

## LIST OF PUBLICATIONS

### *Included in the thesis*

- [1] **Ahmed, A.**, Nath, J., Baruah, K., Rather, M. A., Mandal, M., and Dolui, S. K. Development of mussel mimetic gelatin based adhesive hydrogel for wet surfaces with self-healing and reversible properties. *International Journal of Biological Macromolecules*, 228:68-77, 2023.
- [2] **Ahmed, A.**, Saikia, P., Ray, P., Dutta, R., and Dolui, S. K. A robust and highly compressible polyacrylamide co-polymer hydrogel developed through g-C<sub>3</sub>N<sub>4</sub> initiated photopolymerisation and its photocatalytic activity towards dye removal. *New Journal of Chemistry*, 48(9):3984-3997, 2024.
- [3] **Ahmed, A.**, Borah, U. and Dolui, S.K. Mussel-inspired adhesive hydrogel patch for wet surfaces with self-healing and pH-dependent drug delivery for potential transdermal applications. (Communicated)
- [4] **Ahmed, A.**, Bora, U. and Dolui, S.K. Design of Starch-Based Electro-Responsive Smart Hydrogel with Rapid Bending Actuation Under Low-Electric Field. (Communicated)

### **Other publications in journals**

- [3] Nath, J., **Ahmed, A.**, Saikia, P., Chowdhury, A., and Dolui, S. K. Acrylic acid grafted gelatin/LDH based biocompatible hydrogel with pH-controllable release of vitamin B12. *Applied Clay Science*, 190:105569, 2020.
- [4] Baruah, K., **Ahmed, A.**, Dutta, R., Ahmed, S., Lahkar, S., and Dolui, S. K. Removal of organic solvents from contaminated water surface through a fatty acid grafted polyvinyl alcohol based organogel. *Journal of Applied Polymer Science*, 139(45):e53123, 2022.
- [5] Dutta, R., Baruah, K., Dhar, S., **Ahmed, A.**, Dutta, N., Doley, S., Pitambar, S., Dolui, S. K. and Karmakar, B. Removal of oils and organic solvents from wastewater through swelling of porous crosslinked poly (ethylene-co-vinyl acetate): Preparation of adsorbent and their oil removal efficiency. *Marine Pollution Bulletin*, 186:114488, 2023.

### **Papers presented in academic conferences (as abstract):**

[1] **Ahmed, A.** and Dolui, S. K. Photoactive g-C<sub>3</sub>N<sub>4</sub> as a Visible Light Photo-Initiator for the Development of Reinforced Hydrogel. Frontiers in Chemical Sciences-2022 (FICS-2022), organized by the Department of Chemistry, IIT Guwahati, 2nd-4th December 2022.

[2] **Ahmed, A.** and Dolui, S. K. Development of Hydrogel-based Adhesive for Wet Surfaces. International Conference on Recent Advances in Materials Chemistry and Catalysis (RAMCC-2023), organized by the Department of Chemistry, Dibrugarh University, Dibrugarh, 1<sup>st</sup>-3<sup>rd</sup> March, 2023.

### **Book Chapter**

[1] **Ahmed, A.**, Ali, A. A., Sarmah, J. K., and Sarmah, H. J. Cellulose-based hydrogels for fuel cell applications. In Cellulose-Based Hydrogels, pages 347-365, ISBN:978-0-443-22049-4. Elsevier, 2025.