

DHRUBA CHAKRABORTTY
Principal
B N College, Dhubri
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Education:

Ph.D., Chemistry, Gauhati University, Assam, 2007
Thesis: Synthesis, characterization and application of some aluminophosphate molecular sieves
Supervisor: Dr. J. N. Ganguli

M.Sc., Chemistry, Dibrugarh University, Assam, 1990
Concentrations: Inorganic Chemistry

B.Sc., Chemistry, B N College, Dhubri, Assam, 1986
Concentrations: Chemistry (Major), Mathematics, Physics

Teaching Experience:

Associate Professor in Chemistry,
B N College, Dhubri, Assam (1993 - 2014)

Administrative Experience:

Principal, B N College, Dhubri, Assam (1st November, 2014 –till date)

Research Skills:

- Knowledge of Material Characterization
- Heterogeneous Catalysis and Photocatalysis
- Water Treatment

Publications:

In Journals

1. J.N. Ganguli, D. Chakrabortty, C.V.V. Satyanarayana, **2008**, Incorporation of zirconium in medium-pore aluminophosphate molecular sieves with AEL framework, ***Microporous and Mesoporous Materials***, 108, 223–229.
2. D. Chakrabortty, J.N. Ganguli, C.V.V. Satyanarayana, **2011**, Incorporation of zirconium in medium-pore aluminophosphate molecular sieves with AFO framework, ***Microporous and Mesoporous Materials***, 137, 65–71.
3. D. Chakrabortty, S. Sen Gupta, **2013**, Photo-catalytic decolourisation of toxic dye with N-doped titania: a case study with Acid Blue 25, ***Journal of Environmental Science***, 25, 1034–1043.
4. D. Chakrabortty, S. Sen Gupta, **2014**, Decolourization of Metanil Yellow by visible light photocatalysis with N-doped TiO₂ nanoparticles: influence of system parameters and kinetic study, ***Desalination and Water Treatment***, 52, 5528-5540.

5. H. Sarma, D. Chakraborty, K.C. Sarma, **2014**, Structural and optical properties of ZnO nano particles, *IOSR Journal of Applied Physics*, 6, 8-12.
6. H. Sarma, D. Chakraborty, K.C. Sarma, **2014**, X-ray peak broadening analysis of ZnO nanoparticles prepared by precipitation method, *International Journal of Scientific and Research Publications*, 4, 1-7.
7. H. Sarma, D. Chakraborty, K.C. Sarma, **2015**, Structural characterization of cadmium oxide nanoparticles by means of X-ray line profile analysis, *Journal of Basic and Applied Engineering Research*, 2, 1773-1780.
8. D. Chakraborty, S. Sen Gupta, **2015**, Removal of Orange II dye from aqueous solution by adsorption and photodegradation with visible light in presence of nitrogen doped titania nanocatalyst, *Indian Journal of Chemical Technology*, 22, 34-41.
9. H. Sarma, D. Chakraborty, K.C. Sarma, **2017**, Effect of zinc concentration on ZnO nanostructured films synthesized by SILAR technique, *International Journal of Innovative Research in Science, Engineering and Technology*, 6, 11994-12013.
10. H. Sarma, D. Chakraborty, K.C. Sarma, **2017**, X-ray analysis of cadmium oxide nanostructured films synthesized with different precursor molarities by Silar method, *Asian Journal of Chemistry*, 29, 2005-2010.
11. S. Sen Gupta, D. Chakraborty, **2017**, Photocatalytic decolorisation of a toxic dye, Acid blue 25, with graphene based N-doped titania, *Indian Journal of Chemistry*, 56A, 1293-1301.
12. M. A. Kausor, A. M. Ali, S. Sen Gupta, D. Chakraborty, **2019**, Synthesis, characterization and application of graphene based silver orthophosphate nanocomposite in organic dye degradation, *Desalination and Water Treatment*, 140, 337–346.
13. M. A. Kausor, S. Sen Gupta, D. Chakraborty, **2019**, Ag₃PO₄-based nanocomposites and their applications in Photodegradation of toxic organic dye contaminated wastewater: review on material design to performance enhancement, *Journal of Saudi Chemical Society*, 23, 20-41.
14. M. A. Kausor, D. Chakraborty, **2020**, Optimization of system parameters and kinetic study of photocatalytic degradation of toxic Acid Blue 25 dye by Ag₃PO₄@RGO nanocomposite, *Journal of Nanoparticle Research*, 22, 93.
15. M. A. Kausor, D. Chakraborty, **2020**, Facile fabrication of N-TiO₂/Ag₃PO₄@GO nanocomposite toward photodegradation of organic dye under visible light, *Inorganic Chemistry Communications*, 116, 107907.
16. M. A. Kausor, D. Chakraborty, **2021**, Graphene oxide based semiconductor photocatalysts for degradation of organic dye in waste water: A review on fabrication, performance enhancement and challenges, *Inorganic Chemistry Communications*, 129, 108630.
17. A. Kausor, D. Chakraborty, **2022**, Polyaniline (PANI) grafted hierarchical heterostructure nanocomposites for photocatalytic degradation of organic pollutants in waste water: A review, *Surfaces and Interfaces*, 31, 102079.
18. A. Kausor, S. Sen Gupta, K. G. Bhattacharyya, D. Chakraborty, **2022**, Montmorillonite and modified montmorillonite as adsorbents for removal of water soluble organic dyes: A review on current status of the art, *Inorganic Chemistry Communications*, 143, 109686.

In Books & Chapter in Books

1. D. Chakraborty, J.N. Ganguli, C.V.V. Satyanarayana, Synthesis and Characterization of Some Aluminophosphate Molecular Sieves, In: *Catalysis in Petroleum and Petrochemical Industries* (Eds. K. G. Bhattacharyya, A. K. Talukdar), **Narosa Publishing House, New Delhi** (ISBN: 81-7319-576-5), **2005**.
2. D. Chakraborty, *Studies on Microporous Aluminophosphate Molecular Sieves with AEL and AFO*

Framework, **LAP LAMBERT Academic Publishing, Germany** (ISBN: 978-3-659-33929-5), **2013**.

3. S. Sen Gupta, D. Chakraborty, Photo-Catalytic Removal of Dyes: A Study with N-doped Titania, **LAP LAMBERT Academic Publishing, Germany** (ISBN: 978-3-330-33269-0), **2017**.
4. M. A Kausor, D. Chakraborty, Carbon nitride photocatalysts for water treatment and purification. In: Nanostructured Carbon Nitrides for Sustainable Energy and Environmental Applications (Eds. S. Chowdhury, Mu. Naushad), **Elsevier**, (ISBN: 978-0-12-823961-2) pp. 137-174, **2022**.
5. M. A Kausor, D. Chakraborty, Photocatalytic decontamination of organic pollutants from water. In: Photocatalysts and Electrocatalysts in Water Remediation: From Fundamentals to Full Scale Applications (Eds. P Bhunia, K. Dutta, S. Vadivel), **John Wiley and Sons Limited** (ISBN 978-1-11-985531-6), **2022**.

In Conference/Seminar Proceedings

1. S. Islam, J.N. Ganguli, D. Chakraborty, Synthesis and characterization of some aluminophosphate molecular sieve, ***Proceeding of National Seminar on New Approaches of Basic Sciences Towards the Development of Engineering & Technology***, Assam Don Bosco University, Guwahati, 12-13 March, 2009.
2. S. Islam, J.N. Ganguli, D. Chakraborty, Synthesis and characterization of metal substituted microporous aluminophosphate molecular sieve, ***Proceeding of National Seminar on Materials Chemistry and Catalysis***, P.G. Department of Chemistry, North Orissa University, Orissa, 3-4 April, 2010.

Conference/Seminar attended with Paper Presentation

1. "Synthesis and characterization of microporous aluminophosphate molecular sieve, FeAPO-11", *Paper presented in 50th Annual Technical Session of Assam Science Society and National Conference on Current Trends of Research in Science and Technology*, Gauhati University, 28-29 January, 2005.
2. "Investigation of zirconium environment in microporous aluminophosphate molecular sieves with AEL framework", *Paper presented in 34th National Seminar on Crystallography, Indian Crystallographic Association*, Gauhati University, 10-12 January, 2005.
3. "Synthesis, characterization and catalytic study of ZrAPO-41 with AFO framework", *Paper presented in First International Conference on Multifunctional, Hybrid and Nanomaterials*, Tours, France, 15-19 March, 2009.
4. "Visible light photocatalytic degradation of dye by N-doped TiO₂: a case study with Acid blue 25", *Paper presented in National Seminar on Emerging Trends in Chemical Sciences*, Gauhati University, 30- 31 March, 2012.
5. "Adsorption and visible light photo-degradation of azo dye Orange II by Modified Titania", *Paper presented in National Seminar on Social Issues and Environment*, D K College, Mirza, 31 Jan & 1 Feb, 2014.

Invited Lectures for seminar:

1. Presented paper entitled "Visible light photocatalytic degradation of dye by N-doped TiO₂: A case study with Acid blue 25" as invited lecture in UGC-Sponsored National Seminar on *Emerging Trends in Chemical Sciences* organized by Department of Chemistry, Gauhati University, March 30-31, 2012.

Research Guidance:

Number of students awarded Ph. D : 02 (under Gauhati University)
Number of students pursuing Ph. D : 01 (under Gauhati University)

Sponsored Research Projects:

Sl. No	Title	Sponsoring Agency and Officer Concerned	Period	Amount (Rs.)	Achievements
1.	Synthesis and catalytical properties of substituted alumino-phosphate molecular sieves	UGC, New Delhi	2000-2002	42,000/-	completed (as PI)
2.	Synthesis and characterization of modified titania for photo-catalytic degradation of toxic dyes and phenolic compounds	UGC, New Delhi	2011-2014	6,65,500	Completed (as PI)
3.	Defluoridation of Water by Graphene-metal Ferrite Composite	DST, New Delhi	2014-2017	22,61,800	Completed (as CO-PI)
4.	Defluoridation of Water by using Banana (Musa sapientum) Peel	ASTEC, Assam	2018-2021	4,54,390	Completed (as Co-PI)

Potential Reviewer:

- Journal of Hazardous Materials
- African Journal of Pure and Applied Chemistry