

Dr. Sanket Tembe, Ph.D.

Present position

- Assistant Professor

Contact Details: sankettembe@fergusson.edu

020-67656456

Work Experience

Teaching: 10 years

Research/Industrial: 14 years

Personal Profile

Experienced biochemist and a faculty member of Biotechnology with over 14 years of research experience, specialized in recombinant proteins, DNA barcoding and Biosensors.

Course(s) Taught (Only Titles)

1. Biological Chemistry
2. Metabolic Pathways
3. Protein Biochemistry and Enzymology
4. Bioanalytical Techniques I and II
5. Biological Chemistry and Bacteriology
6. Critical Reading of Primary Scientific Literature
7. Research Methodology
8. Genomics and Proteomics
9. Analytical Techniques
10. Foundation of Chemistry (For Biological Science)
11. Proteomics and Metabolomics

Field of Specialization/Areas of Interests

- DNA barcoding
- Biosensors
- Molecular cloning, Protein purification and characterization

Education

- **Ph.D. (Biochemistry):** from 2002 to 2008
 - **Title of the Thesis:** Immobilization of tyrosinase for biosensor construction.
 - Name of University / Institution:** Department of Chemistry, University of Pune campus (Now SPPU)
 - Year of Award:** 2008
- **Master of Science (Biochemistry):** 2002
 - University/College: Department of Chemistry, University of Pune campus (Now SPPU)
- **Bachelor of Science- (Chemistry):** 2000
 - H.P.T. Arts and R. Y. K. Science College, Nasik, University of Pune (Now SPPU)

Fellowship/Awards/ Certifications/Achievements/Recognitions

- Selected for Post-doctoral Research Associateship by Department of Biotechnology, Government of India.
- Selected for Junior and Senior Research Fellowship from University of Pune-Bhabha Atomic Research Centre Collaborative programme.
- Awarded international travel support by DST, Govt. of India for attending World Congress on Biosensors at Shanghai, China.
- 2nd prize at ‘Avishkar’- a state level inter-university research project presentation competition held at S.N.D.T. University, Mumbai on 10-12th January 2008.
- Certified with ‘Intensive Certificate Course in German’ conducted by Department of Foreign Languages, University of Pune.

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
1. Member, DES's Dr P C Shejwalkar Centre for Entrepreneurship and Innovation 2. Member, Central Feedback Committee, Fergusson College 3. Coordinator, Innovision: Idea and Innovation Competition for UG and PG students from Arts and Science 4. Member, Research Coordination Committee (RCC), Fergusson College 5. Member, NAAC- 4 Criteria 3 6. Member, Board of Studies, Department of Biotechnology, Fergusson College 8. Member Secretary, Institutional BioSafety Committee (IBSC), Fergusson College, Pune 9. Coordinator, BSL-1 nad BSL-2 Facility, Fergusson College campus	-	-

Employment History

1) **Organization** : ----- Department of Chemical Science, Tata Institute of Fundamental Research, Colaba, Mumbai

Role : ----- Post Doctoral Research Associate

Duration : ----- October 2010- December 2013

Responsibilities	• Designing and carrying out experiments. • Analysis of results, preparation of project reports.
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2) **Organization** : ----- Modern College and National Centre for Cell Science, Pune

Role : ----- Post Doctoral Research Associate

Duration : ----- January 2009 to September 2010

Responsibilities	· Planning and execution of experiments · Analysis, Manuscript preparation, submission and publication
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Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs)	Duration (Year) (From To)	Type (Minor / Major)	Outcome
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1. Development of tyrosinase based electrochemical biosensor for determination of vitamin E analogue.	BCUD, SPPU	1,60,000/-	2016-2018	1. Minor	Application for patent is filed. Article is published in Patent Office Journal. (Application number: 202221034168)
2. Electrochemical detection of cholesterol using dye replacement method	Fergusson College (under CE)	25,000/-	2019-2020	Minor	Manuscript under preparation.
3. DNA barcoding of invasive plant species from Maharashtra	Fergusson College (under Seed Money Grant)	1,10,000/-	June 2022 – December 2022	Minor	Analysis and manuscript preparation in process.

Research Publications in National and International Journals

1. DNA barcoding of invasive terrestrial plant species in India.

Nayan Lonare, Gayatri Patil , Supriya Waghmare , Reshma Bhor , Hrishikesh Hardikar, **Sanket Tembe***, Mar. 2024, Molecular Biotechnology, DOI 10.1007/s12033-024-01102-z.

2. Optical detection of total cholesterol based on a dye-displacement method’.

Vikas Patil, Hrishikesh Hardikar, Sonali Joshi, **Sanket Tembe***,

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 293, 122425, 2023

3. Maneuvering Mitochondria for Better Understanding of Therapeutic Potential of mtDNA Mutation.

Tembe, S*, in M. T. Fasullo, A. Catala (eds.), Mitochondrial and Reactive Oxygen Species Associated Pathologies, 2021; Intech Open, London. 10.5772/intechopen.96915

4. Revisiting DNA barcoding of true bugs of the infraorder Pentatomomorpha (Hemiptera:Heteroptera) from India

Gowande G., **Tembe S***, Ghate H. V., , 2018; Mitochondrial DNA Part A, 29, 1215-1223.

5. Immobilization strategies for construction of tyrosinase-based biosensors,

Tembe S., D'Souza S. F., 2015; Materials Technology: Advanced Biomaterials, 30, B190-B195.

6. **Tembe S., Shouche Y., Ghatge H. V.** DNA barcoding of Pentatomomorpha bugs (Hemiptera:Heteroptera) from Western Ghats of India. 2014; MetaGene, 2, 737-745. 5. **Tembe S., Kulkarni S., Karve M., D'Souza S. F.** Epinephrine biosensor using tyrosinase immobilized eggshell membrane. 2009; Sensors and Transducers, 107, 111-118.

7. **Tembe S., Kubal B., Karve M., D'Souza S. F.** Glutaraldehyde activated eggshell membrane for immobilization of tyrosinase from *Amorphophallus conopsea*: application in construction of electrochemical biosensor for dopamine, 2008; Analytica Chimica Acta 612, 212-217.

8. **Tembe S., Chaudhari P., Bhoraskar S., D'Souza S. F., Karve M.** Conductivity based catechol sensor using tyrosinase immobilized in porous silicon, 2008; IEEE Sensors, 8, 1593-1597.

9. **Tembe S., Inamdar S., Haram S., Karve M., D'Souza S. F.** Electrochemical biosensor for catechol using agarose-guar gum entrapped tyrosinase, 2007; Journal of Biotechnology 128, 80- 85.

10. **Tembe S., Inamdar S., Haram S., Karve M., D'Souza S. F.** Development of electrochemical biosensor based on tyrosinase immobilized in composite biopolymeric film. 2006; Analytical Biochemistry 349, 72-77.

Patent:

Leader of the group which contributed to getting Fergusson College an Indian Patent on 'A method of detection of sterols' on 15th June 2022.

Participation in Conferences/Seminars/Symposia/Workshop:

1. Sanket Tembe, S. Kulkarni, S. D'Souza, M. Karve, Electrochemical biosensor for epinephrine and norepinephrine using tyrosinase immobilized composite biopolymer matrix, **10th World Congress on Biosensors, Shanghai, China, May 2008.**

2. Sanket Tembe, M. Karve, S. D'Souza, Bioelectrochemistry of phenolic compounds: application in health care and pollution monitoring, **International Conference on Electroanalytical Chemistry, Simla, India, March 2007.**

3. Sanket Tembe, S. Kulkarni, M. Karve, S. Inamdar, S. Haram, B. Kubal, S. D'Souza, Voltammetric study of catechol using biopolymer modified glassy carbon electrode, **International Conference on Electroactive Polymers, Goa, February 2007.**

4. Sanket Tembe, M. Karve, S. D'Souza, Direct electrochemistry of tyrosinase immobilized on glassy carbon electrode: application in construction of electrochemical biosensor, **Discussion Meet on 'Role of electrochemistry in biosensors, nanoparticles, fuel cells and ionic liquids, Bhabha Atomic Research Centre, Mumbai, October 2006.**

5. Sanket Tembe, P. Chaudhari, S. Bhoraskar, S. D'Souza, M. Karve, Conductivity based tyrosinase biosensor

for phenols using porous silicon as an entrapment support, **9th World Congress on Biosensors, Toronto, Canada May 2006.**

Events Organized/Coordinated:

Sr. No	Name of the Event	Name of organizing Institute/ College/ University	Nature of contribution	Dates
1	Innovision 2020	Fergusson College (Autonomous)	Conceptualization, organization and coordination.	15 February 2020
2	Innovision 2021	Fergusson College (Autonomous)	Conceptualization, organization and coordination.	12 January 2022
3	Innovision	Fergusson College (Autonomous)	Conceptualization, organization and coordination.	8 December 2024

Consultancy Services

Provided consultancy on 'Soil and Water Analysis' to Mr. Pranav Tembe from Pune in 2018. Money generated Rs. 21,000/-

Consultancy given to IMT Pvt. Tech. Ltd., Pune on DNA barcoding of invasive plant species.