

FACULTY PROFILE

1. Name : Dr. Kalpana V N
2. Designation : Assistant Professor
3. Qualification : M.Sc., M.Phil., Ph.D
4. Mobile Number : 9944648804
5. E.mail.id : kalpanavn@auxiliumcollege.edu.in ; kalpana.arivarasu@gmail.com
6. Teaching Experience : 6 years
7. Area of Specialization : Enzymology, Parasitology, Microbial nanotechnology
8. Research experience : 3 years
9. Projects Completed : 1
10. No. of Papers Published : 18
11. No. of Papers Presented in the International Conferences : 5
12. No. of Seminars/Workshops/Conferences organized : 3 (Virtual Seminar)
13. No. of Books Published/ Edited/Co-edited : 2
14. Membership in professional bodies (Descriptive) : Member in Nature Science Foundation
Life Time Member in Microbiologist Society of India.
15. Honors & awards received (Descriptive) : Researcher Award for publishing papers in Peer reviewed International Journals for the year 2016, 2017 & 2018 from Academic Research, VIT, Vellore.
Award for Contribution in Health Awareness, EEA Conference 2021 organized by Education Excellence Award, RZ-25, Bhawani Kunj, D-2, Vasant Kunj, New Delhi.

16. No. of Online Courses completed (Minimum of 4 Weeks) : 4

Projects Completed:

Title of the Project: Microbial production of Xylanase: An emerging biomolecule for current and future perspective

Name of the funding agency: Tamil Nadu State Council for Science and Technology

Publications

Journal Article:

- **Kalpana, V.N.** and Rajeswari, V.D. 'Production of xylanase from various lignocellulosic waste materials by *Streptomyces* sp. and its potential role in deinking of newsprint', Asian Journal of Biochemistry, ISSN 2582-3698, September 2015, Vol. 10, Issue 5, pp 222-229.
- Roopan, S.M., Devi Rajeswari, V., **Kalpana, V.N.** and Elango, G. 'Biotechnology and pharmacological evaluation of Indian vegetable crop *Lagenaria siceraria*: An overview, Applied Microbiology and Biotechnology, ISSN 0175-7598, February- 2016, Vol.100, Issue 3, pp 1153-1162 (Impact Factor: 3.6720)
- Kashif, M.D., Kumar, V., **Kalpana, V.N.** and Devi Rajeswari, V. 'Phylogenetic diversity and biological activity of actinomycetes isolated from Gulf of Mannar, Tamil Nadu, India', Der Pharmacia Lettre, ISSN- 0975-5071, 2016, Vol 8, Issue 1, pp. 16-24.
- **Kalpana, V.N.** and Rajeswari, V.D, 'Phytochemical and Pharmacological investigation of an indigenous medicinal plant *Leucas aspera*'. International Journal of Pharm Tech Research, ISSN - 2455-9563, 2016, Vol 9, Issue 8, pp. 399-407.
- **Kalpana, V.N.**, Prabhu, D.S., Vinodhini, S. and Devirajeswari, V, 'Biomedical waste and its management'. Journal of Chemical and Pharmaceutical Research, ISSN - 0975-7384, 2016, Vol 8, Issue 4, pp. 670-676.
- **Kalpana, V.N.**, Sravani, N., Vigneshwari, T. and Rajeswari, V.D, ' An inexpensive substrate for the production of alkaline protease by *Bacillus* sp and its application studies of *Manihot esculenta* ', Der Pharmacia Lettre, ISSN- 0975-5071, 2016, Vol 8, Issue 1, pp. 220-232.

- **Kalpana, V.N.**, Chakraborty, P., Palanichamy, V. and Rajeswari, V.D, ‘Synthesis and characterization of copper nanoparticles using *Tridax procumbens* and its application in degradation of bismarck brown, International Journal of Chem Tech Research, ISSN 0974-4290, 2016, Vol 9- Issue 9, pp. 498-507
- Rajakumar, G., Gomathi, T., Thiruvengadam, M., Rajeswari, V.D., **Kalpana, V.N.** and Chung, I.M, ‘Evaluation of anti-cholinesterase, antibacterial and cytotoxic activities of green synthesized silver nanoparticles using from *Millettia pinnata* flower extract’. Microbial pathogenesis, ISSN 0882-4010, February 2017, Vol 103, pp. 123-128 (Impact Factor – 2.332).
- **Kalpana, V.N.**, Patra, R.R. and Rajeswari, V.D . ‘Green synthesis of zinc oxide nanoparticles using fresh stem of *Cissus quadrangularis* extract and its various *in vitro* studies’, Asian Journal of Chemistry, ISSN 09707077, April 2017, Vol 29, Issue 6, pp. 1323-1327.
- Gandhi, A.D., Vizhi, D.K., Lavanya, K., **Kalpana, V.N.**, Rajeswari, V.D. and Babujanarthanam, R. ‘In vitro anti-biofilm and anti-bacterial activity of *Sesbania grandiflora* extract against *Staphylococcus aureus*’, Biochemistry and Biophysics reports, ISSN 2405-5808, October 2017, Vol 12, pp. 193-197.
- **Kalpana, V.N.**, Payel, C. and Rajeswari, V.D, ‘*Lagenaria siceraria* aided green synthesis of ZnO NPs: anti-dandruff, Anti-microbial and Anti-arthritis activity’, Research Journal of Chemistry and Environment , ISSN 0972-0626, November 2017, Vol 21, Issue 11, pp.14-19.
- **Kalpana, V.N.**, Kataru, B.A.S., Sravani, N., Vigneshwari, T., Panneerselvam, A. and Rajeswari, V.D. ‘Biosynthesis of zinc oxide nanoparticles using culture filtrates of *Aspergillus niger*: Antimicrobial textiles and dye degradation studies’, Open Nano, ISSN 23529520 , June 2018, Vol 3, pp. 48-55.
- **Kalpana, V.N.** and Devi Rajeswari, V .‘A review on green synthesis, biomedical applications, and toxicity studies of ZnO NPs’. Bioinorganic chemistry and applications, ISSN 15653633, August 2018, Vol 2018, pp. 12 (Impact Factor-1.920)
- Nagalingam, M., **Kalpana, V.N.** and Panneerselvam, A. ‘Biosynthesis, characterization, and evaluation of bioactivities of leaf extract-mediated biocompatible gold nanoparticles from *Alternanthera bettzickiana*’, Biotechnology Reports, ISSN - 2215-017X, September 2018 , Vol 19, pp. 00268.
- **Kalpana, V.N.** and Rajeswari, V.D. ‘Synthesis of palladium nanoparticles via a green route using *Lagenaria siceraria*: assessment of their innate antidandruff, insecticidal and degradation activities’. Materials Research Express, ISSN 2053-1591, September 2018, Vol 5, Issue 11, pp. 115406 (Impact Factor – 1.449)

- **Kalpana Vellore Nagarajan**, Devi Rajeswari. ‘*Lagenaria siceraria*–synthesised ZnO NPs—a valuable green route to control the malaria vector *Anopheles stephensi*’, IET nanobiotechnology, ISSN 1751-875X, November 2019, Vol 13, Issue 2, pp 170-177 (Impact Factor:2.05)
- **Kalpana, V.N.**, Alarjani, K.M. and Rajeswari, V.D, ‘Enhancing malaria control using *Lagenaria siceraria* and its mediated zinc oxide nanoparticles against the vector *Anopheles stephensi* and its parasite *Plasmodium falciparum*’. Scientific Reports, ISSN 2045-2322, December 2020, Vol 10, Issue 1, 21568. (Impact Factor: 3.998)
- Vasantharaj, S., Sathiyavimal, S., Senthilkumar, P., **Kalpana, V.N.**, Rajalakshmi, G., Alsehli, M., Elfasakhany, A. and Pugazhendhi, A ‘Enhanced photocatalytic degradation of water pollutants using bio-green synthesis of zinc oxide nanoparticles (ZnO NPs)’, Journal of Environmental Chemical Engineering, ISSN 22133437, August 2021, Vol 9, Issue 4, pp105772 (Impact Factor: 4.3)
- Sumathi A., Aruna S., Kalpana V.N., Jenitta H. and Shabnam Shereen A. Phytochemical Profiling, Antioxidative and Antibacterial Efficacy of Leaf Aqueous Extract of *Cassia siamea*. International Journal of Zoological Investigations Vol. 11, No. 2, 1147-1156 (2025) (Impact factor: 0.9)
- Kalpana V.N., Harrshani K., Jayanarmadha D. and Alex Sebastian Raj. Production of Multifunctional Biodegradable Bioplastics from Sugarcane Bagasse Using *Bacillus* sp.: A Sustainable Solution for Active Food Packaging. International Journal of Zoological Investigations Vol. 12, No. 1, 382-399 (2026) (Impact factor: 0.9)
- Gayathri G.A., Remya Vallathol, Kalpana V.N., Vimal Priya S., Sijila Janaardhanan and Sivaagami S. Isolation and Molecular Characterization of Bacterial Pathogens Infecting Goldfish (*Carassius auratus*). International Journal of Zoological Investigations Vol. 12, No. 1, 350-357 (2026)

Book Chapter

- **Kalpana, V.N.** and Rajeswari, V.D., 2017. Biosynthesis of metal and metal oxide nanoparticles for food packaging and preservation: a green expertise. In *Food biosynthesis* (pp. 293-316). Academic Press. ISBN: 978-0-12-811372-1.
- **Kalpana, V.N.** and Rajeswari, V.D., 2019. Preservatives in beverages: perception and needs. In *Preservatives and preservation approaches in beverages* (pp. 1-30). Academic Press. ISBN: 978-0-12-816685-7.
- **V. N. Kalpana and K. Harrshani** , Phytomedicine Innovations: The future of Plant -based Therapies. *Biotechnology and Phytomedicine: CRISPR and Beyond* (pp. 1-20). JPS Scientific Publications. ISBN 978-81-977907-4-4.

- Nabila Mohammed Ishaque , **Kalpana Vellore Nagarajan** , Nafeesa Nawab Khan , Jayanarmadha Dhanabalan , Gopalakrishnan Loganathan. Strain development and optimization strategies for maximizing secondary metabolite yield. *Progress in Biochemistry and Biotechnology* 2026, Pages 49-62
- **V. N. Kalpana**, D. Jayanarmadha and K. Harrshani. Nanotechnology In Agriculture. *Recent Advances in Microbial Sciences*. ISBN: 978-81-979376-7-5. Chapter – 15, Page: 237 – 253
- **V. N. Kalpana** and D. Jaya Narmadha. Microbe Based Plastics: A Sustainable Alternatives. *Recent Advances in Microbial Sciences* ISBN: 978-81-979376-7-5 Chapter – 18, Page: 282 – 296
- K. Harrshani and V N **Kalpana**. Nanotechnology-Enabled Innovations in Healthcare and Medicine. *Fundamentals and Emerging Applications of Nanoscience and Nanotechnology – Volume II*. ISBN: 978-93-48679-89-5. First Edition. Chapter – 2 Pages: 16 – 34
- D. Jayanarmadha & V.N. Kalpana Microbial And Enzymatic Degradation Of Plastics -Environmental Factors Influencing Biodegradation. *Fundamentals and Emerging Applications of Nanoscience and Nanotechnology – Volume III*. ISBN: 978-93-48679-89-5. Chapter – 5 Pages: 64 - 79

Papers Presented in the National/ International Conferences

- Oral presentation on the topic entitled “*Lysinibacillus sphaericus*: A viable option in an integrated malaria vector in 2nd Global Conference on Microbiology in 2nd Global Conference on Microbiology at Conference Mind, 907, F-8, K8 Kalinga Nagar, Bhubaneswar, Odisha-751003 on 10.03.22 – 11.03.22
- Poster Presentation on the topic entitled “Eco-friendly and cost-effective Pd NPs using *Lagenaria siceraria*: Larvicidal activity on mosquito vectors and toxicity study against Zebra fish and HeLa cell lines” in International Conference on Biomaterials, Bioengineering and Biotheranostics (BIOMET 2018), at Centre for Biomaterials, cellular and Molecular theranostics, VIT, Vellore on July 24-28, 2018.
- Oral Presentation on the topic entitled “ Eco-friendly and cost- effective ZnO NPs using *Lagenaria siceraria*: Larvicidal activity on mosquito vectors and toxicity study against Zebra fish and HeLa cell lines” in Second International Conference on Advances in Materials Science and Technology at Centre for crystal growth, VIT, Vellore on October 9-11, 2017.

- Poster Presentation on the topic entitled “Synthesis of palladium nanoparticles using *Lagenaria siceraria* seed extract and its larvicidal efficacy against three mosquito vectors in First International Conference on Nanoscience and Nanotechnology at Centre for Nanotechnology Research, VIT , Vellore on October 19-21, 2016.
- Oral Presentation on the topic entitled “ Synthesis of ZnO NPs Using *Lagenaria Siceraria* Seed Extract and Its Larvicidal Efficacy Against Three Mosquito Vectors *Anopheles Stephensi*, *Culex Quinquefasciatus*, and *Aedes Aegypti*” in International Conference on Environment and Health in Changing Climate – ICEHCC 2016 at Bharathidasan University, Tiruchirappalli on September 14-16, 2016.
- Oral Presentation on the topic entitled “Biodegradable plastics from Bacillus Sp : A Promising solution for greener tomorrow” in International Conference on Emerging trends and Innovations in Life Sciences(ETILS) – organized by the Research Department of Zoology, IQAC and Institution ‘s Innovation Council, Seethalakshmi Ramaswami College, Tiruchirappalli on 05.02.2025 & 06.02.2025

Online Courses Completed

- Introduction to Food and Health – Conducted by Stanford University. (2022)
- Antimicrobial Resistance- Theory and Methods – Conducted by Technical University of Denmark (DTU). (2022)
- Medical Bacteriology Conducted by Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Microbiologists Society, India; & Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil. (2021)
- “Microscopy – An Overview (Phase I)” organized by Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Microbiologists Society, India; Biotechnology Society of Nepal and Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil
- “Medically important bacteria (phase I)” -Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Biotechnology Society of Nepal (BSN) and Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil (2023)
- Infectious Disease Transmission Models for Decision-Makers – Conducted by Johns Hopkins University (2025)

Seminars Organized

- Virtual Seminar on “Exploring Entrepreneurship From Spirulina Farming: A Better Tomorrow For Life Science Graduates” – 28th January 2022
- Virtual Seminar on “Multidrug Resistant Bacteria : A Significant Threat to Global Public Health” – 19th November 2022
- Guest Lecture on “Magic Melody of Life” – 20.07.2023

Organization of various events

Organized International Conference on Microbial Bioprospecting Towards Sustainable Development (ICBTSD - 2024) – 17.10.2024

Participation in Workshops

- Workshop on “Documentation and Data Management” – Auxilium College (Autonomous) – National-October 29th 2021.
- Workshop on Research Paradigm and Hands on SPSS for Beginners – IOT Academy – National – 1st August 2022 – 5th August 2022
- Workshop on Molecular Docking - Nirmala College for Women, Coimbatore in collaboration with Auxilium College (Autonomous), Vellore and Providence College for Women ,The Nilgiri – National – 20th February – 21st February 2023.
- Artificial Intelligence Tools – IGNITE Life skill academy, Sacred Heart College (Autonomous), Thevara, Kochi. 1st December 2024

Participation in Faculty Development Programme

- Faculty Development Programme on “Teacher Quality and Quality Teaching in HEI’s – IOT Academy – National – January 19th January to 26th January 2022.
- Faculty Development Programme on IP Awareness – Intellectual Property office, India- National – January 25th 2022
- Faculty Development Programme on Stress Management for Teachers in HEI’s – IOT Academy – National – 19th March 2022
- Faculty Development Programme on LibreOffice suite Writer, Calc & Impress - Auxilium College (Autonomous), Vellore in association with Spoken Tutorial, IIT Bombay – National – 26th May 2022- 10th June 2022

- Faculty Development Programme on Teaching cum Research Excellence - Shaheed Rajguru College of Applied Sciences for Women (University of Delhi) – International- 16th October 2022-17th October 2022.
- Seven Day International Faculty Development Program on “Advanced Techniques in Research Methodology” PG and Research Department of Commerce Patrician College of Arts and Science in association with IQAC from 09.04.2024 – 16.04.2024
- “A Five-Day National Level Online FDP on “Beyond Boundaries: Driving Innovation in Research” - Organized by Committee for Research Ethics, Publication & IPR, Auxilium College (Autonomous), Gandhi Nagar, Vellore in Collaboration with North East Institute of Social Sciences & Research, Dimapur, Nagaland. - 26.12.2024 to 30.12.2024

Participation in webinar/Seminar

- International Seminar on Diseases of Aquatic animals - Abdul Hakeem college, Melvisharam, Vellore – International – 22nd August 2017
- Webinar on Approaches in Molecular Biology - KMG college of arts and science, Gudiyattam – National – 03rd August 2021
- Webinar on Stress and Time management for Teachers in HEI’s - IOT Academy – National – January 5th 2022.