Chemistry 22 22481-22487 (2012)
 18. Poly (l-lactide-co- caprolactone) microspheres laden with bioactive glass-ceramic and alendronate sodium as bone regenerative scaffolds by Mondal T., Sunny M. C., Khastgir D., Varma H. , P R. Materials Science and Engineering C 697-706 (2012)

BOOK CHAPTERS

1. Functionalization of Graphite and Graphene by Ghosh, A, Sharma, S, Bhowmick, A.K. and Mondal T. Graphene-Rubber Nanocomposites-Fundamentals to Applications, 2022, CRC Press USA
2. Synthesis and characterization of graphene from non-conventional precursors by Roy, A, Mondal, T, Naskar, K, and Bhowmick, A.K. Graphene-Rubber Nanocomposites-Fundamentals to Applications, 2022, CRC Press USA
3. Graphene based Hybrid fillers as New Reinforcing Agents in Rubber Compounds for the Tire Industry by Ghosh, B, Paul, S, Kar, S, Ghoshal, R, Roy, A, Mondal, T and Bhowmick, A. K. Graphene-Rubber Nanocomposites-Fundamentals to Applications, 2022, CRC Press USA
4. Polymer and its composition for printed electronics applications by Sharma, S, and Mondal T. Current Trends in Polymer Research for Advanced Applications, 2022, CRC Press USA
5. High Performance Thermoplastics Elastomers Based on Silicones by Dey, S, and Mondal T. Advances in Thermoplastics Elastomers: Opportunities and Challenges, 2022, Elsevier
6. Pressure Sensitive Adhesive for Healthcare Applications by Saha S., Mondal T.* , Bhowmick A. K. Reference Module in Materials Science and Materials Engineering - Elsevier <https://doi.org/10.1016/B978-0-12-820352-1.00106-1>
7. Conjugated Polymers in Bioelectronics by Guchait A., Saxena A. , Chattopadhyay S. , Mondal T.* Conjugated polymers for next generation of photovoltaics, energy storage, and electronics - Elsevier (Accepted/In-Press) (2021)
8. Thermally Conductive Plastics for Electronic Applications by Selvant M., Mondal T.* Reference Module in Materials Science and Materials Engineering - Elsevier (2021); <https://doi.org/10.1016/B978-0-12-820352-1.00099-7>

9. Advanced Applications of Bio-degradable Green Composites by Konwar D. B., Mondal T.*; Bhat S. Biodegradable Packing for Non-Food Items 138-155 (2020) doi.org/10.21741/9781644900659-6

PATENTS

1. EP3902862A1 by Mondal T, Gahlout P , Bhat S. 2021
2. EP3902861A1 by Mondal T, Murali M., Bhat S., Kang H.2021
3. EP3902865A1 by Mondal T, Murali M. , Bhat S. 2021
4. US20220056270A1 by Mondal T, Murali M. , Bhat S. 2022

AWARDS

Sl. No.	Name of Award	Awarding Agency	Year
1	Inspire-Achieve Business Result	Momentive Performance Materials	2018, 2019
2	Inspire-Personal Leadership	Momentive Performance Materials	2018, 2019
3	Inspire-Trust & Team Work	Momentive Performance Materials	2019
4	EHS Inspirational Award	Momentive Performance Materials	2017
5	R&D Innovator of the Year	Momentive Performance Materials	2017
6	IUSSTF Travel Award	Indo-US Science and Technology forum	2016
7	1st Prize in Poster ICPAM 2014	IIT Patna	2014
8	Joint PhD Fellowship	IIT Patna & University of Houston	2013
9	2nd Prize in Poster ICCRM 2013	IIT Kharagpur	2013
10	Best Research Scholar	IIT Patna	2012
11	Modi Rubber Prize	IIT Kharagpur	2011
12	1st Prize in Poster APSRT	IIT Kharagpur	2011
13	1st Prize Polymer Quest	IIT Kharagpur	2009
14	GATE in Chemistry	Group of IITs & IISc	2009
15	NET Chem. Sci.	CSIR/UGC	2008
16	1st Prize in Intra University Seminar Competition	University of Calcutta	2008

MEMBERSHIP AND
REVIEWER

1. American Chemical Society (# 32452028); Invited Membership 2022
 - ACS Applied Materials and Interfaces
 - ACS Applied Nano Materials
 - Journal of Physical Chemistry Letters
 - Carbon
 - Materials Science and Engineering C
 - Composite Part C
 - Journal of Applied Polymer Science
 - Polymer and Polymer Composites
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REFEREES

1. Professor Anil K. Bhowmick
Department of Chemical and Biomolecular Engineering
The University of Houston, TX, USA
anilbhowmick@gmail.com
2. Professor Ramanan Krishnamoorti
Professor and Chief Energy Officer
Vice President (Interim) Research and Technology Transfer
Department of Chemical and Biomolecular Engineering
The University of Houston, TX, USA
ramanan@uh.edu