

Curriculum Vitae Kuldeep Gogoi

Assistant Professor
Department of Chemistry
Devicharan Barua Girls' College
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Courses Taken (At B.Sc. Level)

2nd Semester: Organic Chemistry-C-201, C-201(Lab), GE-201, GE-201(Lab)

3rd Semester: Organic Chemistry-C-302, C-302(Lab), GE-301, GE-301(Lab)

4th Semester: Organic Chemistry-C-402, C-402(Lab)

5th Semester: Bio-Chemistry-C-501, C-501(Lab)

6th Semester: Organic Chemistry & Spectroscopy-C-602, C-602(Lab)

Academic Qualification

Ph.D. (2012- 2018): Indian Institute of Technology Guwahati

Thesis Title: Redox Reactions of NO_x (x=1, 2) with First Row Transition Metal Complexes

Supervisor: Prof. Biplab Mondal

M.Sc. (2010-2012): Indian Institute of Technology Guwahati

B.Sc. (2007-2010): Science College Jorhat, Dibrugarh University

Professional Details

Assistant Professor (Jan, 2021- Present)

Devicharan Barua Girls' College, Assam

Postdoctoral Fellow (Sep, 2018- Oct, 2020)

Korea Advanced Institute of Science and Technology (KAIST), South Korea

Research Associate (Feb, 2018- July, 2018)

Indian Institute of Technology Indore

Research Interest

Bio-inorganic chemistry, activation of small molecules, bioinspired catalysis

Ph.D. Research Summary

The research field was based on complex reactivity of various oxides of nitrogen (NO_x) towards bio-mimetic metal complexes. In biological system it is believed that most of those reactions proceed *via* the formation of nitrosyl complexes of metalloproteins. In this context we mainly focused on the following targets.

- Synthesis and characterization of metal-nitrosyl complexes and study of their reactivity towards various reactive oxygen species (e.g. O₂, O₂⁻, O₂²⁻) and H₂O.
- Synthesis and characterization of metal-dioxygen species and study of their reactivity

towards NO.

- Oxo transfer reactivity of metal coordinated nitrite species.
- Spectroscopic study and controlled experiments towards understanding of the mechanism of those redox reactions.

Honors and Awards

- ✓ Brain Korea 21 (BK21) Postdoctoral Fellowship, South Korea Government
- ✓ Best poster presentation award on National Symposium RTCS-2017 organized by NIT Meghalaya, India.
- ✓ Qualified National Eligibility Test (NET) held on June, 2012 organized by CSIR-UGC, India.
- ✓ Qualified Graduate Aptitude Test (GATE) held on 2012 in Chemistry, organized by MHRD, Government of India.
- ✓ Merit cum Means (McM) Scholarship, IIT Guwahati for excellence
- ✓ Qualified Joint Admission Test (JAM 2010) for M.Sc. in IITs and IISc, India.

Publications

1. Light-promoted C–Cl bond-forming reductive elimination of a metal–metal bonded Pd(III)–Pd(III) complex
Shin, J.; **Gogoi, K.**; Park, K.*
***Chem. Comm.* 2021, 57, 7673.**
2. Dioxygenation reaction of a cobalt-nitrosyl: Putative formation of a cobalt–peroxynitrite via a {Co^{III}(NO)(O₂⁻)} intermediate
Gogoi, K.; Saha, S.; Ghosh, S.; Deka, H.; Mondal, B.; Mondal, B.*
***Inorg. Chem.* 2017, 56, 14438.**
3. Reaction of a Co(III)-peroxo complex and NO: Formation of a putative peroxynitrite intermediate
Saha, S.; Ghosh, S.; **Gogoi, K.**; Deka, H.; Mondal, B.; Mondal, B.*
***Inorg. Chem.* 2017, 56, 10932.**
4. Reaction of a Nitrosyl Complex of Cobalt Porphyrin with Hydrogen Peroxide: Putative Formation of Peroxynitrite Intermediate
Saha, S.; **Gogoi, K.**; Mondal, B.; Ghosh, S.; Deka, H.; Mondal, B.*
***Inorg. Chem.* 2017, 56, 7781.**
5. Nitric oxide reactivity of a Cu(II) complex of an imidazole based ligand: Aromatic C-nitrosation followed by the formation of N-nitrosohydroxylaminato complex
Deka, H.; Ghosh, S.; **Gogoi, K.**; Saha, S.; Mondal, B.*
***Inorg. Chem.* 2017, 56, 5034.**
6. Effect of ligand denticity on the nitric oxide reactivity of cobalt(II) complexes
Deka, H.; Ghosh, S.; Saha, S.; **Gogoi, K.**; Mondal, B.*
***Dalton Trans.* 2016, 45, 10979.**
7. Reductive nitrosylation of nickel(II) complex by nitric oxide followed by nitrous oxide release

Ghosh, S.; Deka, H.; Dangat, Y. B.; Saha, S.; **Gogoi, K.**; Vanka, K.; Mondal, B.*
Dalton Trans. 2016, 45, 10200.

8. Oxo transfer from nitrogen dioxide to nitrito group in a copper(II) complex
Gogoi, K.; Deka, H.; Kumar, V.; Mondal, B.*
Inorg. Chem. 2015, 54, 4799.
9. Decyl and nonanyl bisphenols as prospective surfactant
Baruah, J. B.*; **Gogoi, K.**; Nath, B.; Goswami, A.
J. Sci. Ind. Res. 2014, 73, 231.
10. Recent Advances in Transition Metal Based Catalytic Hydrogenation of Carbon Dioxide (CO₂) into Formic Acid
Kuldeep Gogoi (Editor and Author)
Recent Trends in Science and Technology, 2022
AkiNik Publications, New Delhi

Conferences

1. The International Conference on Bioinspired Small Molecule Activation & The 2019 Summer Bioinorganic Chemistry Symposium, 2019, Ewha Womans University, South Korea.
2. Emerging Trends in Chemical Science (ETCS), 2018, Department of Chemistry, Gauhati University, India.
3. Recent Trends in Chemical Science (RTCS), 2017, Department of Chemistry, NIT Meghalaya, India.
4. Frontiers in Chemical Sciences (FICS), 2016, Indian Institute of Technology Guwahati, Assam, India.

Seminar/Workshop/Faculty Development Program

1. One week Faculty Development Programme (FDP) on 'Implementation of NEP 2020 in Higher Education Institutions' organized by Teaching Learning Centre, Tezpur University, 2023.
2. One week Faculty Development Programme (FDP) on 'Micro Teaching' organized by Department of Education, D.C.B. Girls' College, 2023.
3. Two days' Workshop R&D funding opportunities by SERB-DST: Awareness workshop for researchers from North-East institutions, 2022.
4. One week Faculty Development Programme on Stress Management organized by IQAC, D.C.B. Girls' College in collaboration with ICT Academy, 2022.
5. One month (30 days) Faculty Induction Programme (FIP-2021) organized by Teaching Learning Center, Tezpur University, Assam, 2021