

Curriculum Vitae



Nilutpal Bhuyan

Assistant Professor

Department of Chemistry

D.C.B. Girls' College

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Educational Qualifications

Degree: MSc in Chemistry (2016)

Awarded by: The Assam Kaziranga University, Assam with First Class

Degree: BSc in Chemistry (2014)

Awarded by: Dibrugarh University with First Class

Subjects Taken (At Graduate Level)

First Semester: Chemistry-C-102, C-102 Lab

Second Semester: Chemistry-C-202, C-202 Lab, Ge-201, Ge-201lab

Third Semester: Chemistry-C-303, C-303 Lab, Ge-301, Ge-301 Lab

Fourth Semester: Chemistry-C-403, C-403 Lab, Ge-401, Ge-401 Lab

Fifth Semester: Chemistry-C-502, C-502 Lab

Experience

- ❖ Served as an assistant professor in DCB Girls' College, Jorhat from 22nd January 2021.
- ❖ Research experience: 6 years (pursuing Ph.D. at Tezpur University)
- ❖ Working as a summer trainee for two months on a topic entitled '*Pyrolysis of Lemon Grass waste: A Comparison between Catalytic and Non-Catalytic Pathway*' at CSIR- NEIST, Jorhat.

Publications (till 15th May 2023)

Journal Papers

- 1) **N. Bhuyan**, N.D. Choudhury, B. K. Dutta, K. Upadhyaya, N. Saikia, & R. Kataki (2023). Assessment of kinetic parameters, mechanisms, and thermodynamics of *Tithonia diversifolia* pyrolysis. *Biomass Conversion and Biorefinery*, 13(4), 2703-2718.
- 2) H.P. Nath, B.K. Dutta, **N. Bhuyan**, B.K. Saikia, & N. Saikia (2023). A comprehensive study on the transition metal-catalysed pyrolysis kinetics, thermodynamics, and mechanisms of bamboo powder. *Biomass Conversion and Biorefinery*, 13, 5043-5057.
- 3) **N. Bhuyan**, R. Narzari, S.M. Bujarbaruah & R. Kataki (2022) Comparative assessment of artificial neural network and response surface methodology for evaluation of the predictive capability on

- bio-oil yield of *Tithonia diversifolia* pyrolysis, *Biomass Conversion and Biorefinery*, 12, 2203–2218.
- 4) M. J. Borah, H. J. Sarmah, **N. Bhuyan**, D. Mohanta, & D. Deka, (2022). Application of Box-Behnken design in optimization of biodiesel yield using WO₃/graphene quantum dot (GQD) system and its kinetics analysis. *Biomass Conversion and Biorefinery*, 12, 221–232.
 - 5) N. D. Choudhury, **N. Bhuyan**, N. Bordoloi, N. Saikia, & R. Kataki, (2021). Production of bio-oil from coir pith via pyrolysis: kinetics, thermodynamics, and optimization using response surface methodology. *Biomass Conversion and Biorefinery*, 11, 2881–2898.
 - 6) U. Deb, **N. Bhuyan**, S.S. Bhattacharya, and R. Kataki, (2019). Characterization of agro-waste and weed biomass to assess their potential for bioenergy production. *International Journal of Renewable Energy Development*, 8(3): 243-251.
 - 7) M. J. Borah, A. Das, V. Das, **N. Bhuyan**, D. Deka (2019). Transesterification of waste cooking oil for biodiesel production catalyzed by Zn substituted waste egg shell derived CaO nanocatalyst, *Fuel*, 242: 345-354.
 - 8) Konwar, K., Nath, H. P., **Bhuyan, N.**, Saikia, B. K., Borah, R. C., Kalita, A. C., & Saikia, N. (2019). Effect of biomass addition on the devolatilization kinetics, mechanisms and thermodynamics of a northeast Indian low-rank sub-bituminous coal. *Fuel*, 256, 115926.
 - 9) V. Basumatary, R. Saikia, R. Narzari, N. Bordoloi, L. Gogoi, D. Sut, **N. Bhuyan** and R. Kataki (2018). Tea factory waste as a feedstock for thermo-chemical conversion to biofuel and biomaterial, *Materials Today Proceedings* 5(11): 23413-23422.
 - 10) S. Chutia, R. Narzari, N. Bordoloi, R. Saikia, L. Gogoi, D. Sut, **N. Bhuyan** and R. Kataki (2018). Pyrolysis of Dried Black Liquor Solids and Characterization of the Bio-Char and Bio-Oil. *Materials Today Proceedings*, 5(11): 23193-23202.
 - 11) M. Gogoi, K. Konwar, **N. Bhuyan**, R.C. Borah, A. C., Kalita, H.P. Nath, & N. Saikia, (2018). Assessments of pyrolysis kinetics and mechanisms of biomass residues using thermogravimetry. *Bioresource Technology Reports*, 4, 40-49.

Book Chapters

- 1) P. Deka, M. Gohain, **N. Bhuyan**, N. Gogoi, & R. Kataki (2022). Utilization of Biowastes in Green Chemistry. *Climate Change and Agriculture: Perspectives, Sustainability and Resilience*, (Ed. Nouredine Benkeblia), John Wiley & Sons, 399-425. ISBN: 978-1-119-78977-2
- 2) N.D. Choudhury, **N. Bhuyan**, R. Narzari, R. Saikia, D. Seth, N. Saha, & R. Kataki (2021) Various conversion techniques for the recovery of value-added products from tea waste. *Valorization of Agri-Food Wastes and By-Products* (Ed. R. Bhat), Elsevier 237-265 eBook ISBN: 9780128242605 Paperback ISBN: 9780128240441
- 3) **N. Bhuyan**, M.J. Borah, N. Bora, D. Saikia, D. Deka, & R. Kataki (2021). Heterogeneous Nanocatalytic Conversion of Waste to Biodiesel. *Nano-and Biocatalysts for Biodiesel Production* (Ed. A. P. Ingle) Willey Scrivener Publishing. (Print ISBN:9781119730002; Online ISBN:9781119729969)
- 4) **N. Bhuyan**, N. Bora, R. Narzari, K. Boruah, & R. Kataki (2021). Thermo-Catalytic Conversion of Non-Edible Seeds (Extractive-Rich Biomass) to Fuel Oil. *Liquid Biofuels: Fundamentals, Characterization, and Applications* (Ed. K.P. Shadangi) Willey Scrivener Publishing, 285. ISBN: 9781119793014.
- 5) **N. Bhuyan**, A. Dutta, R. Mohan, N. Bora, & R. Kataki, Advances in nanotechnology for biofuel production. In *Nanomaterials: Application in Biofuels and Bioenergy Production Systems* (Ed. R. Praveen Kumar, B. Bharathiraja). Academic Press (Elsevier), 2021, pp. 533-562. ISBN: 9780128224014.
- 6) M.M. Phukan, R. Kumar, K. Gupta, P. Bardhan, **N. Bhuyan**, L. Gogoi, ... & R. Kataki (2021). Aquatic Microbial Oxygenic Phototrophs: A Short Treatise on Diverse Applications and the Future Biofuel Scenario. In *Environmental Microbiology and Biotechnology* (Eds. A. Singh, S. Srivastava, D. Rathore, D. Pant). Springer, Singapore, pp. 135-152. (Paperback ISBN 978-981-15-7492-4; eBook ISBN 978-981-15-7495-5; eBook ISBN 978-981-15-7493-1)

- 7) N. Bora, R. Narzari, **N. Bhuyan**, & R. Kataki (2020). Bioenergy-Byproducts Based Electrodes for Flexible Supercapacitors. In *Biorefineries: A Step Towards Renewable and Clean Energy* (Ed. P. Verma). Springer, Singapore, 2020, pp. 437-464, ISBN: 9789811595936.
- 8) S. Das, A.S. Reshad, **N. Bhuyan**, D. Sut, P. Tiwari, V.V. Goud, and R. Kataki, Utilization of nonedible oilseeds in a biorefinery approach with special emphasis on rubber seeds. In: *Waste Biorefinery* (Eds. Bhaskar, T., Pandey, A., Rene, E.R., and Tsang, D.), Elsevier, 2020, pp. 311-336.
- 9) **N. Bhuyan**, R. Narzari, L. Gogoi, N. Bordoloi, D.R. Palsaniya, U. Deb, N. Gogoi, and R. Kataki, Valorization of agricultural wastes for multidimensional use. In: *Sustainable Bioresources for Emerging Bioeconomy* (Eds. Kataki, R., Pandey, A., Pant, D., and Khanal, S.), Elsevier, 2020. (ISBN 978-0-444-64309-4)
- 10) M. Hiloidhari, **N. Bhuyan**, N. Gogoi, D. Seth, A. Singh, S. Prasad, A. Garg, and R. Kataki, AgroIndustry wastes: Feedstocks for biofuels and biomaterials for sustainable rural development. In: *Refining Biomass Residues for Sustainable Energy and Bioproducts* (Eds. Praveen Kumar, R., Gnansounou, E., Kenthorai Raman, J., and Baskar, G), Elsevier, 2020, pp. 357-388 (ISBN: 9780128189962).
- 11) **N. Bhuyan**, D. Sut, L. Gogoi, V.V. Goud, and R. Kataki, Rural Bio-refinery: A viable solution for Production of fuel and chemicals in Rural India, In *Sustainable Bioenergy*, (Eds. M. Rai and A. P. Ingle), Elsevier, 2019, pp. 21-47 (ISBN 9780128176542).
- 12) S. Gogoi, **N. Bhuyan**, D. Sut, R. Narzari, L. Gogoi, and R. Kataki, Agricultural wastes as Feedstock for Thermo-Chemical Conversion: Products Distribution and Characterization. In: *Energy Recovery Processes from Wastes*, (Ed. Ghosh, S.K.), Springer, 2019, pp. 115-128 (ISBN: 978-981-32-9227-7).
- 13) S. Gogoi, R. Narzari, N. Bordoloi, **N. Bhuyan**, D. Sut, L. Gogoi, and R. Kataki, Influence of Temperature on Quality and Yield of Pyrolytic Products of Biofuel Process Wastes. In: *Energy Recovery Processes from Wastes*, (Ed. Ghosh, S.K.), Springer, 2019, pp. 129-142 (ISBN: 978-981-32-9227-7).
- 14) R. Kataki, N. Bordoloi, R. Saikia, D. Sut, R. Narzari, L. Gogoi, and **N. Bhuyan**, Wastes valorization to Fuel and Chemicals through Pyrolysis: Technology, Feedstock, Products, and Economic Analysis. In: *Waste to Wealth* (Eds. Singhania, R.R., Agarwal, A., Sukumaran, R.K. and Praveen Kumar, R.), Springer, 2018, pp. 477-514 (ISBN 978-981-10-7431-8).

Conference publications as full papers

- 1) Saikia, R., **Bhuyan, N.**, Saikia, B.K. and Saikia, N., *Co-Pyrolysis Behaviour of a High Sulfur Coal with Biomass*, Conference: 68th Session of Indian Institute of Chemical Engineers, CHEMCON, December 2015, At Indian Institute of Technology, Guwahati, India, pp. 337-342.
- 2) Gogoi, S., **Bhuyan, N.**, Sut, D., Narzari, R., Gogoi, L., and Kataki, R. Sesame Stalk as a Feedstock for Thermo-chemical Conversion: Products Distribution and Characterization, In *Sustainable Waste Management* (Ed. Ghosh, S.K.), Proceedings of the 8th International Conference on Sustainable Waste Management (8th IconSWM), 2018, Acharya Nagarjuna University, Guntur, AP, India November 22 – 24, 2018, pp. 791-800.
- 3) Gogoi, S., Narzari, R., Bordoloi, N., Sut, D., Gogoi, L., **Bhuyan, N.**, and Kataki, R. Temperature Influence on Quality and Yield of Pyrolytic Products of Seedcake of *Kayea assamica*. In: *Sustainable Waste Management* (Ed. Ghosh, S.K.), Proceedings of the 8th International Conference on Sustainable Waste Management (8th IconSWM), Acharya Nagarjuna University, Guntur, AP, India November 22 – 24, 2018, pp. 801-810.

Conference presentations/participation

- ✓ **N. Bhuyan**, N. Dev Choudhury, K. Upadhyaya, and R. Kataki presented a paper entitled “Assessment of Kinetic Parameters of *Tithonia diversifolia* Pyrolysis” at the 3rd National Conference on Recent Advances in Science and Technology (NCRASST 2020), organized by Assam Science And Technology University (ASTU) through on-line mode, 17th-19th August 2020.
- ✓ **N. Bhuyan**, R. Narzari, and R. Kataki presented a paper entitled “Comparative assessment of artificial neural network and response surface methodology for evaluation of the predictive

capability on bio-oil yield of *Tithonia diversifolia* pyrolysis” at International Conference on New Horizons in Biotechnology (NHBT 2019), jointly organized by CSIR-NIIST and the Biotech Research Society at Thiruvananthapuram, Kerala, India, 20-24th Nov 2019.

- ✓ **N. Bhuyan** and R. Kataki presented a paper entitled “Characterization of Carbonaceous Product Obtained by Pyrolysis and Hydrothermal Carbonization of *Pistia stratiotes*” at the International Conference on Renewable and Alternate Energy (ICRAE- 2018), organized by ASTU, Guwahati, Assam, 4th-6th Dec 2018.
- ✓ **N. Bhuyan**, R. Narzari, D. Sut, N. Bora, R. Kataki, presented a paper entitled “Valorization of waste biomass for production of value-added products”, in a National Symposium on Sustainable Waste Management (SWM 2019), organized by the Department of Energy, Tezpur University, Tezpur, Assam, 03 Aug, 2019.
- ✓ S. Gogoi, **N. Bhuyan**, D. Sut, R. Narzari, L. Gogoi, and R. Kataki, presented a paper entitled “Sesame Stalk as a Feedstock for Thermo-chemical Conversion: Products Distribution and Characterization”, in the 8th International Conference on sustainable waste management, organised by Acharya Nagarjuna University, Vijayawada, Andhra Pradesh, 22nd-24th Nov 2018.
- ✓ **N. Bhuyan**, N. Saikia, and R. Kataki presented a paper, *Thermo-kinetic evaluations of Messuaferrea*, in *National Conference on Renewable Energy Technology Utilization for Rural Development (NCRETURD-2017)*, organised by Department Of Energy Engineering, North-Eastern Hill University, Shillong, Meghalaya, February 27 – March 1, 2017.
- ✓ R. Saikia, **N. Bhuyan**, B.K. Saikia, and N. Saikia, *Co-Pyrolysis Behaviour of a High Sulfur Coal with Biomass* December 2015 Conference: *68th Session of Indian Institute of Chemical Engineers, CHEMCON*, At Indian Institute of Technology, Guwahati, India, December 27-30, 2015.

Workshop/Induction/ Refresher Programme

- ❖ Completed UGC-approved 6-day short-term **Professional Development Program (PDP) on ‘Implementation of NEP 2020 for University and College Teachers’** organized by IGNOU from 8th – 16th May 2023
- ❖ Completed online Weeklong **Faculty Development Program (FDP) on ‘Implementation of NEP 2020 in Higher Education Institutions’** organized by Teaching Learning Centre, Tezpur University from 26th April – 02nd May 2023.
- ❖ Completed in weeklong **Faculty Development Programme (FDP) on Micro teaching** organized by IQAC, D.C.B. Girls’ College in collaboration with ICT Academy from 22nd to 27th February 2023.
- ❖ Completed a one-week **Faculty Development Programme (FDP) on stress management** organized by IQAC, D.C.B. Girls’ College in collaboration with ICT Academy from 19th to 24th September 2022.
- ❖ Completed the Online **Faculty Induction Programme (FIP)** organized by the Teaching Learning Centre, Tezpur University from 03rd August-02nd September 2021 under the PMMMNMTT Scheme of the Ministry of Education, Government of India.
- ❖ Completed the **Interdisciplinary Refresher Course on Academic Writing and Research** held on 16th-30th May 2022 organized by the Teaching Learning Centre, Tezpur University in Online mode.
- ❖ Workshop on **Fluoride Nilogon**, sponsored by UGC, New Delhi, and organized by the Department of Chemical Sciences, Tezpur University on 25th March 2017.
- ❖ **Industry academia interaction on energy conservation and renewable energy intervention opportunity for industrial growth in NE India** organized by the Department of Energy, Tezpur University, Assam held on 17th March 2017.
- ❖ **National Thematic Workshop on Advances in Nanostructured Materials: Application and Perspectives 2016**, organized by The Assam Kaziranga University & UGC-DAE Consortium for Scientific Research, Kolkata Centre during 1st-2nd June 2016.