

LIST OF PUBLICATIONS

Journals

- [1] **Bayan, R.** and Karak, N. Renewable resource modified polyol derived aliphatic hyperbranched polyurethane as a biodegradable and UV-resistant smart material. *Polymer International*, 66(6):839-850, 2017.
- [2] **Bayan, R.** and Karak, N. Renewable resource derived aliphatic hyperbranched polyurethane/aluminium hydroxide–reduced graphene oxide nanocomposites as robust, thermostable material with multi-stimuli responsive shape memory features. *New Journal of Chemistry*, 41(17):8781-8790, 2017.
- [3] **Bayan, R.** and Karak, N. Photo-assisted synthesis of a Pd–Ag@CQD nanohybrid and its catalytic efficiency in promoting the Suzuki–Miyaura cross-coupling reaction under ligand-free and ambient conditions. *ACS Omega*, 2(12):8868-8876, 2017.
- [4] **Bayan, R.** and Karak, N. Bio-derived aliphatic hyperbranched polyurethane nanocomposites with inherent self healing tendency and surface hydrophobicity: Towards creating high performance smart materials. *Composites Part A: Applied Science and Manufacturing*, 110:142-153, 2018.
- [5] **Bayan, R.** and Karak, N. Hyperbranched polyurethane-supported Pd-Ag@CQD nanocomposite: a high performing heterogeneous catalyst. *ChemistrySelect*, 3(40):11210-11218, 2018.
- [6] **Bayan, R.** and Karak, N. Photoluminescent oxygeneous-graphitic carbon nitride nanodots incorporated bioderived hyperbranched polyurethane nanocomposite with anticounterfeiting attribute, *ACS Omega*, 4(5):9219–9227, 2019.
- [7] **Bayan, R.** and Karak, N. Bio-based hyperbranched polymer-supported oxygeneous graphitic-carbon nitride dot as heterogeneous metal-free solar light photocatalyst for oxidation and reduction reactions. *Applied Surface Science*, 514:145909, 2020.

Book Chapters

- [1] Duarah, R., Hazarika, D., Saikia, A., **Bayan, R.**, Ghosh, T., and Karak, N. Sustainable polymeric nanocomposites for multifaceted advanced applications. In Katiyar, V., Kumar, A., and Mulchandani, N., editors, *Advances in Sustainable Polymers*, pages 363-395. Springer, Singapore, 2019.
- [2] **Bayan, R.** and Karak, N. Polymer nanocomposites based on two-dimension nanomaterials, In Barua, S. and Khan, R., editors, *Two Dimensional Nanostructures for Biomedical Technology*, pages 249-279. Elsevier, UK, 2020.

Appendix

Conferences

- [1] **R. Bayan** and N. Karak, *Renewable resources-modified aliphatic hyperbranched polyurethane as biodegradable UV resistant smart material*, 20th CRSI National Symposium in Chemistry, Gauhati University, Guwahati, 3rd-5th February, 2017.
- [2] **R. Bayan** and N. Karak, *Characterization of bio-based hyperbranched polyurethane/aluminium hydroxide@reduced graphene oxide nanocomposite using sophisticated analytical tools*, 1st International Conference on Sophisticated Instruments in Modern Research, IIT Guwahati, Guwahati, 30th June-1st July, 2017.
- [3] **R. Bayan** and N. Karak, *Bio-derived aliphatic hyperbranched polyurethane nanocomposites with high performance and smart features*, 4th International Symposium on Advances in Sustainable Polymers, IIT Guwahati, Guwahati, 8th-11th January, 2018.
- [4] **R. Bayan** and N. Karak, *Palladium-silver-carbon dot nanohybrid and its nanocomposite with hyperbranched polyurethane: prospects as multifunctional material*, OrganiX-2018: An International Conference in Chemistry, Tezpur University, Tezpur, 20th-21st December, 2018.
- [5] **R. Bayan** and N. Karak, *Nanocomposite of bio-derived aliphatic hyperbranched polyurethane & oxygenous-carbon nitride quantum nanodots as sustainable anti-counterfeiting material*, Regional Seminar on Science for Sustainable Development (SSD-2019), Department of Chemistry, B. Borooah College, Guwahati, 9th January, 2019.