

## BIO-DATA

❖ Name and Address: Dr. Lakshi Saikia

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- ❖ Academic Qualification: M.Sc with Inorganic Chemistry Specialization from Gauhati University and Ph.D. from CSIR-National Chemical Laboratory, Pune, India in 2008.
- ❖ Research experience and interest: More than 15 years experience in the area of heterogeneous catalysis.
- ❖ Research interest is on Nanostructured materials for Catalysis, Carbon nanomaterials, Photocatalysis, Sensing and environment, Nanoporous materials, Metal Organic Frameworks
- ❖ Total paper published in SCI journals- 66, *h*-index-21

List of publication of last five years:

Document Title	Authors	Year	Journal
Photocatalytic Reduction of CO <sub>2</sub> to Methanol using Zr(IV)-based MOF Composite with g-C <sub>3</sub> N <sub>4</sub> Quantum Dots under Visible Light Irradiation	K Sonowal, N Nandal, P Basyach, L Kalita, S L Jain and L Saikia	2022	Journal of CO <sub>2</sub> Utilization (IF- 7.132)
Development of quantum dot complex for selective detection of pyrophosphate	M Gogoi, A Borborah and L Saikia	2021	Bulletin of Materials Science (IF- 1.392)

anion with fluorescence quenching			
Nanofiber induced enhancement of electrical and electrochemical properties in polymer gel electrolytes for application in energy storage devices	S Borah, AK Guha, L Saikia, M Deka	2021	Journal of Alloys and Compounds (IF- <b>5.316</b> )
CuCo-Layered Double Hydroxide Nanosheet-Based Polyhedrons for Flexible Supercapacitor Cells	L Kumar, PK Boruah, S Borthakur, L Saikia, MR Das, S Deka	2021	ACS Applied Nano Materials (IF-5.097)
Endorsing Organic Porous Polymers in Regioselective and Unusual Oxidative C=C Bond Cleavage of Styrenes into Aldehydes and Anaerobic Benzyl Alcohol Oxidation via Hydride Elimination	D Pathak, R Khatioda, H Sharma, AK Guha, L Saikia, B Sarma	2021	ACS Applied Materials & Interfaces (IF- <b>9.229</b> )
Influence of solvent on morphological texture and catalytic activity of SnO <sub>2</sub> nanoparticles	S Saikia, P Deka, L Saikia, RC Deka	2021	International Journal of Nanotechnology (NA)
Stable Lead-halide Perovskite Quantum Dots as Efficient Visible Light Photocatalysts for Organic Transformations	S Pradhan, D Bhujel, B Gurung, D Sharma, S Basel, S Rasaily, Sa Thapa, <b>S Borthakur</b> , W Li Ling, <b>L Saikia</b> , P Reiss, A Pariyar and S Tamang	2021	Nanoscale Advances (If- 4.553)
Tunable NIR-II	K, S Pradhan, S Basel, M	2020	Dalton Transactions

Emitting Silver Chalcogenide Quantum Dots using Thio/Selenourea Precursors: Preparation of MRI/NIR-II Multimodal Imaging Agent	Clarke, B Brito, S Thapa, P Roy. <b>S Borthakur, L Saikia</b> , A Shankar, G J. Stasiuk, A Pariyar and S Tamang		[IF-4.147]
Hydrodistillation based multifaceted value addition to Kaempferia galanga L. leaves, an agricultural residue	B P Mahanta, N Sarma, Phirose Kemprai, T Begum, <b>L Saikia</b> , M Lal and S Haldar	2020	Industrial Crops and Products [IF- 4.28]
Efficient hydroxylation of benzene to phenol by H <sub>2</sub> O <sub>2</sub> using Ni doped CuWO <sub>4</sub> on carbon nitride as catalyst under solar irradiation and its structure activity correlation	Purashri Basyach, Ankur Kanti Guha, Sukanya Borthakur, Lisamoni Kalita, Pubali Chetia, Karanika Sonowal and Lakshi Saikia	2020	Journal of Materials Chemistry A ( IF- 12.73)
Boosting Multiple Photo-Assisted and Temperature Controlled Reactions with a Single Redox-Switchable Catalyst: Solvents as Internal Substrates and Reducing Agent	M J Baruah, M Sharma, B Das, P Saikia, <b>L Saikia</b> , S Roy, G V Karunakar, P K Bhattacharyya and K K Bania	2020	Journal of Catalysis [IF- 7.92]
A ferrocene functionalized Schiff base containing Cu(ii) complex: synthesis, characterization and parts-per-million level catalysis for azide alkyne	F Rahaman Gayen, AAziz Ali, D Bora, S Roy, S Saha, <b>L Saikia</b> , R L Goswamee and B Saha	2020	Dalton Transactions [IF- 4.147]

cycloaddition			
Palladium-Supported Nanoceria: A Highly Efficient Catalyst for Solvent-Free Selective Oxidation of Ethylbenzene to Acetophenone	L Kalita and <b>L Saikia</b>	2020	ChemistrySelect [IF- 2.1]
Pd-NiO-Y/CNT Nanofoam: A Zeolite-Carbon Nanotube Conjugal Exhibiting High Durability in Methanol Oxidation	M Sharma, B Das, M J Baruah, P K Bhattacharyya, <b>L Saikia</b> and K K Bania	2020	Chemical Communications [IF- <b>6.164</b> ]
Sun Light Assisted Degradation of Pollutant dye in water by WO <sub>3</sub> @g-C <sub>3</sub> N <sub>4</sub> Nanocomposite Catalyst	S Borthakur, L Kalita, P Basyach, K Sonowal and <b>L Saikia</b>	2020	New Journal of Chemistry [IF- 3. 6]
Few-layer MoS <sub>2</sub> wrapped MnCO <sub>3</sub> on graphite paper: A hydrothermally grown hybrid negative electrode for electrochemical energy storage	A Mukherji, <b>L Saikia</b> , R Srivastava	2019	Chemical Engineering Journal [IF- <b>13.273</b> ]
Separation of ultrafine chalcogenide particles using Fe <sub>3</sub> O <sub>4</sub> magnetic nanoparticles and ligands with metal selectivity	M Gogoi, P Boruah, P Sengupta, <b>L Saikia</b>	2019	Mineral Engineering [IF- <b>4.765</b> ]
ZnFe <sub>2</sub> O <sub>4</sub> @g-C <sub>3</sub> N <sub>4</sub> nanocomposites: An efficient catalyst for Fenton-like photodegradation of environmentally	S Borthakur, <b>L Saikia</b>	2019	Journal of Environmental Chemical Engineering [IF- <b>5.9</b> ]

pollutant Rhodamine B			
Selective hydrogenation of nitroarenes to amines by ligand-assisted Pd nanoparticles: influence of donor ligands on catalytic activity	GD Kalita, PP Sarmah, PK Saikia, <b>L Saikia</b> , P Das	2019	New Journal of Chemistry [ <b>IF- 3.6</b> ]
ZnO nanoparticles embedded in SBA-15 as an efficient heterogeneous catalyst for the synthesis of dihydropyrimidinones via Biginelli condensation reaction	D Bhuyan, M Saikia, <b>L Saikia</b>	2018	Microporous and Mesoporous Material [ <b>IF- 5.455</b> ]
Scavenging Pd <sup>2+</sup> on Amine-Functionalized SBA-15: A Facile Synthesis of Leach-Free Pd <sup>0</sup> Nanocatalyst for Base-Free Chemoselective Transfer Hydrogenation of Olefins	D Bhuyan, <b>L Saikia</b>	2017	ChemistrySelect [ <b>IF- 2.1</b> ]
( $\mu$ -O,O')-nitrito bridged 3-D coordination frameworks of M <sup>2+</sup> (Mn Co, Zn) with mab and jsm topology	R Paul, AK Guha, <b>L Saikia</b> , SJ Bora	2017	Journal of Solid State Chemistry [ <b>IF- 3.498</b> ]
Pd@SBA-15 nanocomposite catalyst: Synthesis and efficient solvent-free semihydrogenation	D Bhuyan, K Selvaraj, <b>L Saikia</b>	2017	Microporous and Mesoporous Materials [ <b>IF- 5.455</b> ]

of phenylacetylene under mild conditions			
A green synthesis of Pd nanoparticles supported on modified montmorillonite using aqueous <i>Ocimum sanctum</i> leaf extract: a sustainable catalyst for hydrodechlorination of 4-chlorophenol	PK Saikia, RP Bhattacharjee, PP Sarmah, <b>L Saikia</b> , DK Dutta	2016	RSC Advances [ <b>IF-3.36</b> ]
Gold nanoparticles supported on nanoscale amine-functionalized MIL-101(Cr) as a highly active catalyst for epoxidation of styrene	M Saikia, V Kaichev, <b>L Saikia</b>	2016	RSC Advances [ <b>IF-3.36</b> ]
Stabilized Fe <sub>3</sub> O <sub>4</sub> magnetic nanoparticles into nanopores of modified montmorillonite clay: a highly efficient catalyst for the Baeyer–Villiger oxidation under solvent free conditions	PK Saikia, PP Sarmah, BJ Borah, <b>L Saikia</b> , K Saikia, DK Dutta	2016	Green Chemistry [ <b>IF-9.405</b> ]
Functionalized montmorillonite supported rhodium complexes: Efficient catalysts for carbonylation of methanol	PK Saikia, PP Sarmah, BJ Borah, <b>L Saikia</b> , DK Dutta	2016	Journal of Molecular Catalysis A: Chemical [ <b>IF- 5.062</b> ]
Aromatic ring hydrogenation catalysed by nanoporous	P Das, PP Sarmah, BJ Borah, <b>L Saikia</b> , DK Dutta	2016	New Journal of Chemistry [ <b>IF- 3.6</b> ]

montmorillonite supported Ir(0)-nanoparticle composites under solvent free conditions			
Sulfonic acid-functionalized MIL-101(Cr) as a highly efficient heterogeneous catalyst for one-pot synthesis of 2-amino-4H-chromenes in aqueous medium	M Saikia, <b>L Saikia</b>	2016	RSC Advances [ <b>IF-3.36</b> ]
Palladium nanoparticles immobilized on an amine functionalized MIL-101(Cr) as a highly active catalyst for oxidative amination of aldehydes	M Saikia, <b>L Saikia</b>	2016	RSC Advances [ <b>IF-3.36</b> ]
Effects of deposition temperature on structural, optical and electrical properties of TEA complexed nanocrystalline films of PbS prepared from lead acetate with reduced concentration	BJ Baruah, MN Bora, <b>L Saikia</b> , D Saikia, P Phukan, KC Sarma	2016	Journal of Materials: Materials for Electronics [ <b>IF-2.195</b> ]

❖ Detail of patents. Granted patent No. : 2

S. No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1	A process for the preparation of	Darbha Srinivas, Paul	2008352536	2013.06.13	Australia	Granted

	primary alkyl glycerol ethers useful as biofuel additive from glycerol	Ratnasamy and <b>Lakshi Saikia</b>				
2	A process for the preparation of primary alkyl glycerol ethers useful as biofuel additive from glycerol	Darbha Srinivas, Paul Ratnasamy and <b>Lakshi Saikia</b>	2,718,474	2014.04.24	Canada	Granted

- ❖ Invited Talks: 17
  - ❖ Books: 1, Book Chapter: 3
  - ❖ Project as PI: 3(DST), 1 (DBT), 3 (CSIR), 1 (CPCB)
- As Co-PI: 4

**Awards/ honour/ recognition:.**

- Best Oral Presentation by PhD student Miss Sukanya Borthakur during International Conference ESTEC-2020 held CSIR-NEIST, Jorhat during 18-21 February, 2020.
- Best Poster Presentation by Miss Karanika Sonowal in International Conference FAST 2.0 organized by CIT, Kokrajhar during 20-21 October, 2020.
- Best Poster Presentation by Miss Lisamoni Kalita during International Conference ESTEC-2020 held CSIR-NEIST, Jorhat during 18-21 February, 2020.
- Best Oral Presentation by PhD student Miss Sukanya Borthakur during SUCHEMYUVA held at CSIR-IICT, Hyderabad in 2019.
- Best Oral Presentation in International Conference APCAT-7 held in Hotel Lalit, Mumbai during 17-20 January, 2017
- A paper entitled “Facile synthesis of Fe<sub>3</sub>O<sub>4</sub> nanoparticles on metal organic framework MIL-101(Cr): characterization and catalytic activity” by M Saikia, D Bhuyan and **L Saikia** published in **New Journal of Chemistry**, 39(1), 64-67, (2015) is considered to appear as **Front Cover Page** article in January, 2015.
- A paper published in **Journal of Catalysis**, **252**, 148-160 (2007) was **Top 25 Hottest Article** in January-March 2008.

- A paper **Macromolecular Symposia, 287, 80-88, (2010)** was one of the **Most access article** in 2011 of this journal.
- MRSI prize for the **Best Poster** Paper entitled "Green synthesis of Silver Nanoparticles using Ocimum sanctum Leaf Extract: in vitro Antimicrobial Activity Against Gram-Negative Bacteria" at the **MRSI National Symposium on Advanced Materials for Sustainable Applications and 27th AGM of MRSI** held at Jorhat during February 18-20, 2016
- **Best Poster Award:** National Science Day 2008 observed in National Chemical Laboratory, Pune.

### **Work Experience**

- ❖ A couple projects are completed with self as Principal Investigator including one **International Collaborative project** under DST-RFBR scheme with Boreskov Institute of Catalysis, Russia and 3 (three) projects completed as PI in CSIR XII Five year plan project. One project is implemented for creation of facilities like FESEM-EDS, HRTEM, HRMS, AFM with self as Co-PI at CSIR-NEIST.
- ❖ 4 Students are awarded Ph.D and currently guiding 4 (four) Ph.D. students are pursuing Ph.D.
- ❖ Research Associate/ PDF/ Women Scientist: 3
- ❖ MSc/ MTech/ BSc trainee: 16
- ❖ **Editorial Board member** of "Modern Research in Catalysis" published by Scientific Research Publishers, USA
- ❖ **Reviewer of journals like** ACS-Applied Materials & Interface, Applied Catalysis B: Environmental, Journal of Catalysis, Chemical Communications, RSC Advances, Microporous and Mesoporous Materials, Applied Catalysis A: General, Journal of Photochemistry and Photobiology: Chemistry, ChemistrySelect, Chemosphere, Journal of Hazardous Materials, Journal of Environmental Chemical Engineering, Catalysis Communications etc.