

Mrs. Varsha Kelkar-Mane,
MSc, Ph.D, FRSC, Life Fellow Indian Chemical Society

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Highlights:

16+ years' experience in Academia, Teaching, Research / Research Management, Student Mentoring in positions of continually increasing responsibility

Technical Leadership and in Coordination and Project Management of multi-million-dollar national as well as international projects

- Demonstrated expertise in: Environment and Biotechnology, with emphasis on diagnostics and therapeutics, paleontology & archival preservation, bioprospecting and bio-valorization.
- Students mentoring: Mentored seven students for PhD in Biotechnology and over thirty graduates.
- Designed and taught masters as well as undergraduate courses.
- Represented University of Mumbai in international collaborations and associations. Coordinated GIAN (Global Initiative for Academic Networks), a Ministry of Human Resource Development, Govt of India initiative
- Designed, formulated and articulated vision for University of Mumbai via white paper and electronic submissions for an Erasmus+ project titled “Internationalized Master’s degree education in nanoelectronics in Asian universities”
- Partnered and collaborated with multiple institutes across the continents in designing curricula for social and ethical aspects of Nanotechnology that cater to learners
- Memberships in National organizations: Association of Microbiologists of India and Association of Biotechnologists Led Enterprise.

Professional Experience:

Current employer: University of Mumbai

Current Designation: Professor and Head of the department of Biotechnology

Research experience:

- Mentored seven students for PhD in Biotechnology and over 30 research graduates from national as well as state institutes
- Reviewer for various national as well as international journals like Scientific Reports, Nature, *PlosOne*, Wetlands, RSC Chemical Biology, Current Science etc.

- Directed projects on environment and biotechnology with studies focused on:

- ❖ Elucidation and analysis of deterioration and methods of restoration of archives. Devised novel methods for non-invasive microbial sampling have been the highlights of the project. These methods maximized smooth surface sampling and have been effective with creviced surfaces. Achieved microbial decontamination of archives enhancing their preservation by retarding their deterioration

- ❖ Unfolded the microscopic world of Microbialites and Vertebrate Fossil Record. Directed work on animal fossils from Shivalik ranges in upper north of India to the Cunoor caves, in south India to reveal the possibility of a biofilm based microbial model for fossilization.

- ❖ Delineated contribution of microbial world to fossilization. Researched and demonstrated the prevalence of microbial colonization on fossils. Elucidated their role in pigmentation of fossil surfaces and delineated their possible contributions to the process of bone diagenesis.

- ❖ Process optimization for determination of maturation of Bamboo and extraction of cellulosic mass from bamboo. Designed an on field, one step, color development method for determination of maturity of Bamboo-a crucial test for end users as well as harvesters. Successfully demonstrated extraction of cellulosic biomass from Indian varieties of bamboo that were hitherto not been thought suitable for the process

- ❖ Demonstrated use of copper as an anti-candidal agent. Elucidated, for the first time, the potential of the ancient Indian wisdom of using water stored in copper vessels to combat drug resistant *Candida* a known nosocomial opportunistic pathogen

- ❖ Isolated, characterized and demonstrated multiple novel applications *Chlorella emorsonii*, a freshwater microalga. Demonstrated the biochemical synthesis of a dental analgesic; Chloretone (2-propanol-1,1,1-trichloro-2-methyl) using *Chlorella emorsonii*. Synthesized Vitamin E using gamma irradiated, chemically supplemented *Chlorella emorsonii*. Established anti-quorum activity of a freshwater microalga that could effectively combat the virulence factors, pyocyanin, protease, elastase, rhamnolipid, pyochelin, polysaccharides and biofilm production in *Pseudomonas aeruginosa* a known nosocomial pathogen

Developed an antiaging cosmeceutical with *Chlorella emorsonii* actives

- ❖ Use of microalgae in phycoremediation of air. Devised a portable and economical air purifying unit with over 50% air purification efficacy using microalgae to enhance the oxygen content in air.

❖ Nanoparticles and their applications in diagnostics and therapeutics. Effectively synthesized biologically compatible monodispersed aqueous suspension of nanosized oleic acid coated Fe₃O₄ using chemical co-precipitation and phase transfer method.

Demonstrated successful application of SPIONS

- as economically effective PCR enhancers with potential replacement to Gold and silver nanoparticles.
- as amyloid plaque disrupters.
- as astrocytic differentiating agents in arresting proliferation of C6 glioma paving way for a novel approach in the multimodality treatment of C6 glioma.

PhD scholars supervised:

Dissertation Topic	Name of the scholar
Iron oxide Nanoparticles: Synthesis, physicochemical characterization and invitro biological applications	Dr Priyanka Kambli
Microbiological analysis of archival documents and plasma treatment for their preventive and curative remediation	Dr Salgo Merin
Studies on freshwater microalgae; regulation of gene expression as a function of environmental cues.	Dr Sneha Sawant
Antifungal activity of copper and its alloys	Dr Rinky Mudiar
Symbiosis of microalgal cultivation and environmental remediation	Ms Sarita Tanwar
Processing natural fibers: A biotechnological approach	Dr Saraswati Gupta
Bio-valorization of chitin for optimized production of varied applications of chitosan	Ms Shamal Pawar
Nanozymes- Exploring potential from catalysts to microbicides	Ms Janhavi Shastri
Unfolding the effect of plant-based appetite modulators on gene expression and biochemical profile of gut microbial marker organisms	Ms Sajari Raut

Leadership (Administrative and Managerial) role in academic, Government settings:

- Chaired Research committee, Board of studies in Biotechnology and Microbiology, University of Mumbai. Handled all academic and administrative responsibilities at departmental as well as University level 2007 onwards.
- Nominee of Institutional Biosafety Committee, DBT 2009-2012; Department of Biotechnology, Government of India Nominee to monitor the safety related aspects for the ongoing r-DNA projects & activities involving Genetically Engineered crops in industry in India

- Member and chairperson on Board of examinations for Public services, University and other national entrance examinations
- Member of Academic committee, International Junior Science Olympiad: Resource person in Biological sciences; designed experiments for the finale. (2012-2013)
- Coordinator Global Initiatives of Academic Networks Ministry of Human Resource and Developments, Govt of India Initiative 2015 onwards
- Wrote and articulated vision for University of Mumbai via white paper and electronic content for Socio-ethical and environmental aspects of nanotechnology and nanoelectronics under an Erasmus+ funded project titled “Internationalized Master’s degree education in nanoelectronics in Asian universities” 2016
- Developed a repository of online courses contents that is being shared by initially twelve partner universities in seven different countries including Israel, Italy, Bulgaria, China, India, Malaysia, Norway. 2016-2019
- Selected as a member of young leaders dealing with higher education, innovation and start-up ecosystem for Discover Israel Programme 2018
- Coordinator of *Rashtriya Uchhatar Shiksha Abhiyan*, Government of India 2019 onwards

Invited talks:

Sr No	Title	Place	Date and Year
1	Mind What You are Breathing	Colloquium on Advanced Science Engineering and Technology, TIFR Mumbai	11 th July 2014
2	Microbial contribution to the existence and evolution of life on earth	Indian Museum, Kolkata	9 th Nov 2016
3	History of earth and Fossilization	Viva College, Mumbai	4 th Feb 2017
4	Bio-deterioration and Preservation of Polymers	Society for Biological Chemists, UM DAE CEBs	19 th Aug 2017
5	Refreshers course, Kelkar College	Archives- History, Analysis and Science	24 th Oct 2017
6	Refreshers course Physics	Nanotechnology, Past, Present and Future	21 st April 2017
7	Society of Biological Chemists	CEBS, Mumbai University	19 th Aug 2017
8	Industrial biotechnology and climate change	Mumbai School of Economics, University of Mumbai	1 st Feb 2020
9	Understanding life – A microbiologist’s perspective	Lecture series Adventures in Archaeology	13 th May 2020
10	Climate change and pandemics https://www.youtube.com/watch?v=hz6rSjYaJ-g	Khalsa College, University of Mumbai	8 th June 2020

11	Careers in Microbiology	Garware, Dell, American India Foundation organized Workshop on career guidance and employment skills	25 th Feb 2021
12	Global Women's Breakfast 2021, Empowering diversity in Science 2021	International Union of Pure and Applied Chemists.	9 th Feb 2021
13	Microbes...make it, break it	Webinar on Women in Material Science; MRSI, Pune Chapter & Maharashtra Academy of Sciences	30 th March 2021
14	Archival degraders as aids to efficient biopolishing agents	American Chemical Society's Spring 2021 Plenary talk: Advancing International Chemical Business: Innovation and Entrepreneurship	6 th April 2021
15.	Microalgae- from Antimicrobials to Air purifiers	American Chemical Society's Plenary talk: Ideas from Mind to market international collaborations, track: Division of small chemical business of ACS	7 th April 2021
16	Leadership in Science	Chanakya Institute of Public leadership	1 st May 2021
17	Science- Leading; what's in for us?	IARF's Earth & Space International Webinar Series	10 th July 2021
18	Nano-diagnostics: PCR process development applications and beyond	Royal Society of Chemistry	27 th July 2021
19.	Bamboo: Maturity and wool making	American Chemical Society's Presidential talk: Ideas from Mind to market international collaborations, track: Division of small chemical business of ACS	30 th August 2021
20.	A journey called..... Research	Key note speaker at Science, technology and Innovation, Inaugural event, Indian Schools in Oman, Indian School Salhala	18 th September 2021
21	Leadership..... in Science what's in it for us??	Refresher course in Biological Sciences and technology, Dr Babasaheb Ambedkar Marathwada University, Aurangabad	27 th Nov 2021
22	Researching.....the way of life	Jigyasa 2021 K C College, Mumbai	16 th December 2021
23	Women who changed the face of Science	CKThakur college Panvel	29 th November 2021

Sponsored Projects

1. Erasmus+ Sanctioned; Internationalized Master's degree; Education in Nano electronics in Asian Universities. 2016-2019; Rs 4.3 million
2. "Microalgae Cultivation –An Effective Solution to Air Pollution" MMR EIS-2017-2019. Rs 1.5 million
3. Environmental remediation of lake water using the floating wetlands. CSR Ayyapa Builders 2013. Funding amount sanctioned Rs 1.5 million
4. Study of the PCR enhancing efficiency of Transition metal – DST Purse project; year of commencement April 2011-14. Funding amount sanctioned Rs 1.2 million.
5. Preservation of archival documents and microbial biodeteriogens database preparation for archival documents – in permission with the Directorate of Archives, Govt of Maharashtra; year of commencement – May 2012.
6. Green cosmetics- University with Potential for Excellence Green technology scheme 2012.
7. Microbial degradation studies of plasma treated and untreated Poly (ϵ -caprolactone). - In collaboration with Institute of Chemical technology, Mumbai- Year of commencement 2010-2019.

Publications:

Title of project: Nanoparticles – biological interactions

1. R Mudiar and V Kelkar Mane*, "Enhancement in Efficiency of Polymerase Chain Reaction by Silver Nanoparticles", International Research Journal of Biological Sciences, 2014, 3 (2), 30.
2. P Kambli, A Valawade, D Kothari, V Kelkar-Mane* Morpho structural changes induced in *E. coli* exposed to copper ions in water at increasing concentrations, World Journal of Pharmaceutical Research, 2015, 4, (10), 837.
3. A Naik, P Kambli, M Borana, N Mohanpuria, B Ahmad, V Kelkar-Mane* and U Ladiwala, "Attenuation of lysozyme amyloid cytotoxicity by SPION-mediated modulation of amyloid aggregation" International Journal of Biological Macromolecules, 2015, 74, 439.
4. D Kapse, S Jacob, V Kelkar-Mane, R Hande and H Muthurajan*. Study of antimicrobial activity of Perovskite nanocubes of sodium potassium niobate ($\text{Na}_{0.5}\text{K}_{0.5}\text{NbO}_3$) J Biotechnol Biomater 2015, 5:6

5. P Kambli and V Kelkar-Mane*, “Nanosized Fe₃O₄; an efficient PCR yield enhancer- Comparative study with Au, Ag Nanoparticles”, Colloids and Interfaces B: Bio interfaces, 2016, 141,546.
6. R Mudiari, V Kelkar-Mane* “Targeting fungal menace through copper nanoparticles and *Tamrajal*”, Journal of Ayurveda and Integrative Medicine, 2018 (xxx)1.
7. S Gupta, S Bisht and V Kelkar-Mane,* “Assessing the enzyme modulating and antimicrobial efficiency of *moringa* capped silver nanoparticles for their potential use as fodder supplement”, Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences, 2019, 5(2) 927.
8. Role of DNA damage and repair mechanisms in uterine fibroid/leiomyomas: A review Sneh M Toprani, Varsha Kelkar Mane, *Biology of Reproduction*, ioaa157, <https://doi.org/10.1093/biolre/ioaa157> 09 September 2020
9. A short review on DNA damage, repair effects in lip cancer, Sneh M Toprani, Varsha Kelkar Mane, Hematology/oncology and stem cell therapy; 26 January 2021, doi: <https://doi.org/10.1016/j.hemonc.2021.01.007>

Title of project: Paper/polymer deterioration

10. S Merin, A Bhagwat, V Kelkar-Mane* “Bacillus species as an intrinsic controller of fungal deterioration of archival documents”. International journal of Biodegradation and bio deterioration 2015. 104, 46.
11. G Arolkar, S Merin, V Kelkar-Mane, R Deshmukh*, “The Study of Air-Plasma Treatment on Corn Starch/Poly(ϵ -caprolactone) Films”, Polymer degradation and stability, 2015, 120, 262.
12. G Arolker, S Merin, V Kelkar-Mane, R Deshmukh*, “Effect of TEOS plasma polymerization on Corn Starch/Poly(ϵ -caprolactone) film: characterization, properties and biodegradation”, *RSC Advances*, 2016, 6, 16779.
13. V Kelkar-Mane* S Merin Jacob, J Raseetha, “Physico-chemical assessment of bio deteriorated and biodegraded archival paper” Journal International Journal of Conservation Science, 2017, 8, (4), 607 12.
14. S Gupta and V Kelkar-Mane*, “Biovalorization and induction parameters optimization for a neutral cellulase isolated and characterized from *Bacillus licheniformis* KM999221”, Int J Pharma Bio Sci 2019, 10 (4) (B) 18.
15. S Jacob, J Raseetha, V Kelkar-Mane* “Seasonal variations in the aerobiological parameters of a state archival repository in India”, World Journal of Pharmaceutical Research, 2019, 8 (5) 1459. IF 0.65

16. S Gupta & V Kelkar Mane*, 'Use of uni-enzyme on cotton knitted fabric and its comparison with commercial formulation. Indian Journal of Fibre and Textile Research Vol 46, Dec 2021, pp 349-353.

Title of project: Environmental Microbiology

17. M Motiwalla, P Punyarthi, M Mehta, J S D'souza and V Kelkar-Mane*, "Studies on degradation efficiency of polycaprolactone by a naturally occurring bacterium" Jr of Environmental Biology, 2013, 34.
18. A Rath and V Kelkar-Mane*Diagnostic polymerase chain reaction method for detection of Food-borne *Salmonella*" Bionanofrontiers, 6 (1), 2013,17.
19. S Mehta, P Kambli, K Wani, S Tanavde, S Mirgal, V Kelkar-Mane* & R Kumar, "Study of bio-aerosols in a prominent temple in Mumbai City, India" International Journal of Environmental Studies. 2013, 17.
20. S Sawant, V Kelkar-Mane* "Study of bacterial contaminants in local as well as branded Lipsticks before and after consumer use", International journal of recent advances in multidisciplinary research, 2015, 2 (1), 154.
21. F Katkar, V Sathe, V Kelkar Mane*, S Kumar Manjul and A Manjul "Microbial Infestation on Archaeological bones: A case study of Binjor Rajasthan", Fourth International Symposium on Paleohistology, New Jersey State Museum, Post-Symposium Publication, 2018, 28.
22. S Tanwar, V Kelkar Mane,* "Whole Metatranscriptome Analysis - An Indicator of Anthropogenic Activities in a Sub Himalayan Endorheic River, a Lifeline of Northern India", SVOA Microbiology, 2020, 9.
- 23.

Title of project: Phyco-actives

24. R Mudiar, V Kelkar-Mane* A Bhagwat, "Analysis of traditional food additive kolakhar for its physico-chemical parameters and antimicrobial activity", Eur Academic Research, 2014, II, (8),10531.
25. K Popat, P Kambli, A Chakrabarty and V Kelkar-Mane* "The Comparative study of Antioxidant activity of leaves and stems of *Clitoria Ternatia* L." Bionanofrontiers, 2014, 7 (12),38.
26. R Mudiar, A Thakur and V Kelkar-Mane* "Comparative analysis of physicochemical parameters and Bioaccumulation between *Musa* species" Journal of Biodiversity and Environmental Sciences (JBES), 2014, 5 (4),31.

27. S Sawant, A. Joshi, A Bhagwat, V. Kelkar- Mane* "Tapping the antioxidant potential of a novel isolate- *Chlorella emersonii*," World journal of pharmaceutical research, 2014, 3 (7), 726.
28. V Kelkar-Mane* "Constructed Wetlands and Phycoremediation", Proceedings of UGC sponsored National Seminar on Recent Trends in Environmental Waste Management. KLE society's Gudleppa Hallikeri College Haveri, 2015.
29. S Sawant, P Murkute, A. Bhagwat, V Kelkar Mane* "Effect of copper on the generation time and antioxidant potential of a novel isolate of *Chlorella emersonii* KJ725233," International journal of pharmacy and Pharmaceutical Sciences, 2016, 8, (3), 385.
30. S Sawant, V Kelkar Mane* "Correlating the Anti –Aging Activity with the Bioactive Profile of *Chlorella emersonii* KJ725233; its Toxicological Studies for a Potential use in Cosmeceuticals," Pharmacognosy Communications, 2017, 7 (4), 152.
31. S Sawant, S. Mohakar, V Kelkar Mane* "Striking Synergism between Water Quality Restoration and Algal Single Cell Protein (SCP) Production," International Journal of Pharma and Biosciences, 2017, 8 (3) 163.
32. S. Sawant and V Kelkar Mane* "Nutritional profile, antioxidant, antimicrobial potential and bioactives profile of *Chlorella emersonii* KJ725233," Asian J Pharm Clin Res, 2018, 11 (3), 220.
33. S Sawant, V Kelkar Mane* "Study of the changes in the growth, protein and bioactive profile of *Chlorella emersonii* KJ725233 in response to sodium and ammonium nitrate", Journal of Applied Biology and Biotechnology, 2019, 7 (4) 19.
34. S Sawant, R Singh, S Ghosh, V Kelkar Mane* "Effect of gamma irradiation on antioxidant potential and bioactives of a cosmeceutically significant *Chlorella emersonii* KJ725233" International Journal of Pharmacy and Pharmaceutical Sciences 2019, 11 (8) 85.
35. Sneha Sawant Desai, Reema Devi Singh, Sukhendu B Ghosh, Varsha Kelkar*
A novel strategy for disarming quorum sensing in *Pseudomonas aeruginosa*-*Chlorella emersonii* KJ725233, Journal of Applied Biology & Biotechnology, 2020 8(05), 78.
36. Alok Patel Sneha Sawant Desai Varsha Kelkar Mane Josefine Enmana Ulrika Rova Paul Christa Kopoulosa Leonidas Matsakasa, Futuristic food fortification with a balanced ratio of dietary ω -3/ ω -6 omega fatty acids for the prevention of lifestyle diseases, Trends in Food Science & Technology, Volume 120, February 2022, Pages 140-153, <https://doi.org/10.1016/j.tifs.2022.01.006>. I.F 12.00

NCBI publications

1. H Purohit, A. Kapley and V Kelkar-Mane*. National Center for Biotechnology Information (NCBI), U.S. National Library of Medicine; ACCESSION EU427448 *Enterobacter* sp. VK1 16S ribosomal RNA gene, partial sequence. 2008
2. M Motiwala, J. D'souza. and Varsha Kelkar-Mane*. National Center for Biotechnology Information (NCBI), U.S. National Library of Medicine ACCESSION GQ220330; *Bacillus* sp. CBSi1 ribosomal RNA gene partial sequence. 2009
3. V Kelkar-Mane*, S Sawant and A Bhagwat, *Chlorella emersonii*- Antioxidant activity, 18S ribosomal RNA gene, partial sequence. National Center for Biotechnology Information (NCBI), U.S. National Library of Medicine ACCESSION KJ725233, 2014.
4. S Jacob, A Bhagwat. and V Kelkar-Mane*. *Cladosporium cladosporioides* NF4 KM999223- Biodegradation of archival documents, 16s ribosomal RNA gene, partial sequence, NCBI Accession No. KM999222; 2015
5. S Jacob, A Bhagwat, and V. Kelkar-Mane*, *Aspergillus sydowii* NF3 KM999222- Biodegradation of archival documents, 16s ribosomal RNA gene, partial sequence, NCBI Accession No. KM999222, 2015.
6. S Jacob. A. Bhagwat. and V. Kelkar-Mane*. *Bacillus licheniformis* HD2 KM999221– Antifungal organism isolated from archival documents, 16s ribosomal RNA gene, partial sequence. NCBI Accession No. KM999221 2015.
7. Sawant S, V Kelkar-Mane*, *Proteus vulgaris* NCBI accession No.KM220899; Isolation from lipstick samples, 16s ribosomal RNA gene, partial sequence. 2015
8. S Sawant, V Kelkar-Mane*, *Providencia vermicola* NCBI accession No. KP031698; Isolation of bacterial lipstick contaminants, 16s ribosomal RNA gene, partial sequence. 2015
9. S Sawant, V Kelkar-Mane*, *Staphylococcus arlettae* NCBI accession No. KP 031697; Isolation of bacterial lipstick contaminants, 16s ribosomal RNA gene, partial sequence, 2015
10. S Sawant, V Kelkar-Mane*, *Morganella morganii* - NCBI accession No. KP031696; Isolation of bacterial lipstick contaminants, 16s ribosomal RNA gene, partial sequence, 2015
11. S Sawant, V Kelkar-Mane*, *Proteus penneri* NCBI accession No. KP031695; Isolation of bacterial lipstick contaminants, 16s ribosomal RNA gene, partial sequence, 2015.

Chapters published:

1. **Name of the Book** Lilavati's daughters -The Women Scientists of India, 'Not so quite has flown Iravati' V. Kelkar Mane* Jai Nimbkar, Published; Indian Institute of Science, Bangalore, 17-20 Edited by Rohini Godbole, Ram Ramaswamy.
2. **Name of the book** Health Perspectives of nutraceutical fatty acids- 'Nutraceutical Fatty Acids from Oleaginous Microalgae: A Human Health Perspective' S Sawant and V. Kelkar Mane* Wiley -Scrivener publication house. <https://doi.org/10.1002/9781119631729.ch9>.
3. Sick Building Syndrome, Vanrai health and environment issue.

Filed Indian patent 'A low cost magnetite nano particle system for higher product efficiency in polymerase chain reaction' vide application nos 201621014468 dated 26th April 2016.

Papers presented at National, International Conference / Seminar

1. P Kambli, V Kelkar-Mane*, and J D'souza, Super Paramagnetic Iron Oxide Nanoparticles (SPION) enhanced Polymerase Chain Reaction. The National Symposium on Frontiers of Biophysics, Biotechnology and Bioinformatics, organized by the University dept of Biophysics, University of Mumbai, 2013.
2. R Varma, D Kothari, P Kambli, V Kelkar-Mane*, R Tewari. Economical method to manufacture nano-composite glass with antimicrobial properties for sterile product storage. "Synergy in Physics and Industry (SPI-2013) at Bhabha Atomic Research Centre, 21st to 22nd Jan 2013.
3. S Sawant, A Joshi, A. Bhagwat, V Kelkar-Mane,* Effective induction and production of bioactives from microalgae, UGC-SAP sponsored National Conference on Advances in Synthetic and materials chemistry 2014.
4. S Sawant, V Kelkar-Mane*, Biochemical profiling of two commercially important novel isolates of freshwater microalgae 37th All India conference of Botanical Society and National symposium on Biodiversity and Climate change in collaboration with Maharashtra state biodiversity board. 7-9th Nov 2014
5. S Sawant and V Kelkar-Mane*, Study of bacterial contaminants in local and branded lipsticks before and after consumer use, 54th AMI conference, Coimbatore, 12-14th Nov 2014
6. S Merin, A Bhagwat, V Kelkar-Mane*, Sampling archival paper for microbial deteriorogens, 54th Association of Microbiologists conference, Coimbatore, 12-14th Nov 2014

7. V Sathe and V Kelkar-Mane*, Colonization, prevalence, and contribution of the microbial world to fresh water fossilization 4th International Palaeontological Congress, , Mendoza city (Argentina), 28th Sept-3rd October 2014.
8. S.Jacob, J Rathod, C Veera, P Kambli, V Kelkar Mane*, Isolation and Identification of Microorganisms from Soil and their Use as Nitrogen-Fixers and Phosphate Solubilizers for Wheat Crop. National conference on Advances in Biological Science, University of Mumbai, 23rd Dec 2014.
9. S.Jacob, A Bhagwat, V Kelkar-Mane*, Biodeterioration of Archival documents: Preliminary physico-chemical assessment and microbiological analyses, 56th Annual Conference of Association of Microbiologists of India, JNU, Delhi, December 7th-10th. 2015.
10. G. Arolkar, S Merin, A Trimukhe, V Kelkar-Mane, K. Pandiyaraj and R. Deshmukh*, Surface Morphology and biodegradation study of air plasma treated biodegradable polymer (CSPCL) films, National Conference on advance of Plasma Science and Technology Sri Shakthi Institute of Engineering and Technology, Coimbatore, February 19-21, 2015.
11. S.Merin, A Bhagwat, V Kelkar-Mane*, *Bacillus* species as an intrinsic DAE-BRNS life Sciences Symposium on Advances in Microbiology of Food, Agriculture, Health and Environment Controller of fungal deterioration of archival documents, 3rd to 5th Feb 2015.
12. V Sathe, V Kelkar-Mane*, Microbialites and vertebrate fossil record: Microscopic view; 3rd International symposium on paleohistology, Bonn Germany 2-5th July 2015.
13. P Yeh, S.Sawant, H. Muthurajan, V Kelkar Mane* Stimulation of antioxidant potential of a novel isolate of *Chlorella emersonii* KJ725233 as a response to copper, 56th Annual Conference of Association of Microbiologists of India & International Symposium on Emerging Discoveries in Microbiology Jawaharlal Nehru University, Delhi, 7-10th December 2015.
14. S.Sawant, V Kelkar Mane*, Bioactives profiling of *Chlorella emersonii* KJ725233, International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, 22-25th November 2015.
15. P.Yeh, S Sawant, H. Muthurajan, V Kelkar Mane*, Synthesis of Silver Nanoparticles by Green Chemistry of *Carica Papaya* and Study of its Antibacterial Activity, New Horizons In Synthetic and Material Chemistry, University of Mumbai, 26th – 28th November 2015.
16. S.Sawant, V Kelkar Mane*, *Chlorella emersonii* – KJ725233 a potential candidate in healthcare, Meeting of the *Society of Biological Chemists (India)*- Mumbai chapter, ICMR-NIRRH, 22nd August 2015.

17. S Sawant, V Kelkar Mane*, Biological activity of a freshly isolated *Spirulina* species, National Conference on Advances and Innovations in Chemical Sciences, University of Mumbai, 12-13th February 2015.
18. Peyton Yeh, Sneha Sawant, H.Muthurajan, Varsha Kelkar Mane*, Green Synthesis of Zinc oxide Nanoparticles by *Carica papaya* and Study of its Antibacterial Activity, International Conference on Materials Science & Technology, University of Delhi, March 1-4th 2016.
19. S Sawant, V Kelkar Mane* Salt induced boosting of proteins, carotenoid and antioxidant content of *Chlorella emersonii* KJ725233, National Conference on Biodiversity, Biology and Biotechnology of Algae, University of Madras, 9-10th January 2017
20. S Sawant, V Kelkar Mane* Striking synergism between water quality restoration with algal single cell protein production. International Conference on Environment Management and Sustainability, SIES Nerul 4-6th January 2017.
21. S Jaiswal, V Kelkar Mane* Effective Processing of Agro waste for the Production of Bast fiber/Smart Packaging, Carbon Capture and Its Utilization Conference, CSIR-National Chemical Laboratory & The Royal Society of Chemistry 14-15 December, 2018.
22. S Jaiswal, V Kelkar Mane* Valorization of Agricultural Waste for Processing of Fiber, Research meet SIES College of Arts, Science and Commerce (Autonomous) Sion(West), Mumbai-400 022 21st December 2018
23. S Pawar, D Kambli, V Kelkar Mane*, Development of an Efficient Method for Valorisation of Small Aquatic Crustacean Waste, Carbon Capture and Its Utilization Conference, NCL Pune, 14th -15th December, 2018
24. S Tanwar, V Kelkar Mane*, A Novel microalgal scrubber for hydrogen sulfide remediation, Carbon Capture and Its Utilization Conference, NCL Pune, 14th -15th December, 2018
25. S Pawar, D Kambli, V Kelkar Mane*, Development of an Efficient Method for Valorisation of Shellfish Waste, Basic concepts in research- scientific approach and attitude, SIES college Sion, Mumbai, 9th March 2019.
26. S Tanwar, V Kelkar Mane*, Microscrubbers for remediation, Basic concepts in research- scientific approach and attitude, SIES college Sion, Mumbai, 9th March 2019.
27. S Tanwar, S Sawant, Varsha Kelkar Mane* Microalgae traps for environmental remediation, National conference on technology outreach as enabler for inclusive and sustainable development (Tech4Seva), IIT-Delhi, Delhi, 10th -12th August 2019.
28. S Pawar, V Kelkar Mane*, Designing An Effective Biofertilizer Seed Coat, National conference on technology outreach as enabler for inclusive and sustainable development (Tech4 Seva), IIT, Delhi, 10-12th August 2019.

29. S. Tanwar, S Pawar, V Kelkar Mane,* Effect of culture containers on growth and antioxidant potential of *Spirulina* Sp, National Conference on Microbial Bioprospecting: Present & Future Scope, Association of Microbiologists of India, Lovely Professional University, Punjab, 06th- 07th March 2020.
30. S Pawar, S Jacob, S Gupta, V Kelkar Mane*, Preservation of archival documents by intrinsic *bacillus* cohabitants, National Conference on Microbial Bioprospecting: Present and Future Scope, Association of Microbiologists of India, Lovely Professional University, Punjab, 06th- 07th March 2020.

Former employer:

National Environmental Engineering Research Institute, Council of Scientific and Industrial Research.

Designation: Research Fellow (2003-2004)

Explored multiple aspects of environmental sampling, water, synthetic base muds and soil analysis. Devised innovative methods of microbial sampling for surfaces. Developed an efficient system called as Phytoid Technology that is fundamentally based on “re- engineered” wetlands systems to remediate wastewater.

Educational Qualifications:

Ph.D. (1999-2003) Applied Biology, C.B. Patel Research Center, University of Mumbai.

Title of the Research project: Isolation and application of *Zymomonas* (from Black Strap Molasses)

Name of Mentor: Dr Supriya Save

Project highlights: Characterization of the microbial flora of black strap molasses. The presence of a high osmotic stress tolerant gram-negative bacterium *Zymomonas* was demonstrated in black strap molasses. The benefits of Black strap Molasses as organic liquid fertilizers and sprays, have been well established; the said study was undertaken to understand the possible microflora associated with this highly concentrated source. The isolate obtained was characterized and explored for use as an alternative agent for fermentation. Processes were developed for alcohol production using this organism in a high concentrate sugar solution. The bacteria proved to be efficient enhancers for dough leavening at temperatures difficult for yeast to grow. The molasses along with the said isolate was for the first time used as an effective biofertilizer that enhanced seed germination, under conditions of stress.

M. Sc. Biochemistry, Institute of Science, University of Mumbai, 1996-1998 (*1st class*)

B.Sc. Microbiology and Biochemistry, Sophia College, University of Mumbai, 1993-1996 (*Distinction*)

Awards for academic excellence:

1. Basil and Sophie Furtado Scholarship for academic performance for the year 1995-1996, Sophia College
2. University scholarship for the year 1996-1997 for Academic performance
3. Daxina fellowship in Biochemistry MSc, Institute of Science Mumbai, 1997-98

4. Uma Kela prize for Lady Student standing first in M. Sc (Biochemistry) in the academic year 1997-1998 (The Institute of Science).
5. Pandit Bhagwandin Dube and Ramdulari Dube Scholarship for the year 2000-2002 (PhD scholarships, University of Mumbai)
6. The Giam III (Global impact of Applied Microbiology) Scholarship for the year 2000-2002.

Courses enrolled /completed (MOOC/Online/Regular mode):

1. Classical Papers in Molecular Genetics, University of Geneva, Geneva, completed online on Coursera 31st May 2020.
2. Epidemics, Pandemics and Outbreaks by University of Pittsburgh on completed online on Coursera March 21, 2020
3. Neuropharmacology of Addiction, MHRD GIAN program, Panjab University; 09-13th Oct 2017
4. Certificate course on Ancient Indian culture; June 2015 (90 hrs),MM Dr. P.V. Kane Institute for Post graduate studies and Research, University of Mumbai and Asiatic Library.

Memberships of organizations

1. Member of Association of Microbiologists: AMI/LM-040/2011
2. Member of ABLE (Association of Biotechnology LED enterprise) 2011

Hobbies:

Trained in Indian classical dance form (*Bharatnatyam*; Guru: Shrimati Sucheta Bhide-Chapekar), cooking, travelling (to places of Archeological and historical significance).