

Brief Profile

Dr. Swarna Patra is an Associate Professor at R V College of Engineering, Bengaluru, with over 12 years of academic experience. She is a computational scientist specializing in interdisciplinary research at the interface of chemistry and biology. Her expertise includes molecular modeling, molecular dynamics, chemical graph theory, quantitative structure-activity/property relationships (QSAR/QSPC), docking studies, and data analysis. Prior to her academic career, she worked as a Senior Research Associate at the Indian Institute of Science and as a Polymer Engineer at General Electric Plastic (R&D) where she contributed to quantitative analysis, software validation, and project management using Six Sigma methodologies. Dr. Swarna Patra's research interests focus on simulation, modeling, computational techniques applied to chemical and biological systems and outcome-based education. She is also skilled in database management, technical writing, and training material development, and actively involves in various academic, research and compliance activities. Her multidisciplinary background and experience in both industrial and academic settings enable her to bridge theoretical and applied research in sustainability and computational sciences.



Personal Information

- **Name:** [Dr Swarna Mayee Patra]
- **Designation:** [Associate Professor]
- **Department:** [Chemistry]
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Google Scholar: [<https://scholar.google.co.in/citations?user=IIA8IN8AAAAJ&hl=en>]

ResearchGate: [<https://www.researchgate.net/profile/Swarnda-Patra>]

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Domain of Expertise

Research Focus

- **Primary Area:** [Computational Chemistry/Biology & Chemical Graph Theory]
- **Allied Areas:** [Outcome Based Education & Teaching learning Process]

Academic Qualifications

- **Ph.D.:** [Computational Chemistry], [Sambalpur University], [1998] (*Study of Certain Chemical Systems through Graph theoretical and Computational Models*)

- **M.Sc.:** [Physical Chemistry], [Sambalpur University], [1990]
- **B.Sc.:** [Physics, Chemistry (Hons), Mathematics], [Sambalpur University], [1988]
- **Postdoctoral Research:** [IISc, Bengaluru, India], [2010-2012]
 [University of Sydney, NSW, Australia], [2004-2009]
 [JNCASR, Bengaluru, India], [1999-2000], [IISc, Bengaluru, India], [1997-1999]

Professional Experience

Experience			
S.No	Institute/College/Industry	Job Title	Duration (From- To)
1.	General Electric Plastic (R&D), Bangalore, India	Polymer Engineer	Aug 2000 – Jan 2004
2.	MONSANTO, Bangalore, India	Bioinformatic Scientist	March 2000 – Aug 2000

Publications & Patents

Journal Publications

1. Dayanand N. Patagar, Raviraj Kusanur, Sheetal R. Batakurki, Maya Pai M, Vishnumurthy K. A, Swarna M. Patra, Aejaaz A. Khan, "Synthesis, evaluation of antioxidant and antidiabetic potential of 3-ethoxy carbonyl coumarin-8-propionamides", Journal of the Indian Chemical Society, 101465, 2024, ISSN 0019-4522, DOI: <https://doi.org/10.1016/j.jics.2024.101465>.
2. Akshay Uttarkar, Swarna M Patra and Vidya Niranjan, " Targeting the G-quadruplex structure in the hTERT promoter for telomerase activity: In silico screening of phytocompounds and long timescale replica exchange molecular dynamics simulations", Molecular Simulation, 50(16), 1465–1479, 2024, DOI: <https://doi.org/10.1080/08927022.2024.2413900>
3. Dayanand N Patagar, Raviraj Kusanur, Sheetal R Batakurki, Swarna M Patra, Ninganagouda R Patil, Jagadish H Patil, "8-benzimidazolyl coumarin-3-oxadiazoles – Synthesis, docking studies and Anti-proliferative evaluation against breast cancer", Journal of Molecular Structure 1294, Part 1, 136377, Dec 2023, DOI: <https://doi.org/10.1016/j.molstruc.2023.136377>
4. Prapulla S B, Swarna M Patra, Subramanya K N, Uma B V, " Techniques for Strengthening 21st Century Learners' Critical Thinking Skills", Journal of Engineering Education Transformation, vol no 36, special issue2, 512-518, 2023 DOI: 10.16920/jeet/2023/v36is2/23078
5. Dayanand N. Patagar, Sheetal R. Batakurki, Raviraj Kusanur, Swarna M. Patra, S. Saravanakumar, Manjunath Ghate, "Synthesis, antioxidant and anti-diabetic potential of novel benzimidazole substituted coumarin-3-carboxamides", Journal of Molecular Structure 1274, 13458, 2023, DOI: <https://doi.org/10.1016/j.molstruc.2022.134589>
6. Priyaranjini Rao, Ashwini S, Ghazala Masood, Raviraj Kusanur, Vidya Niranjan, Swarna M Patra, "Bioinformatics study of Pioglitazone analogues as potential anti-diabetic drugs", Russian Journal of Bioorganic Chemistry, Vol 48, No 5, p976-989. © Pleiades Publishing, Ltd., 2022, DOI: 10.1134/S106816202205017X

7. Swarna M Patra, Karthik Shastry, "Effective Teaching for Millennial Learners", Journal of Engineering Education Transformation, Vol 35, Issue 2, p129-136, 2022, DOI: 10.16920/jeet/2022/v35i4/22112
8. Haritha Rajaram, N. Harshitha, Shweta A. Ram, Swarna M. Patra, Vidya Niranjan, K.A. Vishnumurthy, "Targeting non-structural proteins and 3CLpro in SARS-CoV-2 virus using phytochemicals from medicinal plants - In-silico approach", Journal of the Indian Chemical Society, 99, 100488, 2022, DOI: <https://doi.org/10.1016/j.jics.2022.100488>
9. Ashwini S, Ghazala Masood, Harshitha B S, Sinchana H, Vishnumurthy K A, Swarna M Patra, Vidya Niranjan, "Role of Abscisic Acid in Plant Growth and Regulation: An Insilico Study", RV Journal of Science Technology Engineering Arts and Management, Vol 2, Issue 2, 17-29, 2021
10. Swarna M Patra, Ramakanth Kumar P, K N Subramanya, "Designing question paper marks distribution based on Bloom's taxonomy level for course outcomes measurement", International Journal on Recent Trends in Business and Tourism, Vol. 5, No. 2, 2021, DOI: <https://ejournal.lucp.net/index.php/ijrtbt/article/view/1299/1408>
11. Swarna M Patra, Ganesh C L, K N Subramanya, "Implementation of outcome-based education focusing on curricula, methodologies and outcome", Journal of Tourism and Sports Management, (ISSN:2642-021X) 3(2), 289, 2021, DOI: <https://www.scitcentral.com/documents/2c8635de1ec77b0eeb9906801c81747f.pdf>
12. Dayanand Patagar, Akshay Uttarkar, Swarna M. Patra, Jagadish H. Patil, Raviraj Kusanura, Vidya Niranjan, and H. G. Ashok Kumar, "Spiro Benzodiazepine Substituted Fluorocoumarins as Potent Anti-Anxiety Agents", Russian Journal of Bioorganic Chemistry, Vol. 47, No. 2, 390–398. ©Pleiades Publishing, Ltd., 2021, DOI: <http://dx.doi.org/10.1134/S1068162021020199>

Conference Papers

1. R Chithra, Sahana Markande, Naren Karthik K, Kruthika N, Suma N Manjunath, Parth Sarathi Panigrahy and Swarna Mayee Patra, "Electricity Harvester Using Acoustic Energy", 8th International Conference on Computational System and Information Technology for Sustainable Solutions (CSITSS), Bengaluru, India, pp. 1-6 (2024), doi:10.1109/CSITSS64042.2024.10817043
2. Prapulla S B, Hamsaveni R, Himashree N R, Madhubala M, Lavanya M, Amit Sata and Swarna M Patra, "Blockchain-Powered Carbon Credit Management: Innovating Sustainability Tracking", 8th International Conference on Computational System and Information Technology for Sustainable Solutions (CSITSS), Bengaluru, India, pp. 1-7 (2024), doi:10.1109/CSITSS64042.2024.10817037
3. Swarna Mayee Patra, Glen Cletus Dsouza, K. N. Subramanya, "Statistical analysis of open book examination during COVID-19 pandemic: Lifelong learning", AIP Conf. Proc. 2909, 120006 (2023), doi: <https://doi.org/10.1063/5.0181787>
4. Raj Kumar Nayak Maloth, Glen Cletus DSouza, and Swarna Mayee Patra, "Experimental Heat Transfer Investigations of a Double Pipe U-Tube Heat Exchanger Equipped with Twisted Tape and Cut Twisted Tape Internals", AIP Conference Proceedings, 2387, 050001, 2021, doi: <https://doi.org/10.1063/5.0068686>

Books/Book Chapters

1. [Aarushi Das, Swarna M Patra*, Glen C DSouza, Raviraj Kusanur, Vijayakumar R.P], Book Chapter- Ecological Considerations in Microbial Bioremediation, Book Title- Bioremediation for environmental sustainability, Applied Academic Press (AAP) and CRC Press (Taylor and Francis Group), (Accepted, in press)
2. [Rita H S, Vidya Patil, Glen Cletus DSouza*, Swarna M. Patra*], Chapter-Conversion of organic waste into hydrogen energy, Book Title-Organic waste for energy recovery: Thermochemical and biochemical energy harvesting process, Routledge Taylor & Francis group, CRC Press, (Accepted, in press)
3. [Swarna Mayee Patra and K N Subramanya], Chapter-A step towards NEP Implementation in Higher Education (Case Study), Book Title - NEP Readiness: Scope and Challenges for Transforming Higher Education, ISBN Number - 978-81-957031-7-3, Publisher - Centre for Educational and Social Studies, Bengaluru
4. [Glen Cletus DSouza Carlos Munoz Cupa, Swarna M Patra], Chapter-An insight into the second and third generation Bio fuels: Their production, uses and Technological advances. Book Title – Green and Clean Technology Innovations and Applications p223-256, 2023, ISBN: 978-81-95966-24-0, Publisher I K International Pvt Ltd. New Delhi

R & D Grants & Consultancy Projects

Ongoing & Completed Research Projects

- [Scheme for Promoting Interests, Creativity and Ethics among Students (SPICES)] – Funding Agency: [AICTE], Duration: [2020-2021], Role: [Co-PI].

Ongoing & Completed Consultancy Projects

- [Functional and Domain Knowledge for Biostatistical Analysis solution] – Funding Agency: [SyMetric], Duration: [2021-2022], Role: [Co-consultancy].

Professional Memberships

- [Membership Body, ISTE]

Awards & Recognitions

- Professional Body recognition, IET (The Institution of Engineering and Technology) India Scholarship award 2023.
- Professional Body recognition, IET (The Institution of Engineering and Technology) India Scholarship award 2022.
- Excellent performance award, RSST for the year 2021-22.

Student Supervision

- **Ph.D. Candidates:** [1]
- **Undergraduate Research Mentees:** [2]

Professional Roles

- **Chair/Committee Member:**
 - [Committee member - National level EduAlthon-2025, 48hours event organized by RV College of Engineering CEDLR & SPARK In collaboration with Indo Universal Collaboration for Engineering Education]
 - [Session chair on 8.12.22 for Oral presentation @ "Artifical Intelligence and Machine Learning in Applied Biotechnology" (AIMLBIO-2022)]

Teaching

Core Courses: [Current semester]

- [CM211IA] [Chemistry of Smart Materials and Devices]
- [CM221IC] [Chemistry of Engineering Materials]

Advanced/Lab Courses:

- [Chemistry of Smart Materials and Devices]
- [Chemistry of Functional Materials]
- [Chemistry of Engineering Materials]
- [Engineering and Environmental Chemistry]

Professional Roles

Responsibilities

- **Academic:** [AMC Coordinator, Experiential Learning Chief coordinator for SDG4 – Quality Education, Experiential Learning Chief coordinator for Manufacturing Process]
- **Administrative:** [Anti-ragging Committee Member, Counsellor, Virtual Lab coordinator]

External Connect

- Member of BoS Department of Chemistry, RV College of Engineering, Bengaluru

National Journals	National Conferences	International Conferences	International Journals	Book Chapter published	Patents Granted
1	4	4	35	5	0