

Curriculum vitae

Name: Dr. Mrinal Saikia
Date of Birth: 01/03/1990
Father's name: Anil Saikia
Mother's name: Manju Saikia
Religion: Hindu
Caste: General
Sex : Male
Marital Status: Married
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Address for Communication

Permanent Address:

S/O Anil Saikia
Vill: Rongdoi Dow Gaon, Bahona Tini-Ali
P.O. Bahona Tini-Ali
Jorhat, 785101
Assam, India.

Communication Address:

Department of Chemistry
D.K.D. College, Dergaon
Golaghat, Assam, 785614

Educational Qualifications

| Exam Passed | University/ Board | Year Passed | Class/Division |
|---------------------------|----------------------|-------------|----------------|
| HSLC | SEBA | 2005 | I |
| HS | AHSEC | 2007 | I |
| B.Sc. (Chemistry) | Dibrugarh University | 2010 | I |
| M.Sc. (Chemical Sciences) | Tezpur University | 2012 | I |
| Ph.D. | AcSIR, CSIR-NEIST | 2018 | - |

***Thesis Title:** Synthesis, Characterization and Activity Study of Metal, Metal Oxide Nanoparticles and Polyoxometalate Supported on MIL-101(Cr).

Supervisor: Dr. Lakshi Saikia, Scientist, CSIR-NEIST, Jorhat, Assam.

Research Experience

| Designation | Organization / Institute | Period | Duty Responsibilities |
|--|-----------------------------------|----------------------------|------------------------|
| Junior Research Fellow (CSIR-UGC, NET) | CSIR-NEIST, Jorhat | January 2013 to July 2013 | Research & Development |
| Junior Research Fellow (INSPIRE-DST) | CSIR-NEIST, Jorhat | August 2013 to July 2015 | Research & Development |
| Senior Research Fellow (INSPIRE-DST) | CSIR-NEIST, Jorhat | August 2015 to August 2017 | Research & Development |
| Assistant Professor | D.K.D. College, Dergaon, Golaghat | January 2020 to till date | Research & Development |

Teaching Experience

| Designation | Organization / Institute | Period | Duty Responsibilities |
|---------------------|-----------------------------------|---------------------------|-----------------------|
| Assistant Professor | D.K.D. College, Dergaon, Golaghat | January 2020 to till date | Teaching |

Awards/Fellowships/Achievements

- Cleared Joint CSIR-UGC Test for Junior Research Fellowship and Eligibility for Lectureship (NET) held on 17-06-2012 as Junior Research Fellow and secured 0091/1054 rank in the subject Chemical Sciences under UGC Fellowship scheme.
- Cleared Graduate Aptitude Test in Engineering (GATE) examination (All India Rank 314) organized by Indian Institute of Technology Bombay in the year 2013.
- Gold Medal for securing the first position in the Master's Degree Examination in Chemical Sciences was awarded by Tezpur University in the year 2012.
- Applied Chemistry Education Award for securing the first position in the Master Degree Examination in Applied Chemistry was presented by Tezpur University in the year 2012.

- Selected for the award of “Innovation in Science Pursuit for Inspired Research” (INSPIRE) Fellowship by DST in the year 2013.
- Certificate of Appreciation has been awarded by the Director, CSIR-NEIST, Jorhat in the occasion of 55th CSIR-NEIST Foundation Day in recognition best performing SRF for the year 2015-16.
- An article entitled “Facile synthesis of Fe₃O₄ nanoparticles on metal organic framework MIL-101(Cr): characterization and catalytic activity” authored by **Mrinal Saikia**, Diganta Bhuyan and Lakshi Saikia was appeared in Front Cover page of the journal New Journal of Chemistry (ISSN 1144-0546) published by Royal Society of Chemistry in its January 2015 issue.
- The Sitanath Borbora and Labanya Prabha Borbora memorial Trust Fund Cash Prize was awarded for securing the highest marks in Chemistry Major within J. B. College in the TDC examination 2010 conducted by Dibrugarh University.
- The Jayanta Madhab Borthakur Memorial Trust Fund Cash Prize was awarded for securing the highest marks in Chemistry Major within J. B. College in the TDC examination 2010 conducted by Dibrugarh University.

Skills and Experiences

- ✓ Capable in synthesizing new composites of Metal-Organic Framework as catalyst system for important organic transformations.
- ✓ Capable in handling sophisticated instruments like (i) FESEM (Sigma) (ii) Microwave reactor (CEM, Discover) (iii) FT-IR (Shimadzu), (iv) UV-Visible (Shimadzu), (v) TG-DSC (TA instruments, SDT Q-600), (vi) High Pressure reactors (Parr Instruments and Autoclave Engineers) (vii) Surface Area and Pore Volume Analyzer (Quantachrome), (viii) GC (Thermo-Fisher Scientific), (ix) Powder XRD (Rigaku Ultima IV), (x) TPD/TPO/TPR Instrument (Quantachrome), (xi) Flash Chromatography (Agela Technologies).
- ✓ Experienced in handling of different gas cylinders like, H₂, O₂, Zero air, and highly sensitive reagents/reactions as well as high pressure reactions.
- ✓ Well versed in computer skills including MS Word, Excel, Power Point, ISIS-Draw, Chem Draw, Origin, Mercury, Ortep and scientific databases such as SciFinder, Scopus etc.

Research Publications

A. Papers Published in SCI Journals:

1. Facile synthesis of Fe₃O₄ nanoparticles on metal organic framework MIL-101(Cr): characterization and catalytic activity.
New J. Chem., 2015, **39**, 64-67.
Mrinal Saikia, Diganta Bhuyan and Lakshi Saikia.
2. Keggin type phosphotungstic acid encapsulated chromium (III) terephthalate metal organic framework as active catalyst for Biginelli condensation.
Appl. Catal., A., 2015, **505**, 501-506.
Mrinal Saikia, Diganta. Bhuyan and Lakshi Saikia.
3. Sulfonic acid-functionalized MIL-101(Cr) as a highly efficient heterogeneous catalyst for one-pot synthesis of 2-amino-4*H*-chromenes in aqueous medium.
RSC Adv., 2016, **6**, 15846-15853.
Mrinal Saikia and Lakshi Saikia.
4. Palladium nanoparticles immobilized on an amine-functionalized MIL-101(Cr) as a highly active catalyst for oxidative amination of aldehydes.
RSC Adv., 2016, **6**, 14937-14947.
Mrinal Saikia and Lakshi Saikia.
5. Gold nanoparticles supported on nanoscale amine functionalized MIL-101(Cr) as a highly active catalyst for epoxidation of styrene.
RSC Adv., 2016, **6**, 106856-106865.
Mrinal Saikia, Vasily Kaichev and Lakshi Saikia.
6. Magnetically recoverable Fe₃O₄@SBA-15: An improved catalyst for three component coupling reaction of aldehyde, amine and alkyne.
Catal. Commun., 2015, **58**, 158-163.
Diganta Bhuyan, **Mrinal Saikia** and Lakshi Saikia.
7. Photocatalytic performance of ZnO nanomaterials for self sensitized degradation of malachite green dye under solar light.
Appl. Catal., A., 2015, **490**, 42-49.
Lakshi Saikia, Diganta Bhuyan, **Mrinal Saikia**, Banajit Malakar, Dipak Kumar Dutta and Pinaki Sengupta.
8. Facile synthesis of gold nanoparticles on propylamine functionalized SBA-15 and effect of surface functionality of its enhanced bactericidal activity against gram positive bacteria.
Materials Research Express, 2015, **2**, 075402 (1-10).

Diganta Bhuyan, Animesh Gogoi, **Mrinal Saikia**, Ratul Saikia and Lakshi Saikia.

9. Block copolymer assisted synthesis of ZnO nanoparticles and its photocatalytic activity study under solar irradiation.
Journal of Nanoengineering and Nanomanufacturing, 2015, **5**, 170–175 (6).
Diganta Bhuyan, **Mrinal Saikia** and Lakshi Saikia.
10. ZnO nanoparticles embedded in SBA-15 as an efficient heterogeneous catalyst for the synthesis of dihydropyrimidinones via Biginelli condensation reaction.
Microporous Mesoporous Mater., (2017),
doi:10.1016/j.micromeso.2017.06.052
Diganta Bhuyan, **Mrinal Saikia** and Lakshi Saikia.
11. Investigation of Keto-enol Tautomers during the Synthesis of Aryl-bis (2-hydroxy-1-naphthyl)Methanes
Journal of Chemical Sciences, 2014, **6**, 1629–1634.
Papia Dutta, **Mrinal Saikia**, Rashmi Jyoti Das and Ruli Borah.
12. Phosphotungstic acid supported on amine-functionalized MIL-101(Cr): An active catalyst for one pot synthesis of 3,4-dihydropyrimidin-2(1H)-ones
International Journal of Research and Analytical Reviews, 2023, **10**, 42-50
Mrinal Saikia

B. Book Chapter:

1. Mesoporous SBA-15: A Superior Heterogeneous Catalytic Support for Multicomponent Organic Synthesis.
Advances in organic synthesis, 2018, **Vol. 10**, 197-247.
ISBN (print):978-1-68108-744-3
ISBN (online): 978-1-68108-743-6
Diganta Bhuyan, **Mrinal Saikia**, Pallab kumar Saikia and Lakshi Saikia.
2. Solvent-free Chemoselective Transfer Hydrogenation of Nitroaromatics over Fe₃O₄@MIL-101(Cr) Nanocomposite
Trends in Environment Responsive Chemical Processes, 2019, 12-25.
ISBN: 978 93 88510 97 4
Mrinal Saikia and Lakshi Saikia.
3. Synthesis, Characterization and Activity study of Metal, Metal oxide Nanoparticles and Polyoxometalate supported on MIL-101(Cr)
Summary of Doctoral Theses Vol-X
ISBN: 978-93-93864-13-0
Mrinal Saikia

4. MIL-101(Cr)-SO₃H: An Efficient Heterogeneous Catalyst for catalyzing Biginelli Condensation Reaction
Spectrum: A Hybrid Edited Book of Chemical, Mathematical and Physical Sciences

ISBN: 978-81-965169-8-7

Mrinal Saikia

5. MIL-101(Cr): A highly efficient heterogeneous catalyst for one-pot synthesis of 2-amino-4H-chromenes in aqueous medium

Spectrum: A Multidisciplinary Research Book in Science (Vol-I)

ISBN: 978-93-89904-99-4

Mrinal Saikia

C. Seminars/Conferences/Workshop /FIP/FDP attended:

1. In-situ synthesis of Fe₃O₄ nanoparticles onto metal organic framework MIL-101(Cr) and its catalytic activity towards oxidation of benzyl alcohol.
13th Eurasia Conference on Chemical Sciences (EuAsC₂S-13) December 14-18, 2014.

Indian Institute of Science, Bangalore, INDIA- 560012, Abstract No. OMCC - 97.

Mrinal Saikia, Diganta Bhuyan and Lakshi Saikia.

2. PTA@M MIL-101: An efficient heterogeneous catalyst for one pot synthesis of 3,4-dihydropyrimidin-2(1H)-ones via the Biginelli condensation.

National Conference on New Frontiers in Chemistry from Fundamentals to Applications (NFCFA 2015) December 18-19, 2015, Department of Chemistry, BITS PILANI KK Birla Goa Campus, Goa, 403726, Abstract No. P 38.

Mrinal Saikia, Diganta Bhuyan and Lakshi Saikia.

3. One pot synthesis of Palladium nanoparticles on an amine-functionalized MIL-101(Cr): characterization and catalytic activity towards oxidative amination of aldehydes.

Materials Research Society of India, Symposium on Advanced Materials for Sustainable Applications, MRSI NORTH EAST 18-21 February 2016 CSIR-NEIST, JORHAT, Abstract No. PP 54.

Mrinal Saikia, Diganta Bhuyan and Lakshi Saikia.

4. Metal organic framework MIL-101(Cr)-SO₃H: an efficient heterogeneous catalyst for one pot synthesis of 2-amino-4H-chromenes in aqueous medium.
National Symposium on Natural Products: Prospects & Perspectives (NPPP-2016), March 21-22, 2016, CSIR-NEIST, Jorhat, Assam.

Chemical Research Society of India, North-East Chapter & CSIR-North East Institute of Science and Technology Jorhat-785006, India, Abstract No. PP - 054.

Mrinal Saikia and Lakshi Saikia.

- 5.** Synthesis of gold nanoparticles on amine functionalized MIL-101(Cr): characterization and catalytic activity towards epoxidation of styrene.
20th CRSI National Symposium in Chemistry, 3rd -5th February, 2017 and 11th CRSI-RSC Symposium 2nd February, 2017.
Department of Chemistry, Gauhati University, Guwahati, Assam, India,
Abstract No. PP - 221.
Mrinal Saikia and Lakshi Saikia.
- 6.** MIL-101(Cr)-SO₃H: An Efficient Heterogeneous Catalyst for One Pot Synthesis of 3,4-Dihydropyrimidin-2(1H)-ones Via The Biginelli Condensation.
International Conference on Molecular Structure & Instrumental Approaches, 26-27th November, 2020
Department of Chemistry, School of Science, RK University
Mrinal Saikia
- 7.** PTA@MIL-101(Cr): A highly efficient heterogeneous catalyst for one-pot Synthesis of 2-amino-4H-chromenes in aqueous medium.
International Conference on “The Present and Future of Excellence in Organic Synthesis (PFEOS-2021)”, 07-08th January, 2021.
Department of Chemical Sciences, Tezpur University, Assam
Mrinal Saikia
- 8.** Fe₃O₄@MIL-101(Cr): An improved magnetically recoverable catalyst for A³ coupling reaction.
International Conference on “MATERIALS CHEMISTRY AND CATALYSIS”, 04-05th March, 2021.
Department of Chemical Sciences, Tezpur University, Assam
Mrinal Saikia
- 9.** Au/NH₂-MIL-101(Cr): An efficient catalyst for one-pot synthesis of propargylamines.
National Seminar on Sustainability, Medicine and Clean Energy, February 27-March 1, 2022
Department of Chemical Sciences in association with inSCIgnis, Tezpur University, Assam
Mrinal Saikia
- 10.** Synthesis of Palladium nanoparticles on sulfonic acid-functionalized MIL-101(Cr): Characterization and catalytic activity study towards oxidative amination of aldehydes.
International Conference on Recent Advances in Materials Chemistry and Catalysis, 01-03th March, 2023
Department of Chemistry, Dibrugarh University
Mrinal Saikia

- 11.** Phosphotungstic acid supported on amine- functionalized MIL-101(Cr): A highly efficient heterogeneous catalyst for one-pot synthesis of 2-amino-4H-chromenes in aqueous medium.
International Conference on Futuristic Materials for Sustainable Development Goals-2024 (FMSDG-2024), 09-10th January, 2024
Department of Chemistry, University Institute of Science, Chandigarh University
Mrinal Saikia
- 12.** Attended Online Faculty Induction Programme organized by HRDC, Aligarh Muslim University, Aligarh from 17th July 2021 to 24th August 2021.
- 13.** Attended One week National workshop on “Augmentation of Skills for Multidisciplinary Research” organized by J.B. College Women Cell and the Research and Development Cell (R.D.C.), J.B. College from 19th January 2024 to 25th January 2024.
- 14.** Attended One week Faculty Development Programme (FDP) on “Aspects of Pedagogical Re-design and Online Teaching- Learning Process” organized by IQAC Dhemaji College and IQAC Dibrugarh University, Dibrugarh, Assam from 15th July 2020 to 21th July 2020.
- 15.** Attended Seven-day Faculty Development Programme (FDP) on “Recent Advances in Chemistry” organized by Department of Chemistry, School of Science, RK University, Rajkot, Gujarat from 27th December 2021 to 4th January 2022.
- 16.** Attended One-week Faculty Development Programme (FDP) on “Teaching Pedagogy” organized by IQAC of Dr. R.K.B. Law College, Dibrugarh, Assam and Skillfinity & academic support from Teaching Learning Centre, Tezpur University from 22nd June 2020 to 28th June 2020.
- 17.** Attended UGC-Approved Short- term Professional Development Programme under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching on “Implementation of NEP-2020 for University and College Teachers” organized by IGNOU, New Delhi from 12th June 2023 to 20th June 2023.
- 18.** One day workshop on “Role of Colleges in Mitigation of Arsenic and Fluoride Problem in Assam: An Unicef Assam Initiative” organized by Department of Chemical Sciences, Tezpur University, Tezpur, Assam on 24th February 2020.

Extracurricular activities

- Actively involved as participants in different sports activities organized under Assam College Teachers’ Association Golaghat Zonal Committee.

Organizational Experiences

- Secretary, D.K.D. College Science Society.
- Assistant Nodal Officer, Internship and Community Engagement Cell, D.K.D. College, Dergaon.
- Counting Officer, Students Union Election committee.
- Polling Officer, Students Union Election committee.
- Teacher in Charge for student's participation in inter-college volleyball competition under Dibrugarh University.
- Member of organizing committee of Naren Sharma Memorial all Assam inter college Debate Competition at Degaon Kamal Dowerah College, Dergaon, Golaghat
- Member of organizing committee of Dibrugarh University inter college Youth Festival 2021-2022 at Dergaon Kamal Dowerah College, Dergaon, Golaghat.
- Member of organizing committee of Harakanta Mahanta Memorial lecture at Degaon Kamal Dowerah College, Dergaon, Golaghat.
- Member of organizing committee of foundation day celebration of the college.
- Convener of the verification committee for distributing Banikanta Kakoty Award (Scooty) among the beneficiary students.

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