

**Brief report under the project, UGC-BSR mid-carer award
2019-2022**

1. No. of students completed PhD during 2019-2022

Serial No	Students	Year	Thesis titles
1	Chandrama Sarkar	2019	Studies on Catalytic properties of Graphene and Functionalized Graphene based nanomaterials
2	Ainidita Bora	2019	Development of Carbon based nanomaterials and their applications
3	Simanta Doley	2020	Development of bio-based non-isocyanate polyurethane through CO ₂ insertion and its composite.
4.	Jayashree Nath	2020	Stimuli sensitive hydrogels and its application in drug release shape memory and self healing
5	Junali Handique	2020	Development of self healing polymers Functional polymers and healing characteristics

2. Number of students continuing PhD programme (2019- continue)

Serial No	Students	Thesis title
1	Priyankamoni Saikia	Perovskite based materials and their applications in photocatalysis and sensor
2	Suman Lahkar	Electrocatalyst for hydrogen evolutions by water splitting
3.	Shahnaz Ahmed	Perovskite based nanomaterials and their applications in sensor
4.	Asfi Ahmed	Hydrogels based wet surface adhesives
5.	Kankana Baruah	Organogels for removal of organic solvents and oils from contaminated water
6.	Sultana Parveen Ahmed	Catalyst for preparation of bio-desels from vegetable oils

3. List of publications during (2019-2022)

1. Sarkar, C., Nath, J., Bhuyan, S., & Dolui, S. K. (2019). Multifunctional ternary nanocomposites of Ni/Polypyrrole/Reduced graphene oxide as supercapacitor and electrocatalyst in methanol oxidation. *ChemistrySelect*, 4(9), 2529-2537.
2. Bora, A., Mohan, K., Phukan, P., & Dolui, S. K. (2018). A low cost carbon black/polyaniline nanotube composite as efficient electro-catalyst for triiodide reduction in dye sensitized solar cells. *Electrochimica Acta*, 259, 233-244.
3. Sarkar, C., & Dolui, S. K. (2015). Synthesis of copper oxide/reduced graphene oxide nanocomposite and its enhanced catalytic activity towards reduction of 4-nitrophenol. *RSC advances*, 5(75), 60763-60769.

4. Sarkar, C., & Dolui, S. K. (2015). Synthesis of copper oxide/reduced graphene oxide nanocomposite and its enhanced catalytic activity towards reduction of 4-nitrophenol. *RSC advances*, 5(75), 60763-60769.
5. Sarkar, C., Bora, C., & Dolui, S. K. (2014). Selective dye adsorption by pH modulation on amine-functionalized reduced graphene oxide-carbon nanotube hybrid. *Industrial & Engineering Chemistry Research*, 53(42), 16148-16155.
6. Bora, A., Mohan, K., Pegu, D., Gohain, C. B., & Dolui, S. K. (2017). A room temperature methanol vapor sensor based on highly conducting carboxylated multi-walled carbon nanotube/polyaniline nanotube composite. *Sensors and Actuators B: Chemical*, 253, 977-986.
7. Bora, A., Mohan, K., Doley, S., Goswami, P., & Dolui, S. K. (2018). Broadening the sunlight response region with carbon dot sensitized TiO₂ as a support for a Pt catalyst in the methanol oxidation reaction. *Catalysis Science & Technology*, 8(16), 4180-4192.
8. Bora, A., Mohan, K., Doley, S., & Dolui, S. K. (2018). Flexible asymmetric supercapacitor based on functionalized reduced graphene oxide aerogels with wide working potential window. *ACS applied materials & interfaces*, 10(9), 7996-8009.
9. Bora, A., Mohan, K., & Dolui, S. K. (2019). Carbon dots as cosensitizers in dye-sensitized solar cells and fluorescence chemosensors for 2, 4, 6-trinitrophenol detection. *Industrial & Engineering Chemistry Research*, 58(51), 22771-22778.
10. Doley, S., & Dolui, S. K. (2018). Solvent and catalyst-free synthesis of sunflower oil based polyurethane through non-isocyanate route and its coatings properties. *European Polymer Journal*, 102, 161-168.
11. Doley, S., Bora, A., Saikia, P., Ahmed, S., & Dolui, S. K. (2021). Blending of cyclic carbonate based on soybean oil and glycerol: a non-isocyanate approach towards the synthesis of polyurethane with high performance. *Journal of Polymer Research*, 28(5), 1-9.
12. Doley, S., Sarmah, A., Sarkar, C., & Dolui, S. K. (2018). In situ development of bio-based polyurethane-blend-epoxy hybrid materials and their nanocomposites with modified graphene oxide via non-isocyanate route. *Polymer International*, 67(8), 1062-1069.
13. Doley, S., Agarwal, V., Bora, A., Borah, D., & Dolui, S. K. (2019). Development of sunflower oil-based nonisocyanate polyurethane/multiwalled carbon nanotube composites with improved physico-chemical and microwave absorption properties. *Polymer Composites*, 40(S2), E1120-E1130.

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14. Nath, J., Ahmed, A., Saikia, P., Chowdhury, A., & Dolui, S. K. (2020). Acrylic acid grafted gelatin/LDH based biocompatible hydrogel with pH-controllable release of vitamin B12. *Applied Clay Science*, 190, 105569.
 15. Nath, J., Shekhar, S., & Dolui, S. K. (2021). Artificial Nacre-based Chitosan/Graphene Oxide-Mg Hydrogel with Significant Mechanical Strength and Shape Memory Effect. *Polymer Science, Series A*, 63(2), 123-132.
 16. Nath, J., Chowdhury, A., & Dolui, S. K. (2018). Chitosan/graphene oxide-based multifunctional pH-responsive hydrogel with significant mechanical strength, self-healing property, and shape memory effect. *Advances in Polymer Technology*, 37(8), 3665-3679.
 17. Nath, J., & Dolui, S. K. (2018). Synthesis of carboxymethyl cellulose-g-poly (acrylic acid)/LDH hydrogel for in vitro controlled release of vitamin B12. *Applied Clay Science*, 155, 65-73.
 18. Handique, J., Gogoi, J., Nath, J., & Dolui, S. K. (2020). Synthesis of Self-Healing Bio-Based Tannic Acid-Based Methacrylates By Thermoreversible Diels–Alder Reaction. *Polymer Engineering & Science*, 60(1), 140-150.
 19. Handique, J., Gogoi, J., & Dolui, S. K. (2020). Development of self-healing star metallopolymers by metal–ligand crosslinking. *Journal of Applied Polymer Science*, 137(14), 48527.
 20. Handique, J., & Dolui, S. K. (2018). Microencapsulated self-healing polymers via controlled, surface initiated atom transfer radical polymerization from the surface of graphene oxide. *Journal of Polymer Research*, 25(10), 1-15.
 21. Handique, J., Saikia, B. J., & Dolui, S. K. (2019). Designing Microencapsulation Based Self-Healing Methylmethacrylate-Glycidyl Methacrylate Copolymer. *Polymer Science, Series A*, 61(5), 577-588.
 22. Saikia, P., Sarmah, H. J., Ahmed, S., Lahkar, S., Das, J. P., & Dolui, S. K. (2021). Synthesis of $CaxCu_{3-x}Ti_4O_{12}$ Perovskite Materials and household LED light mediated degradation of Rhodamine Blue dye. *Journal of Inorganic and Organometallic Polymers and Materials*, 31(5), 2161-2167.
 23. Lahkar, S., Ahmed, S., Mohan, K., Saikia, P., Das, J. P., Puzari, P., & Dolui, S. K. (2022). Iron doped titania/multiwalled carbon nanotube nanocomposite: a robust electrocatalyst for hydrogen evolution reaction in aqueous acidic medium. *Electrochimica Acta*, 407, 139921.

TEZPUR UNIVERSITY

Statement of expenditure

Project Name: "UGC-BSR-MID CAREER AWARD GRANT"

Sponsor UGC, New Delhi

Sanction Letter No. & Date: F.19-237/2019(BSR) dated May 30, 2019

For the year-2019-2022

Consolidated Statement of Expenditure incurred during 01.04.2019 to 29.05.2022 in the Department of Chemical Sciences, Tezpur University under UGC-BSR-MID CAREER AWARD GRANT.

Total Grant approved by UGC	Grant Released by UGC	Item(s) of Expenditure	Actual Expenditure (Rs.)	Balance as on 29-05-2022	Remarks
Rs. 10.00 Lakh	Rs. 8.00 Lakh	Chemicals & Consumables	5,37,736.00		
		Contingency	93,483.00		
		Equipment	1,57,500.00		
		Travel	11,281.00		
		Total	8,00,000.00	Nil	

Certificate

1. Certified that grant has been utilize for the purpose for which it was sanctioned and in accordance with the terms & conditions attached to the grant.
2. If as a result of check or Audit objection, some irregularity is noticed at a later stage, action will be taken to refund, adjust or regularize the objected account.



Signature of Registrar
With Seal

Tezpur University

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Signature of Finance Officer
With Seal

Finance Officer

Tezpur University



Signature of Principal Investigator
With Seal

PROF. SWAPNAPATI DUTTA
Dept. Chemical Sciences

TEZPUR UNIVERSITY

Utilization Certificate

Project Name: "UGC-BSR-MID CAREER AWARD GRANT"

Sanction Letter No. & Date: F.19-237/2019(BSR) dated May 30, 2019

For the year-2019-2022

Certified that total grant of **Rs. 8,00,000.00** (*Rupees Eight Lakh* only) Sanctioned to **PROF. SWAPAN KUMAR DOLUI** by the University Grants Commission vide their letter No. F.19-237/2019(BSR) dated May 30, 2019 towards "UGC-BSR Mid-Career Award Grant" has been utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions as laid down by the Commission. If as a result of check or audit objection, some irregularity is noticed at a later State, action will be taken to refund or regularize the objected amount.



Signature of Registrar
With Seal
Registrar
Tezpur University



Signature of Finance Officer
With Seal
Finance Officer
Tezpur University



Signature of Principal Investigator
With Seal

PROF. SWAPAN KUMAR DOLUI
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