
List of publications

In journals

- [1] **Sarmah, D.** and Karak, N. Biodegradable superabsorbent hydrogel for water holding in soil and controlled-release fertilizer. *Journal of Applied Polymer Science*, 137(13):48495, 2020.
- [2] **Sarmah, D.** and Karak, N. Double network hydrophobic starch based amphoteric hydrogel as an effective adsorbent for both cationic and anionic dyes. *Carbohydrate Polymers*, 242:116320, 2020.
- [3] **Sarmah, D.** and Karak, N. Starch based mechanically tough hydrogel for effective removal of toxic metal ions from wastewater. *Journal of Cleaner Production*, 344:131074, 2022.
- [4] **Sarmah, D.** and Karak, N. Physically cross-linked starch/hydrophobically-associated poly (acrylamide) self-healing mechanically strong hydrogel. *Carbohydrate Polymers*, 289:119428, 2022.
- [5] **Sarmah, D.,** Rather, M. A., Sarkar, A., Mandal, M., Sankaranarayanan, K., and Karak, N. Self-cross-linked starch/chitosan hydrogel as a biocompatible vehicle for controlled release of drug. *International Journal of Biological Macromolecules*, 237:124206, 2023.
- [6] **Sarmah, D.,** Borah, M., Mandal, M., and Karak, N. Swelling induced mechanically tough starch–agar based hydrogel as a control release drug vehicle for wound dressing applications. *Journal of Materials Chemistry B*, 11(13):2927-2936, 2023.

Book Chapter

- [1] **Sarmah, D.,** Bora, A., and Karak, N. Hydrogel Nanocomposites Derived from Renewable Resources. In Pathania, D. and Singh, L., editors, *Bio renewable nanocomposite materials: For electrocatalyst, energy storage, and wastewater remediation*, Pages 269-285. American Chemical Society, 2022.
- [2] **Sarmah, D.,** Bora, A., and Karak, N. Current challenges and perspective of hydrogels. In Gupta, R. editor, *Hydrogels: Fundamentals to advanced energy applications*, CRC Press, 2023. (Accepted)

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- [3] Bora, A., **Sarmah, D.**, and Karak, N. Hydrogels for environmental applications. In Aleman, C., Gupta, R., Garcia, J. M., editors, *Multifunctional hydrogels: From basic concepts to advanced applications*, CRC Press, 2023. (Accepted)

In conferences

(Published as abstract)

- [1] **Sarmah, D.** and Karak, N., Prospect and challenges of bio-based biodegradable superabsorbent for multifaceted applications. International Conference on Organic Chemistry (Organix), 20-22nd December, 2018.
- [2] **Sarmah, D.** and Karak, N., Hydrophobically modified amphoteric starch based hydrogel for dye removal from industrial effluent. International Symposium on Sustainable Polymers, 21-22nd August, 2019.
- [3] **Sarmah, D.** and Karak, N. Starch based mechanically tough double cross-linked hydrogel as a toxic metal ion adsorbent. International Conference on Molecules to Materials (MTM – 2020), 17-18th December, 2020.