

# *Curriculum Vitae*

## **Dr. Gokarneswar Sahoo, Ph.D.**

### **PERSONAL DETAILS**

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**Date of Birth:** July 11, 1979

**Sex:** Male

**Nationality:** Indian

**Marital status:** Married

**Languages Known:** English, Hindi, Odia



### **PRESENT ADDRESS**

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Associate Professor  
MC-301/Department of Chemistry  
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### **PERMANENT ADDRESS**

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Vill. Barajpur  
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### **EDUCATIONAL QUALIFICATIONS**

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|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ph.D. (Organic chemistry):</b><br>Nov, 2001 – Jul, 2008   | <b>Thesis title :</b><br>“Synthetic Studies Toward Prototype Renin Inhibitors,<br>Basiliskamides and Decarestrictine C <sub>1</sub> ”<br><b>Supervisor :</b> Dr. Mukund K. Gurjar<br><b>Place of work :</b> Organic Chemistry Division, National Chemical<br>Laboratory, Pune - 411 008, INDIA |
| <b>M. Sc. (Master of Science):</b><br>Jun, 1999 – Aug, 2001  | Chemistry, with Advanced Organic Chemistry (as Special)<br><b>Institute &amp; University Rank-1</b><br>Department of Chemistry, Utkal University<br>Bhubaneswar-751 007, Odisha, INDIA                                                                                                         |
| <b>B. Sc. (Bachelor of Science):</b><br>Jun, 1996- Apr, 1999 | Chemistry (Honors) with Physics, Mathematics (Electives)<br><b>Institute Rank-1; University Rank-12</b><br>Bhadrak College, Bhadrak-756 100, Odisha, INDIA                                                                                                                                     |

## PROFESSIONAL AND RESEARCH EXPERIENCE

**2023-Present:** Associate Professor, NIT Rourkela, Odisha

**2016-2023:** Assistant Professor, NIT Rourkela, Odisha

**2014-2016:** Post-Doctoral Program, *Mentor: Prof. Petri M. Pihko and Dr. Karoliina Honkala*

**2011-2013:** Post-Doctoral Program, *Mentor: Prof. Petri M. Pihko*

**2008-2010:** Research Associate, Sai Advantium Pharma Ltd, *Mentor: Dr. Vishwanath Swamy*

**2001-2008:** Doctoral Program, *Research Guide: Dr. Mukund K. Gurjar*

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## RESEARCH GROUP (ORGANOCATALYSIS AND SYNTHESIS LABORATORY)

- 4 research scholars in their PhD programme
- 3 research scholars for their M.Sc. dissertation at present
- Supervised 14 M.Sc. dissertations

## TEACHING/SUPERVISION EXPERIENCE

- **2016-present (NIT Rourkela):**
  - **Undergraduate Courses:**
    - Chemistry (CY1101)
    - Electrochemistry and Conducting Polymers (CY1101)
    - Chemistry Laboratory (CY170/CY1170)
    - Hydrocarbons and Their Functional Groups (CY2101)
    - Functional Group Identification Laboratory (CY 2701)
    - Name Reactions and Rearrangements (CY213)
    - Chemistry of Natural Products (CY312)
    - Quantitative Analysis of Inorganic/Organic Compounds Laboratory (CY372)
    - Natural Products Isolation Laboratory (CY3702)
  - **Graduate Courses:**
    - Stereochemistry and Reaction Mechanism (CY 4101)
    - Spectroscopic Methods of Analysis (CY 4104/CY513)
    - Methods in Organic Synthesis (CY511)
  - **PhD Courses:**
    - Nuclear Magnetic Resonance Spectroscopy (CY616/CY6106)
    - Special Topics in Organic Chemistry (CY617)
- **2014-2016 (2<sup>nd</sup> Post-Doc):**
  - KEMS526: Physical Organic Chemistry (problem exercises).
  - Supervision of summer internship (2 months).
  - Supervision of MSc Projects (2 students-1 year program).
- **2011-2013 (1<sup>st</sup> Post-Doc):**
  - KEMS528: Physical Organic Chemistry (problem exercises).

- Supervision of B.Sc. Projects (2 students-2 month program).
- **2008-2010 (Industrial Job):**
  - Supervision of 6 FTEs (MSc Full Time Employees)
- **2001-2008 (PhD duration):**
  - Supervision of MSc projects (2 students).

## **AWARDS & ACHIEVEMENTS**

- **2017-** Prof. R. C. Tripathy young scientist award (Orissa Chemical Society)
- **2014-** Post-Doctoral Fellowship, Tekniikan edistämiskeskus (TEKES), Finland
- **2011-** Post-Doctoral Fellowship, Academy of Finland
- **2009-** Doctor of Philosophy in Chemistry; National Chemical Laboratory, INDIA.
- **2002-** Screened to the top 5 research fellows from top 20% CSIR fellows over India for Shyama Prasad Mukherjee fellowship interview, CSIR (INDIA).
- **2001- Dec, 2002-Jun, 2002-Dec, 2003-Dec:** CSIR-NET-JRF (3 times top 20%), INDIA
- **2001-** Gold Medal, M. Sc. (Chemistry), Utkal University, Orissa (INDIA)
- **2001-** All India Rank 12 (99.37 percentile) in GATE (Graduate Aptitude Test in Engineering) in Chemistry (INDIA).
- **1999-** Bhagabat Memorial Award (Best Chemistry Graduate), Bhadrak College, Utkal University, Odisha (INDIA).
- **1999-** Dr. Gopinath Panigrahi Award [Best Graduate (Science, Arts, Commerce)], Bhadrak College, Utkal University, Odisha (INDIA).

## **MEMBERSHIPS IN SCIENTIFIC SOCIETIES**

- **2023-** Life Member- Chemical Research Society of India (CRSI)
- **2023-** Patron Member- Orissa Chemical Society (OCS)
- **2018 & 2019-** Executive Member- Orissa Chemical Society(OCS)
- **2016-** Life Member- Orissa Chemical Society (OCS)

## **GRANTS AND RESEARCH FUNDING**

- **2018-2022:** Science and Technology Department, Odisha.
- **2017-2020:** Early Career Research Award, Science and Engineering Research Board (SERB), Department of Science and Technology (DST), India.

## **LIST OF PUBLICATIONS (H-INDEX: 10, I<sub>10</sub>-INDEX: 10)**

1. A biscoumarinyl hydrazone based nontoxic fluorescent dye for direct binding and imaging of actin in living cells and organism. Murmu, N.; Dash, K.; Panda, J.; **Sahoo, G.**; Sahoo, H.; Mishra, M.\*; Sahu, S. N.\* *Sensors and Actuators B: Chemical* **2024**, 399, 134741.
2. Concept-Driven Chemoselective O/N-Derivatization of Prolinol: A Bee-Line Approach to Access Organocatalysts. Sahoo, J.; Panda, J.; Giri, S.; **Sahoo, G.\*** *J. Org. Chem.* **2023**, 88(14), 10147.
3. A coumarin-salicylidene based fluorescent chemodosimeter for sub-ppb level detection of aluminium ion *via* metal ion induced hydrolytic cleavage of aldimine bond. Pradhan, S. K.; Muduli, S.; Murmu, N.; **Sahoo, G.**; Mishra, S.\*; Sahu, S. N.\* *Journal of Molecular Liquids* **2023**, 384, 122292.
4. Spectroscopic and Computational Study of Organocatalytic Umpolung of Bromocations: An Accelerated Stereoselective Dibromination Protocol. Panda, J.; Sahoo, J.; Dutta, J.; Biswal, H. S.; **Sahoo, G.\*** *Chem. Eur. J.* **2023**, 29(45), e202300675.
5. ReOx as a Brønsted acidic modifier in glycerol hydrodeoxygenation: computational insight into the balance between acid and metal catalysis. Korpelin, V.;<sup>†</sup> **Sahoo, G.**,<sup>†</sup> Ikonen, R. and Honkala, K.\* *Journal of Catalysis* **2023**, 422, 12.
6. Unravelling the development of Non-Covalent Organocatalysis in India. Sahoo, J.;<sup>†</sup> Panda, J.;<sup>†</sup> **Sahoo, G.\*** *Synlett* **2023**, 34, 729.
7. Spectroscopic and Computational Study of Organocatalytic Umpolung of Bromocations: An Accelerated Stereoselective Dibromination Protocol, Panda, J.; Sahoo, J.; Dutta, J.; Biswal, H. S.; **Sahoo, G.\*** *ChemRxiv* **2023** (DOI: 10.26434/chemrxiv-2023-dmfqh).
8. A Bee-line Approach to Access Organocatalysts: A Suitable Base Catalyzed, Time-dependent, Chemoselective O-functionalization of Prolinol, Sahoo, J.; Panda, J.; Giri, S.; **Sahoo, G.\*** *ChemRxiv* **2022** (DOI: 10.26434/chemrxiv-2022-c6htr).
9. Organocatalytic Approach for the Synthesis and Biological Studies of Naphthalene Fluorescent Probe via Hydrogen Transfer Reaction. Sau, M.; Dubey, S.; Sahoo, J.; **Sahoo, G.**; Trivedi, P.; Jana, A.; Samanta, S.; Das, T.\* *European Journal of Organic Chemistry* **2022**, 46, 130.
10. ReOx as a Brønsted acidic modifier in glycerol hydrodeoxygenation: computational insight into the balance between acid and metal catalysis. Korpelin, V.;<sup>†</sup> **Sahoo, G.**,<sup>†</sup> Ikonen, R. and Honkala, K.\* *ChemRxiv*, **2022** (DOI: 10.26434/chemrxiv-2022-m72zk).
11. Characterization of exopolysaccharide derived from *Enterobacter ludwigii* and its possible role as an emulsifier. Paikra, S. K.; Panda, J.; **Sahoo, G.\***; Mishra, M.\* *3 Biotech* **2022**, 12 (9), 1-19.
12. Synthesis of CuSbS<sub>2</sub> Nanoplates and CuSbS<sub>2</sub>–Cu<sub>3</sub>SbS<sub>4</sub> Nanocomposite: Effect of Sulfur Source on Different Phase Formation. Behera, C.; Samal, R.; Rout, C. S.; Dhaka, R. S.; **Sahoo, G.**; Samal, S. L.\* *Inorganic chemistry* **2019**, 58, 15291.
13. Characterization of Hardwood Soda-AQ Lignins Precipitated from Black Liquor through Selective Acidification. Kumar, H.; Alen, R.; **Sahoo, G.** *BioResources* **2016**, 11, 9869.
14. A catalyst designed for the enantioselective construction of methyl- and alkyl-substituted tertiary stereocentres. Claraz, A.; **Sahoo, G.**; Berta, D.; Madarász, Á.; Pápai, I.; Pihko, P. M.\* *Angew. Chem. Int. Ed.* **2016**, 55, 669-673.
  - *Angew. Chem.* **2016**, 128, 679-683.
  - Highlighted in *Synfacts* **2016**, 12(2), 198.
  - e-Eros Encyclopedia of Reagents for Organic Synthesis **2016** (DOI: 10.1002/047084289X.rm01993)

15. Mukaiyama-Michael reactions with *trans*-2,5-diarylpyrrolidine catalysts: enantioselectivity arises from attractive noncovalent interactions, not from steric hindrance. Kemppainen, E. K.; **Sahoo, G.**; Piisola, A.; Hamza, A.; Kótai, B.; Pápai, I.\*; Pihko, P. M.\* *Chem. Eur. J.* **2014**, *20*, 5983-5993.
  - Highlighted in *Cheminform Abstract* **2014**, 45.
16. Dihydrooxazine Oxides as key intermediates in Organocatalytic Michael additions of aldehydes to Nitroalkenes. **Sahoo, G.**; Rahaman, H.; Madarász, Á.; Pápai, I.\*; Melarto, M.; Valkonen, A.; Pihko, P. M.\* *Angew. Chem. Int. Ed.* **2012**, *51*, 13144-13148.
  - *Angew. Chem.* **2012**, *52*, 13321-13325.
  - Published as “Very Important Publication”.
  - Highlighted in *Cheminform Abstract* **2013**, 44.
17. Mukaiyama-Michael Reactions with Acrolein and Methacrolein: A Catalytic Enantioselective Synthesis of the C17-C28 Fragment of Pectinotoxins. Kemppainen, E. K.; **Sahoo, G.**; Valkonen, A.; Pihko, P. M.\* *Org. Lett.* **2012**, *14* (4), 1086-1089.
18. Total syntheses and absolute stereochemistry of decarestrictines C1 and C2. Mohapatra, D. K.\*; **Sahoo, G.**; Ramesh, D. K.; Rao, J. S.; Sastry, G. S. *Tetrahedron Letters*, **2009**, *50*(40), 5636-5639.
19. A Pd-mediated intramolecular ketalization of alkynediols: construction of the central [3.2.1]-bicyclic ketal core of cyclodidemniserinol trisulfate. Ramana, C. V.\*; Mallik, R.; **Sahoo, G.** *Tetrahedron Letters*, **2009**, *50*(34), 4844-4847.
20. Synthetic Studies Toward Prototype Renin Inhibitors, Basiliskamides and Decarestrictine C<sub>1</sub>. **Sahoo, G.**; Gurjar, M. K. *Doctoral Thesis*, **2008**, Submitted to University of Pune, Maharashtra.
21. Carbohydrate templates for synthesis of prototype renin inhibitors. Mohapatra, D. K.\*; **Sahoo, G.**; Sankar, K.; Gurjar, M. K. *Tetrahedron: Asymmetry*, **2008**, *19*(18), 2123-2129.
22. Practical syntheses of 4-fluoroprolines. Chorghade, M. S.\*; Mohapatra, D. K.; **Sahoo, G.**; Gurjar, M. K.; Mandlecha, M. V.; Bhoite, N.; Moghe, S.; Raines, R. T.\* *J. Fluorine Chem.* **2008**, *129*(9), 781-784.
23. Stereoselective synthesis of the polyketide chain of Nagahamide A. Mohapatra, D. K.\*; Chaudhuri, S. R.; **Sahoo, G.**; Gurjar, M. K.\* *Tetrahedron: Asymmetry* **2006**, *17*(18), 2609-2616.

## PRESENTATION IN CONFERENCE/WORKSHOP

1. Chemistry of Foods: Towards Understanding Sustainability, Jan 2024, “*Breaking New Ground in Sustainable Foods: Advanced Techniques for Analyzing Next-Generation Plant, Animal, and Marine-based Foods*”, Department of FPE, NIT Rourkela.
2. Organocatalytic Umpolung of Cationic Bromine, Jan 2024; “*Frontiers in Catalysis (FIC-2024)*”, Central University Rajasthan, India.
3. Chemoselective O/N-Derivatisation Leading to Direct Access of Organocatalysts, Nov 2023; “*Emerging frontiers in chemical sciences (NCeFCS-2023)*”, Berhampur university, Berhampur, Odisha, India.
4. Routine Laboratory Life of an Organic Chemist: Sequence of Events, Sep 2023 “*Modelling and Synthesis: Molecules to Macromolecules (MSMM 2023)*”, Department of Chemistry, NIT Rourkela.

5. Reciprocating Amalgamation of Experimental and Computational Chemistry, Sep 2023 *"Modelling and Synthesis: Molecules to Macromolecules (MSMM 2023), Department of Chemistry, NIT Rourkela.*
6. High Resolution Mass Spectrometry: Instrumentation and Analysis, Sep 2023 *"Skill Development Workshop & Training on Transmission Electron Microscope (TEM) and Scanning Electron Microscope (SEM)", Central Research Facility, NIT Rourkela.*
7. Organising Secretary: 31<sup>st</sup> CRSI-National Symposium in Chemistry, NIT Rourkela, Jul 2023.
8. Food Chemistry: Chemical Composition, Characterization Techniques, Jun 2023, *"Key Enabling Technologies in Millet: Agri (Farm) to Food Processing (Folk) (KETM-23)", Department of FPE, NIT Rourkela.*
9. Organic Chemistry: Methodologies to Natural Product Synthesis and Vice-Versa, Apr 2023, *"Recent Advancement in Chemical Sciences (RAICS-2023)", VSSUT, Burla, Odisha, India.*
10. Organocatalytic Umpolung of Bromocations, Mar 2023, *"National Conference on Recent Advances in Chemical Sciences (NCRACS-2023)", Berhampur University, Odisha, India.*
11. Research Proposal: Embarking Upon a Goal, Feb 2023, *"Science Day Lecture, Vikram Deb (Autonomous) College, Jeypore, Odisha, India".*
12. Nuclear Waste Management, Nov 2022, *"Special Exclusive Interview", All India Radio, Rourkela.*
13. High Resolution Mass Spectrometry: Principle and Applications, Oct 2022, *"Bio-Chemical and Bio-Physical Characterization of Proteins", NIT Rourkela.*
14. Organic Synthesis: A Leap towards Amalgamating New Frontiers, Sep 2022, *"Confluence of Science and Engineering Exploring New Frontiers (CSEEF-22)", GIET University, Gunupur, Rayagada-765022, Odisha, India.*
15. Food-its composition, decomposition, and preservation: The chemical perspective, Jul 2022, *"Sustainable Disruptive Technology in Agri-Food Sector for Processing and Preservation, Department of FPE, NIT Rourkela".*
16. CHEMTECH: Alliance for a Progressive Tomorrow, May 2022, *"National Technology Day Lecture, Institute of Engineers, NIT Rourkela".*
17. Organic Chemistry in Daily Life, Feb 2022, *"Science Day Lecture, Vikram Deb (Autonomous) College, Jeypore, Odisha, India".*
18. An Ingenious Tool for Building Molecules, Jan 2022, *"Nobel Prize Seminar-2021, Sambalpur University, Odisha, India".*
19. Analytical Techniques for Molecular Characterisation in Food Engineering Research, Dec 2021, Workshop on *"Technologies for Increasing the Shelf-Life of Perishable Foods, NIT Rourkela".*
20. Umpolung of Cationic Bromine: Organocatalyzed Halogenation of olefins, Nov 2021, *"Indo-German Partnership in Higher Education, DIP Regensburg-Rourkela, NIT Rourkela".*
21. NMR Spectroscopy: Extremely Useful Tool for Characterization, Feb 2021, *Webinar on "Characterisation of Materials, CUTM, Paralakhemundi".*
22. 2D NMR spectroscopy: Information of and from nuclei connected, Jan 2021, *Short Term Course on "Spectroscopic Techniques for Materials Characterization, MNIT Jaipur".*
23. <sup>13</sup>C Nucleus and NMR Spectroscopy: Scarce in nature, but extremely informative, Jan 2021, *Short Term Course on "Spectroscopic Techniques for Materials Characterization, MNIT Jaipur".*

24. Role of Organic Chemist in Synthesis of Natural Drug Entities, Jan 2020, "Colloquium, CUTM, Paralakhemundi".
25. Michael Addition of Aldehydes to  $\beta$ -Nitrostyrenes with Hayashi-Jorgensen Catalyst, March 2019, "IC-CBSDD-2019, PG Department of Chemistry, Berhampur University".
26. Catalytic Creation of Chiral Carbons (4Cs), 14-18<sup>th</sup> February 2018, "Recent Trends in Chemical Science and its Industrial and Biological Relevance, NIT Rourkela".
27. Asymmetric Organocatalytic Mukaiyama-Michael reaction: Synthesis of chiral backbones of natural products. Dec- 2017, "Prof. R. C. Tripathy Young Scientist Award Lecture, 31st Annual Conference of Orissa Chemical Society & National Seminar on Recent Developments and Applications of Functional Materials, CUTM, Paralakhemundi".
28. Dihydrooxazine Oxide: A Key Player in Organocatalytic Michael Additions of Aldehydes to nitroalkenes. Apr 2013, "4<sup>th</sup> OCRA Meeting, Amsterdam: Action on Organocatalysis".

## REVIEWER IN JOURNALS

1. Journal of Heterocyclic Chemistry (Wiley-Blackwell)
2. New Journal of Chemistry (Royal Society of Chemistry)
3. Synthetic Communication (Taylor and Francis)
4. European Journal of Organic Chemistry (Wiley)