

# BIODATA

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**[Core Research Area:** Materials Chemistry, Analytical Chemistry,  
environmental Chemistry and Organic Chemistry

**In charge Instrumentation Facilities:** Scanning Electron Microscopy, Gas Chromatography  
Mass Spectrometer, Gas Chromatography, Ultra High-Performance Liquid Chromatography,  
Nanosizer, UV-VIS-DRS Spectrophotometer and XRD]



## ACADEMIC STATICS

- ❖ **Doctor of Philosophy (Chemistry)**  
RTM Nagpur University, Nagpur.
- ❖ **Post Graduate Diploma in Computer Application** in 2010, from  
Punjab Technical University, Punjab.
- ❖ **Master of Science in June 2000**, (Subjects: Industrial Chemistry)  
Shivaji University, Kolhapur, India
- ❖ **Bachelor of Science in Chemistry in June 1998** (Subject: Chemistry)  
Shivaji University, Kolhapur, India

## WORK EXPERIENCE AND ACHIEVEMENTS

- ❖ Organization: CSIR-NEERI, Nagpur, Division: Environment Materials Division,  
Since Oct. 2011 to continue. Work Nature: PI, Co-PI and Team member for  
various R & D project activity, **The details of closed/ongoing projects,  
sponsoring agency and cost are as follows-**

Sr. No.	Title	Sponsoring Agency and Officer concerned	Role	Period	Project cost in Lakhs	Status
1.	(CNP-2779) Study on Assessment of damage to Environment and suggestion for Restoration Plan in Morbi-Wankaner (with reference to Ceramic Industrial Clusters), Gujarat	CPCB sponsored	Team member	2022-23	45.0	Ongoing
2.	OLP-48: Management of R & D services for Analytical	Inhouse	Team member	2022-23		Ongoing

	activities of CSIR-NEERI at sophisticated Environmental Analytical facility					
3.	(GAP-2536) Demonstration and validation of hydrogen ecosystem for stationary power backup application for telecommunication towers - Hybrid Broad Band Absorption PV Cell based Water Electrolysis for Solar Hydrogen technology (CSIR-NEERI's component)	DST	Team member	2019-2022	90.0	Ongoing
4.	(TSP-1-2428) Emission Testing of Firecrackers	Industry sponsored	Co-PI	2019-2022	300.0	Ongoing
5.	(MLP-195) Solar Energy Applications (SEA) – Design and Development of Solar Energy Harvesting Materials and appliances	Inhouse	Team member	2021-22	10.0	Ongoing
6.	GAP-2587-Facility creation for testing and development for firecrackers-raw materials, compositions and emissions (RACE)	MoEF & CC, TANFAMA, NEERI (60:40:40)	Team member	2022-2025	1500.0	Ongoing
7.	MLP-193-Facility creation for testing and development for firecrackers-raw materials, compositions and emissions	Inhouse	Team member	2021-2024	190.0	Ongoing
8.	GAP-2769-Facility creation for testing and development for firecrackers-raw materials, compositions and emissions (RACE)	MoEF & CC & TANFAMA	Team member	2022-2025	600.0 (275.0 1 <sup>ST</sup> installment)	Ongoing
9.	TSP-2657: Evaluation of biodegradability and toxicity of residue of firecrackers	Industry sponsored (TANFAMA)	Co-PI	2020-22	12.0	Closed
10.	CNP-2388-Broadband Absorption Cell with enhanced efficiency of PV for hot water and electricity	Industry sponsored project (NOCIL)	Team member	July 2018-Mar 2020	15.0	Closed
11.	(TSP-01-2336), Sampling, Testing and Analytical Services	Industry/ Academics		2019-2024		Closed
12.	SEM characterization service	CSIR-NEERI	Project Leader	2017-2019		Ongoing
13.	(MLP-161) Technologies and Products for Management of COVID-19 Pandemic	Inhouse	Co-PI	2020-2021	92.88	Closed
14.	(MLP-126) Technologies and Products for Reduced	Inhouse	Project Leader/	2018-2020	247.0	Closed

	Emission Firecrackers		Co-Project Leader			
15.	(MLP-131) Development and Validation of Analytical Protocols for the Determination of Volatile Methyl Siloxanes in Environmental Matrices	CSIR-NEERI Inhouse project	Team member	2019-2020	22.0	Closed
16.	Tricopper Clusters as pMMO mimic for conversion of methane to methanol at ambient conditions	CSIR Project	Team Member	2019-2020	82.0	Closed
17.	System & Devices for photocatalytic Solar disinfection	CSIR project	Co-Project leader	2016-2018	82.0	Closed
18.	(DST-G-1-2288): Geophysical Methods for Monitoring Soil Bioremediation.	DST	Team Member	2018-2020	26.0	Closed
19.	Centre of Excellence for Molecular Environmental Science and Engineering Research	CSIR network project	Team Member	2011-2017	400.0	Closed
20.	Development of materials for conversion of methane/syngas to methanol (MS2M) and improved combustion of biomass gas	DST-BURD	Team Member	2013-2017	60.25	Closed
21.	Solar to Chemical Conversion Systems and Devices – TAPSUN project	CSIR, New Delhi	Team Member	2011-2017	1100.0 (11 crore)	Closed

- ❖ Organization: NIPER, Mohali, Punjab, Division: Technology Development Centre, Tenure: 2006 to 2011. Work Nature: Contractual R & D project and analysis of organic compound and bulk drug. Achievement: Completed various industrial & academic sponsored projects and filed three patents at the Indian Patent Office. The completed project work includes-

Sr. No.	Title	Sponsoring Agency and Officer concerned	Role	Period	Project cost in Lakhs	Status
1.	Synthesis of Pethidene for Gulconate Health Ltd., Calcutta	Industry	Team Member	2007-08	1.0	Closed
2.	Synthesis of Octyl Methoxy Cinnmate	Nandolia organics Ltd., Gujrat.	Team Member	2008-09	1.0	Closed

3.	Racemization of Ramipril intermediate	Unimark Remedies, Gujrat	Team Member	2008-09	1.0	Closed
4.	Development and Scale up of 2-aryl -4 (1H imidazole-1-yl)-1,2,3,4-tetrahydroquinolines & 2-aryl-4-(1H 1,2,3,4 triazol-1-yl)-1,2,3,4 tetrahydroquinolines	Prof. A.Raghu Rao of Punjab University, Chandigarh.	Team Member	2009-10	1.0	Closed

### INTERNATIONAL PUBLICATIONS (20), PATENTS (9) & BOOK CHAPTER (3)

#### ➤ **Publications (International):**

1. Photodeposition of AuNPs on metal oxides: study of SPR effect and photocatalytic activity SS Rayalu, D Jose, PA Mangrulkar, M Joshi, **G Hippargi**, K Shrestha, Kenneth Klabunde. International journal of hydrogen energy 39 (8), 3617-3624; 2014; Impact Factor - 7.139
2. Plasmonic nanostructured Zn/ZnO composite enhances carbonic anhydrase driven photocatalytic hydrogen generation; PA Mangrulkar, AA Chilkalwar, AV Kotkondawar, NR Manwar, PS Antony, **G Hippargi**, Nitin Labhsetwar, Michael Trachtenberg, Sadhana Rayalu; Journal of CO2 Utilization 17, 207-212; 2017; Impact Factor - 8.321
3. Titania gold composite: effect of illumination on size of gold nanoparticles with consequent implication on photocatalytic water splitting; **G Hippargi**, PR Maddigapu, N Labhsetwar, S Rayalu; Russian Journal of Physical Chemistry B 11 (6), 1002-1011; 2017; Impact Factor - 1.296
4. Chloride ion: A promising hole scavenger for photocatalytic hydrogen generation **G Hippargi**, P Mangrulkar, A Chilkalwar, N Labhsetwar, S Rayalu; International Journal of Hydrogen Energy 43 (14), 6815-6823; 2018; Impact Factor - 7.139
5. Effect of hydrophobicity of pharmaceuticals and personal care products for adsorption on activated carbon: Adsorption isotherms, kinetics and mechanism; H Kaur, A Bansiwali, **G Hippargi**, GR Pophali; Environmental Science and Pollution Research 25 (21), 20473-20485; 2018; Impact Factor -5.190
6. Biomimetic lipophilic activated carbon for enhanced removal of triclosan from water H Kaur, **G Hippargi**, GR Pophali, A Bansiwali; Journal of colloid and interface science 535, 111-121; 2019; Impact Factor -9.965
7. Enhanced photocatalytic degradation of antimicrobial triclosan using rGO–TiO<sub>2</sub> composite under natural solar illumination; H Kaur, R Dahake, PR Maddigapu, **G Hippargi**, GR Pophali, A Bansiwali; Journal of Materials Science: Materials in Electronics 31 (8), 6045-6058; 2020; Impact Factor -2.779
8. Improved heterogeneous catalytic conversion of methane to methanol at ambient conditions; SAM Ahmed, N Jidnyasa, RJ Krupadam, **G Hippargi**, YT Prabhu, U Pal,

sadhana rayalu, Penumaka Nagababu...; Journal of Environmental Chemical Engineering 8 (5), 104103; 2020; Impact Factor -7.968

9. Simultaneous wastewater treatment and generation of blended fuel methane and hydrogen using Au-Pt/TiO<sub>2</sub> photo-reforming catalytic material; **G Hippargi**, S Anjankar, RJ Krupadam, SS Rayalu; Fuel 291, 120113; 2021; Impact Factor -8.035

10. Leaching characteristics and hazard evaluation of bottom ash generated from common biomedical waste incinerators; A Ramesh Kumar, Atul Narayan Vaidya, Ishan Singh, Kajal Ambekar, Suyog Gurjar, Archana Prajapati, Gajanan Sitaramji Kanade, **Girivyankatesh Hippargi**, Ganesh Kale, Sandeep Bodkhe; J Environ Sci Health A Toxic/Hazardous Substances Environmental Engineering; 2021 Aug 6;1-11; doi: 10.1080/10934529.2021.1962159. Online ahead of print. Impact Factor - 2.58

11. Corrigendum to “Coagulation and Sedimentation of Concentrated Laterite Suspensions: Comparison of Hydrolyzing Salts in Presence of Grewia spp. Biopolymer”; MB Kameni Ngounou, **G Hippargi**, NK Sylvere, KG Patrice, KG Joseph, Sekdeb Pal; Hindawi Journal of Chemistry Volume 2021, Article ID 9791365, Impact Factor - 3.241

12. Functional additives: Promising material for reducing emissions in sound emitting pyrotechnic formulations; Suraj Junghare, **Girivyankatesh Hippargi**, Payal Mane, Satish Lokhande, Shilpa Kumari, Rakesh Kumar, Sadhana Rayalu; Journal of Cleaner Production Impact Factor-9.3; Volume 337, 20 February 2022, 13046 Impact factor - 11.072

13. Silk fibroin: A promising bio-material for the treatment of heavy metals contaminated water, adsorption isotherms, kinetics and mechanism; Sonali Pilley, Harkirat Kaur, **Girivyankatesh Hippargi\***, Pranjali Gonde, Sadhana Rayalu; Environmental Science and Pollution Research; volume 29, pages 56606–56619 (2022); Impact factor-5.190

14. Morphologically and hierarchically controlled Ag/Ag<sub>2</sub>MoO<sub>4</sub> microspheres for photocatalytic hydrogen generation; AA Moinuddin, AV Kotkondawar, **G Hippargi**, A Anshul, S Rayalu; 2022; Applied Surface Science, 153554 Impact factor- 7.392

15. Exploring the applicability of a geopolymer and a biopolymer as an environmentally benign treatment option for heavy metals contaminated water; KNM Bernard, O Prakash, **G Hippargi**, NK Sylvere, KG Joseph, S Pal; 2022; Journal of the Taiwan Institute of Chemical Engineers 135, 104392 Impact factor- 5.477

16. Engineering of heterojunction TiO<sub>2</sub>/CaIn<sub>2</sub>S<sub>4</sub>@ rGO novel nanocomposite for rapid photodegradation of toxic contaminants; SD Chaudhari, A Deshpande, A Kularkar, D Tandulkar, **G Hippargi**, Sadhana Rayalu, Penumaka Nagababu; 2022; Journal of Industrial and Engineering Chemistry 114, 305-316 Impact factor- 6.760

17. Glazing of the fireworks: Functional coating materials for enhancing the shelf life and reducing emissions; U Wankhede, **G Hippargi**, S Junghare, A Middey, R Kumar, S Rayalu; 2022; Environmental Technology & Innovation 28, 102926 Impact factor- 7.758

18. Occurrence of phthalates in facemasks used in India and its implications for human exposure; N Shende, **G Hippargi**, S Gurjar, AR Kumar, S Rayalu; 2022; International Journal of Environmental Health Research, 1-17 3.39 Impact factor- 4.477

19. Nanophotonics triggered thermally enhanced solar water disinfection bottles for slum dwellers; Aditi Kulkarni, Kiran Manohar, **Girivyankatesh Hippargi**, Pratap Reddy Maddigapu, Rita Dhodapkar and Sadhana Suresh Rayalu; 2022; Environment Science and Pollution Research; Environmental Science and Pollution Research <https://doi.org/10.1007/s11356-022-24245-5>; Impact Factor -5.190

➤ **Patents**

1. A Process For The Preparation Of Silk Metal Nanocomposites And Use Thereof In Water Disinfection; Application No. 202011006017 dated 12.02.2020
2. Safe Aluminum Less Cracker (SAFAL) and A Process for Preparation Thereof; Application No. 201911012431 dated 29.03.2019
3. Safe Water and Air Releaser (SWAS) Fire Cracker And A Process For Preparation Thereof; Application No. 201911012432 date 29.03.2019
4. Safe Thermite Cracker (STAR) and A Process For Preparation Thereof: Application No. 201911012433, dated 29.03.2019
5. A Coating Composition for Preparing Functional Fireworks with Reduced Emissions And A Process For The Preparation Thereof; Application No. 202011034412 dated 11.08.2020
6. Hybrid process for synthesis of photon induced metal and metal oxide composites and photocatalytic application thereof; Application No. 201611000296 filed on 05/01/2016.
7. Enhancing the life of Catalyst by using Promoters in the Synthesis of Octyl Methoxy Cinnamate; App. No. 3696/DEL/2011 filed on 16/12/2011.
8. Alternative process for making of Pethidine Base; Application No. 142/DEL/2011 dated 20/01/2011.
9. An improved process for making intermediate for Pethidine Production; App. No. 1910/del/2008.

➤ **Book Chapter**

1. Treatment methods for removal of pharmaceuticals and personal care products from domestic wastewater; Harkirat kaur, Girivyankatesh Hippargi, Amit Bansiwali and Girish Phopali; Publisher- Butterworth-Heinemann; Book Name: Pharmaceuticals and Personal Care Products\_ Waste anagement and Treatment ....; Pages: 129-150; 2019/1/1
2. Developing household level drinking water disinfection unit using copper; Vandit R Shah, Girivyankatesh Hippargi, Jaykumar Soni; Publisher- CRC Press; Book Name: Technologies for Sustainable Development; Pages: 90-94; 2020/9/1
3. Recent Advances in Wetland-Based Tertiary Treatment Technologies for PPCPs Removal from Wastewater; Harkirat Kaur, Girivyankatesh Hippargi, Girish R Pophali, Amit Bansiwali; Publisher- Springer, Singapore; Book Name: Impact of COVID-19 on Emerging Contaminants; Pages: 327-353; 2022

**AWARDS AND HONOURS**

1. **‘CSIR-Technology Award For Physical Sciences-2021’** in the hands of **honourable Vice President of India Shri Venkaiah Naidu ji** (Sponsored by Council of Scientific and Industrial Research, Anusandhan Bhavan, Rafi Marg, New Delhi-110001)
2. **International Best Research Award for the Research and Excellence in “Chemical Science”** in the Royal Research Academy Award Ceremony, ‘ISSN International Science & Technology Awards and Congress 2022 (IISTAC-2022)’ on 3<sup>rd</sup> Nov. 2022.
3. Honored with the best **‘Technical Officer’ ‘CSIR-NEERI FOUNDATION AWARD-2020’** for the scientific & technical work performance of the consecutive first three years.
4. Honored with the best **‘Technical Officer’ ‘CSIR-NEERI FOUNDATION AWARD-2016’** for the scientific & technical work performance of the consecutive first three years.
5. Received **“Certificate of Outstanding Contribution in Reviewing”** award in 2018 for the recognition of the contribution made to the quality of the journal. (Elsevier Journal) ‘Electrochemica Acta’
6. **Reviewer of several International journal:** Electrochemical Acta, Journal of Saudi Chemical Society, Environmental Science and Pollution Research, Journal of Materials Science etc.