
Dr. L. Satish K. Achary

Assistant Professor (OES-I)
Department of Chemistry
Government Degree College Koraput
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Nationality - Indian

Current Position

- **Assistant Professor** Stage-1 in Department of Chemistry, **Government Degree College**, Koraput. (2023-continue)
- Former **Postdoctoral Researcher** in Soft Matter Hybrid Laboratory, School of Advanced Materials Science and Engineering, **Sungkyunkwan University** Natural Sciences Campus 2066 Seobu-ro, Jangan-gu, **Suwon, 16419, Republic of Korea**. (2022-2023)
- Former **Assistant Professor** in Department of Chemistry, **C.V Raman Global University** (earlier known CV Raman college of engineering). (2020-2022)

Research Interest

Synthesis of Nitrogen-based Biologically Important Heterocyclic Molecules, Synthesis and Characterization of Supported Metal/Metal Oxide Nanoparticles, Acid Functionalized Graphene Oxide Hybrid System for Catalysis, Reduced Graphene Oxide Supported Metal Oxide based Sensors.

Academic Qualification

- **PhD degree in Chemistry** under the supervision of **Dr. Priyabrat Dash**, Associate Professor, Department of chemistry, **NIT, Rourkela**. PhD thesis title: “**Rational Design of Highly Active and Sensitive Graphene Oxide-based Catalyst and Sensor Materials**”. (Date of award: 21st March 2021).
- **Master’s degree (M.Sc.) in Chemistry** from **Berhampur University**, Berhampur, Odisha, India in 2013.
- **Bachelor’s degree (B.Sc.) in Chemistry (H), Math. (P) Physics (M)** from **Vikram Dev auto. college**, Jeypore, Odisha, India in 2011.
- **12th (Mathematics, Physics, Chemistry, Biology)** from **S.K.C.G Junior College**, Paralakhemundi, Gajapati, (CHSE Board) Odisha, India in 2008.
- **10th** from Board of Secondary Education (BSE) Odisha, India in 2006.

List of Publications Total Citations = 688, h-index= 14, i-10 index= 15 (google scholar)

Published in SCI Journal:

19. **L. S. K. Achary**, R. Parida, A. Kumar, S. Giri, P. Dash, Silicomolybdic Acid Intercalated Graphene Oxide-based Solid Acid: Catalytic Activity and Investigation of Structural Stability by DFT analysis, **Materials Chemistry and Physics**, 2022, s 285 (2022) 126096. **(I.F: 4.6)**
18. **L. S. K. Achary**, B. Maji, A. Kumar, Surya P. Ghosh, Jyoti P. Kar and P. Dash, Efficient Room Temperature Detection of H₂ Gas by Novel ZnFe₂O₄-Pd Decorated rGO Nanocomposite, **International Journal of Hydrogen Energy**, 2020, 45, 5073. **(I.F: 7.2)**
17. **L. S. K. Achary**, Pratap S. Nayak, B. Barik, A. Kumar and P. Dash*, Ultrasonic-Assisted Green Synthesis of β-Amino Carbonyl Compounds by Copper Oxide Nanoparticles Decorated Phosphate Functionalized Graphene Oxide via Mannich Reaction, **Catalysis Today**, 2020, 348, 137. **(I.F: 5.3)**
16. **L. S. K. Achary**, A. Kumar, B. Barik, Pratap S. Nayak, N. Tripathy, Jyoti P. Kar and P. Dash*, Reduced graphene oxide-CuFe₂O₄ nanocomposite: A highly sensitive room temperature NH₃ gas sensor, **Sensors and Actuators B: Chemical**, 2018, 272, 100. **(I.F: 8.4)**
15. **L. S. K. Achary**, A. Kumar, L. Rout, S. V. S. Kunapuli, R. S. Dhaka, P. Dash*, Phosphate functionalized graphene oxide with enhanced catalytic activity for Biginelli type reaction under microwave condition, **Chemical Engineering Journal**, 2018, 331, 300. **(I.F: 15.1)**
14. S. Jung, U. Zafar, **L. S. K. Achary**, C. M. Koo, Ligand chemistry for surface functionalization in MXenes: A review, **EcoMat**, 2023, e12395. **(I.F: 14.6) (Equal contribution)**
13. B. Maji, B. Barik, S. J. Sahoo, **L. S. K. Achary**, K. K. Sahoo, J. P. Kar, P. Dash, Shape selective comprehensive gas sensing study of different morphological manganese-cobalt oxide-based nanocomposite as potential room temperature hydrogen gas sensor, **Sensors and Actuators B: Chemical**, 2023, 133348. **(I.F: 8.4)**
12. Pratap S Nayak, B. Barik, **L. S. K. Achary**, B. Maji, Shital J Sahoo, P. Dash, Facile design of a WO₃ nanorod-decorated graphene oxide 1D–2D nanocatalyst for the synthesis of quinoline and its derivatives, **New Journal of Chemistry**, 2022, 4850-4863. **(I.F: 3.3)**
11. B Maji, **L. S. K. Achary**, B Barik, Shital J Sahoo, A Mohanty, P Dash, MnCo₂O₄ Decorated (2D/2D) rGO/g-C₃N₄-based Non-Enzymatic Sensor for Highly Selective and Sensitive Detection of Chlorpyrifos in Water and Food Samples, **Journal of Electroanalytical Chemistry**, 2022, 116115. **(I.F: 4.5)**

10. A. Kumar, L. Rout, **L. S. K. Achary**, S. K. Mohanty, Pratap S. Nayak, B. Barik, P. dash, Solvent free synthesis of chalcones over graphene oxide-supported MnO₂ catalysts synthesized via combustion route, *Materials Chemistry and Physics*, 2021, 259, 124019. **(I.F: 4.6)**
9. B. Barik, Pratap S. Nayak, **L. S. K. Achary**, A. Kumar, P. Dash, Synthesis of alumina-based cross-linked chitosan-HPMC biocomposite film: an efficient and user-friendly adsorbent for multipurpose water purification, *New Journal of Chemistry*, 2020, 44, 322. **(I.F: 3.3)**
8. L. Rout, A. Kumar, **L. S. K. Achary**, B. Barik, P. Dash, Ionic liquid assisted combustion synthesis of ZnO and its modification by Au-Sn bimetallic nanoparticles: An efficient photocatalyst for degradation of organic contaminants, *Materials Chemistry and Physics*, 2019, 232, 339. **(I.F: 4.6)**
7. B. Barik, A. Kumar, Pratap S. Nayak, **L. S. K. Achary**, L. Rout, P. Dash, Ionic liquid assisted mesoporous silica-graphene oxide nanocomposite synthesis and its application for removal of heavy metal ions from water, *Materials Chemistry and Physics*, 2020, 239, 122028. **(I.F: 4.6)**
6. L. Rout, A. Kumar, Pradyumna K Chand, **L. S. K Achary**, P. Dash, Microwave-Assisted Efficient One-Pot Multi-Component Synthesis of Octahydroquinazolinone Derivatives Catalyzed by Cu@Ag Core-Shell Nanoparticle, *Chemistry Select* 2019, 4, 5696. **(I.F: 2.3)**
5. Pratap S. Nayak, B. Barik, **L. S. K. Achary**, A. Kumar, P. Dash, Gold nanoparticles deposited on MnO₂ nanorods modified graphene oxide composite: A potential ternary nanocatalyst for efficient synthesis of betti bases and bisamides, *Molecular Catalysis*, 2019, 474, 110415. **(I.F: 4.6)**
4. B. Ekka, Soumitra R. Nayak, **L. S. K. Achary**, Sarita, A. Kumar, S. Mawatwal, R. Dhiman, P. Dash* and R. K. Patel*, Synthesis of hydroxyapatite-zirconia nanocomposite through sonochemical route: a potential catalyst for degradation of phenolic compounds, *Journal of Environmental Chemical Engineering*, 2018, 6, 6504. **(I.F: 7.7)**
3. A. Kumar, L. Rout, **L. S. K Achary**, Sangram K. Mohanty, P. Dash, A Combustion Synthesis Route for Magnetically Separable Graphene Oxide-CuFe₂O₄-ZnO Nanocomposite with Enhanced Solar Light-Mediated Photocatalytic Activity, *New Journal of Chemistry* 2017, 41, 10568. **(I.F: 3.3)**
2. A. Kumar, L. Rout, **L. S. K. Achary**, Rajendra S. Dhaka and P. Dash, Greener Route for Synthesis of aryl and alkyl-14H-dibenzo [a. j] xanthenes using Graphene Oxide-Copper Ferrite Nanocomposite as a Recyclable Heterogeneous Catalyst, *Scientific Reports*, 2017, 7, 42975. **(I.F: 4.6)**

1. Aniket Kumar, Lipeeka Rout, **L. S. K. Achary**, A. Mohanty, Rajendra S. Dhaka and P. Dash, An investigation into the solar light-driven enhanced photocatalytic properties of a graphene oxide–SnO₂–TiO₂ ternary nanocomposite, *RSC Advances*, 2016, 6, 32074. (**IF: 3.9**)

Publication in Conference Proceedings:

1. A. Kumar, L. Rout, **L. S. K. Achary**, A. Mohanty, J. Marpally, P. K. Chand, and P. Dash, Design of binary SnO₂-CuO nanocomposite for efficient photocatalytic degradation of malachite green dye, *AIP Conference Proceedings*, 2016 1724, 020027.

Book chapter:

1. **L. S. K. Achary**, B. Barik, P. Dash* Graphene Oxide-Polymer Nanocomposites for Sensing and Photocatalytic Applications (chapter: Graphene Nanocomposite) in *Handbook of Polymer and Ceramic Nanotechnology*, C. M. Hussain and S. Thomas (Eds.), Springer Nature Switzerland, 2019 (https://doi.org/10.1007/978-3-030-10614-0_27-1).

Presentations at Conferences

International:

1. Poster presentation entitled “*Ultrasonic-Assisted Green Synthesis of β -Amino Carbonyl Compounds by Copper Oxide Nanoparticles Decorated Phosphate Functionalized Graphene Oxide via Mannich Reaction*” in International Conference on “**Applied Catalysis and Chemical Engineering (ACC-2019)** during 08th to 10th of April 2019 at Dubai, UAE.

2. Poster presentation entitled “*Surface Functionalization of $Ti_3C_2T_x$ with towards Improved Oxidation Stability*” in International Conference by **The Polymer Society of Korea** during 05th to 07th of April 2023 at Daejeon Convention Center, Daejeon, Republic of Korea.

3. Poster presentation entitled “*Reduced graphene oxide-CuFe₂O₄ nanocomposite: A highly sensitive room temperature NH₃ gas sensor*” in **International Conference of Young Researcher on Advanced Materials (IUMRS-ICYRAM)** during 11st to 15th of December 2016 at Indian Institute of Science Bangalore, India.

National:

1. Oral presentation entitled “*Microwave-Assisted Rapid Synthesis of Novel Pd Nanoparticle Decorated rGO-ZnFe₂O₄ Nanocomposite towards Efficient Detection of H₂ Gas*” in National Conference on “**Advanced Materials for Energy and Environmental Applications (AMEEA-2018)** during 12th to 14th of December 2018 at NIT Rourkela, Odisha, India.

2. Poster presentation entitled “*Phosphate functionalized graphene oxide with enhanced catalytic activity for Biginelli type reaction under microwave condition*” in National Conference on “**Biomolecular Dynamics - Experimental and Theoretical Perspectives (BDETP-2017)** during 18th to 20th December 2017 at NIT Rourkela, Odisha, India.

3. Poster presentation entitled “*Reduced graphene oxide-CuFe₂O₄ nanocomposite: A highly*

sensitive room temperature NH_3 gas sensor” in 21st CRSI National Symposium in Chemistry during 14th to 16th July 2017 at CSIR-IICT Hyderabad, India.

Technical Expertise

Instrumentation:

TLC, Column Chromatography, Hydrothermal reactor, NMR, UV-Vis, TEM, EDS, XPS, FESEM, XRD, FTIR, TGA, Raman, BET, NH_3 -TPD.

Professional experiences:

Lab management for B.tech students, teaching assistant for chemistry course of B.Tech and M.Sc. students, Mentoring Post graduate students, Organizing laboratory practical's for UG/PG students, writing project proposals.

Teaching Experience

<u>Course Name</u>	<u>Organization</u>	<u>Year</u>
General Chemistry (CY-1101)	NIT, Rourkela	2016-2017
Chemistry of Nanomaterials (CY-632)	NIT, Rourkela	2016-2017
Physical Chemistry Lab II	NIT, Rourkela	2017-2018
Basic Inorganic Chemistry (CY-221)	NIT, Rourkela	2017-2018
General Chemistry (CY-1101)	NIT, Rourkela	2018-2019
Organic Chemistry (MSc)	CV Raman Global University	2020-2022

Awards/Honours

- Qualified **Graduate Aptitude Test Engineering (GATE)**-2015 conducted by Ministry of Human Resource Development (MHRD), Government of India.
- **Kulamani Das Memorial Award in Environmental Science** by Odisha Chemical Society as the **best paper** in Environmental Science, 24th December 2019.
- **Prof. G B. Behera Best Thesis Award** for the year 2020 by Odisha Chemical Society 19th December 2021.

Declaration

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed or distorted.

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