

## Sandip V. Pawar, PhD

University Institute of Pharmaceutical Sciences,  
Panjab University, Sector 14, Chandigarh-160014

**Position:** UGC-Assistant Professor

**Joining date:** 29<sup>th</sup> June 2018

### Research Interest: Pharmaceutical Biotechnology

*Pharmaceutical Biotechnology, In-vitro cell culture screening and toxicological screening, Polymeric and novel drug delivery system, Biocatalytic synthesis of pharmaceutical intermediates, Bioprocess Technology*

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**Google-Scholar page:** <https://scholar.google.co.in/citations?user=CiGeqfcAAAAJ&hl=en>

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### Academic Qualification:

Degree	Subject	Percentage/Grade	Year	University/Institute
Ph.D.	Bioprocess Technology	Awarded	2014	Institute of Chemical Technology (ICT), Mumbai
M. Tech. (Pharm)	Pharmaceutical Technology	9.16 CGPA	2008	NIPER, SAS Nagar, Mohali, Punjab
B. Pharm.	Pharmaceutical Sciences	Firs class	2006	University of Pune, Pune

### Academic/Professional positions held (excluding current position and PhD)

02/2017 – 6/2018: Senior Scientist, University of British Columbia, Vancouver, Canada

07/2015 – 07/2017: MITACS Postdoctoral Fellow, University of British Columbia, (BC), Canada

08/2014 – 07/2015: Postdoctoral Fellow, University of British Columbia, Vancouver (BC), Canada

01/2009 – 04/2010: Research Scientist, BioPlusLifeSciences, Hosur, India

08/2008 – 12/2008: Research Associate, Rubicon Research Pvt. Ltd. Mumbai, India

### Scholarships/Fellowships:

2016-2017 : MITACS Postdoctoral fellowship, University of British Columbia, Vancouver (BC), Canada

2014-2016 :SRF- UGC SAP Meritorious Fellowship, UGC, India

2010-2012: JRF- UGC SAP Meritorious Fellowship, UGC, India

2006-2008: M. Tech Research Fellowship, DBT, India

### Awards/Recognitions:

2017: UBC-PDF Travel Award (\$1000), University of British Columbia, Vancouver, Canada

2015: MITAC postdoctoral research award, University of British Columbia, Vancouver, Canada

## Publications(\*Corresponding author; h-index-11, i10-index-13)

1. Y Mukheja, J Kaur, K Pathania, SP Sah, DB Salunke, AT Sangamwar Recent advances in pharmaceutical and biotechnological applications of lignin-based materials. *International Journal of Biological Macromolecules*, 2023, 124601
2. S Sharma, A Kaur, S Kumar, K Pathania, K Kumar, A Arora, SK Mehta, N Petrovsky, S P Sah, D B Salunke, S V Pawar. Lignin nanoparticles as a novel carrier for efficacious delivery of toll like receptor 7/8 agonist: Physicochemical and in-vitro evaluation. *Journal of the Indian Chemical Society*, 2023. 101008
3. N Khanna, V Puri, A Kumar, SV Pawar. A bioinformatics system for exploring potential targets and therapies in rheumatoid arthritis. *Healthcare Analytics*, 2023, 3, 100160
4. K Pathania, SP Sah, DB Salunke, M Jain, AK Yadav, VG Yadav, SV Pawar, Green synthesis of lignin-based nanoparticles as a bio-carrier for targeted delivery in cancer therapy. *International Journal of Biological Macromolecules*. 2023, 229, 684-695
5. P Pothal, K Pathania, S Kumar, J Kaur, SP Sah, R Singh, SV Pawar. Lignin-chitosan biocomposite film for antimicrobial activity: Fabrication, characterization and in-vitro evaluation. *Materials Letters*, 2023, 133956
6. A Vashistha, S Kumar, S Kirar, N Sharma, B Das, UC Banerjee, SV Pawar, R Kumar, AK Yadav, Synthesis, Biological Evaluation and in silico Studies of 2-Aminoquinolines and 1-Aminoisoquinolines as Antimicrobial Agents. *Computational Biology and Chemistry*, 2023, 107807.
7. N Singh, S Aery, S Juneja, L Kumari, MS Lone, AA Dar, SV Pawar, SK Mehta, A Dan. Chitosan Hydrogels with Embedded Thermo- and pH-Responsive Microgels as a Potential Carrier for Controlled Release of Drugs. *ACS Applied Bio Materials*. 2022, 5, 7, 3487–3499
8. K Chopra, SV Pawar, M Maurya, T Gupta, J Dhaliwal. 3D Bioprinting of Tissues and Organs: A New Paradigm in Regenerative Medicine and Biomedical Engineering. *Biomedical Translational Research: Technologies for Improving Healthca*. 2022. 215-237. Springer Nature
9. A Kaur, D Ghai, VG Yadav, SV Pawar, JK Sembi. Polyketide synthases (PKSs) of secondary metabolism: in silico identification and characterization in orchids. *Journal of Biomolecular Structure and Dynamics*, 2022. 1-13
10. V Mutreja, A Kumar, S Sareen, K Pathania, H Sandhu, R Kataria, SV Pawar, SK Mehta, J Park. Aggregation-Induced Quenching of Carbon Dots for Detection of Nitric oxide. *Chemistry Select* 7 (21), e202200448
11. J Garg, K Pathania, SP Sah, SV Pawar. Nanostructured lipid carriers: a promising drug carrier for targeting brain tumours. *Future Journal of Pharmaceutical Sciences* 8 (25), 1-31
12. D Kaushik, M Kaur, V Mutreja, K Pathania, DB Salunke, SC Sahoo, V. Saini, SV Pawar, SK Kansal, SK Mehta. Synthesis of quinoline based molecular probes for detection of nitric oxide *Dyes and Pigments*, 110226
13. J Rathee, R Kanwar, L Kumari, SV Pawar, S Sharma, ME Ali, DB Salunke, SK Mehta Development of nanostructured lipid carriers as a promising tool for methotrexate delivery: physicochemical and in vitro evaluation. *Journal of Biomolecular Structure and Dynamics*, doi.org/10.1080/07391102.2022.20
14. J Rathee, R Kanwar, L Kumari, SV Pawar, DB Salunke, SK Mehta. Preparation of  $\alpha$ -Tocopherol based nanoemulsion for efficacious delivery of Methotrexate. *Journal of Dispersion Science and Technology*, DOI: 10.1080/01932691.2021.2022491
15. J Garg, V Kakkar, **SV Pawar\*** Resealed erythrocytes: Towards a novel approach for anticancer therapy. *Journal of the Indian Chemical Society* 2021 98 (12):100257

16. L Banoth, KN Thete, **SV, Pawar\***, UC Banerjee, Screening, isolation and selection of a potent lipase producing microorganism and its use in the kinetic resolution of drug intermediates, *[Biocatalysis and Biotransformation](#)*, 2021 98 (10):100143
17. J Rathi, R. Kanwar, L. Kumari, **SV Pawar**, DB Salunke, SK Mehta, Nanoemulsion as a valuable platform for the efficacious delivery of Methotrexate. *[Colloids and Surfaces A: Physicochemical and Engineering Aspects](#)*, Under Review.
18. N Khanna, **SV Pawar\***, A Kumar, An Review on Repurposed Drugs and Vaccine Trials for Combating SARS CoV-2. *[Current Drug Research Reviews](#)*,
19. N Khanna, A Kumar, **SV Pawar\***, A Review on Rheumatoid Arthritis Interventions and Current Developments, *[Current Drug Targets](#)*, 2021, 22 (4): 452-472
20. P Singla, M Kaur, A Kumari, L Kumari, **SV Pawar**, R Singh, DB Salunke, Facially Amphiphilic Cholic Acid–Lysine Conjugates as Promising Antimicrobials, *[ACS Omega](#)*, 2020 5(8):3952–3963,
21. Y Nanaji, S Kirar, **SV Pawar\***, AK Yadav\*.A mild and metal-free synthesis of 2- and 1-alkyl/aryl/dialkyl-aminoquinolines and isoquinolines,*[RSC Advances](#)*, 2020 10 (13):7628-4
22. **SV Pawar**, SJ Hallam, VG Yadav. Metagenomic discovery of a novel transaminase for valorization of monoaromatic compounds, *[RSC Advances](#)*, 2019 8 (40):22490-22497,
23. JCH Ho, **SV Pawar**, SJ Hallam, VG Yadav. An improved whole-cell biosensor for the discovery of lignin-transforming enzymes in functional metagenomic screens, *[ACS synthetic biology](#)*, 7(2):392-8, 2018
24. M Kabiri, SH Kamal, **SV Pawar**, et al. A stimulus-responsive, in situ-forming, nanoparticle-laden hydrogel for ocular drug delivery, *[Drug Delivery and Translational Research](#)*, 8 (3):484-495, 2018
25. J Varela, F Lammoglia, **SV Pawar**, VG, Yadav, Cheminformatic analysis of anti-malarial chemical space illuminates therapeutic mechanisms and offers strategies for therapy development. *[Journal of Chemical Information and Modelling](#)*, 2017, 57 (9), 2119–2131.
26. **SV. Pawar**, JCH. Ho, GD. Yadav, VG. Yadav. The impending renaissance in discovery & development of natural products. *[Current Topics in Medicinal Chemistry](#)*. (2017) 17 (2), 251-267.
27. **SV Pawar**, GD. Yadav. Kinetics and mechanism of regioselectivemonoacetylation of 3-aryloxy-1, 2-propandiols using immobilized Candida 3ntarctica lipase. *[Journal of Industrial and Engineering Chemistry](#)*.(2015)31:335–342
28. **Sandip V. Pawar** and Ganapati D. Yadav. PVA/chitosan-glutaraldehyde cross-linked nitrile hydratase as reusable biocatalyst for nitrile conversion. *[Journal of molecular catalysis B: Enzymatic](#)*. (2014) 101:115-121
29. **SV Pawar**, GD Yadav Enantio-selective enzymatic hydrolysis of rac-mandelonitrile to R-mandelamide by nitrile hydratase immobilized on polyvinyl alcohol-chitosan-glutaraldehyde support. *[Industrial & Engineering Chemistry Research](#)* (2014) 53 (19), 7986–7991
30. GD Yadav, **SV Pawar**. Novelty of immobilized enzymatic synthesis of 3-ethyl-1, 3-oxazolidin-2-one using 2-aminoalcohol and dimethyl carbonate: Mechanism and kinetic modeling of consecutive reactions
31. *[Journal of Molecular Catalysis B: Enzymatic](#)* (2014) 109, 62-69
32. **Sandip V. Pawar** and Ganapati D. Yadav. Insight into microwave irradiation and enzyme catalysis in enantioselective resolution of dl-(±)-3-phenyllactic acid. *[Applied Microbiology and Biotechnology](#)*. (2012) 96:69-79.
33. **Sandip V. Pawar**, Vachan Singh Meena, Shubhangi Kaushik, AshwiniKamble, Sandeep Kumar, Yusuf Chisti and U. C. Banerjee. Stereo-selective conversion of mandelonitrile to ®-(–)-mandelic acid using immobilized cells of recombinant Escherichia coli. *[3 Biotech](#)* (2012) 2:319–326.
34. **Sandip V. Pawar** and Ganapati D. Yadav. Synergism between microwave irradiation and enzyme catalysis in transesterification of ethyl-3-phenylpropanoate with n-butanol. *[Bioresource Technology](#)*. (2012) 109:1–6.

35. Sandeep Kumar, Utpal Mohan, Ashwini L. Kamble, Sandip V. Pawar and Uttam C. Banerjee. Cross-linked enzyme aggregates of recombinant *Pseudomonas putida* nitrilase for enantioselective nitrile hydrolysis. *Bioresource Technology*. (2010) 101:6856–6858.

### Patents

1. Process for production of 2- oxazolidinones using efficient and reusable heterogeneous catalyst or biocatalyst. WO Patent WO2013171755 A2
2. Metabolic engineering of E.Coli for the Biosynthesis of cannabinoids. InMed Pharmaceuticals Inc., US provisional patent WO2013171755 A2

### Book:

1. Probiotic Research in Therapeutics. Volume-2. Editors: Prof. InduPal Kaur, **Dr. Sandip V. Pawar**, Prof. Praveen Rishi, February 2021. Published by Springer Nature
2. Animal Models for Neurological Disorders. Editor: Anil Kumar, Kanwaljit Chopra, Anurag Kuhad, Sangeeta Pilkhwal Sah, **Sandip V Pawar** 2021 Published by Bentham Science.

### Book Chapter:

1. Priyanka Devi, YerramsettiNanaji, Nikita Khanna, Ashok Kumar Yadav, **Sandip V. Pawar\***. Animal models for probiotic interventions under gut inflammatory conditions. Accepted for publication in Book Probiotic Research in Therapeutics- Vol.2, 2020, Springer Nature
2. Nikita Khanna, Priyanka Devi, Anil Kumar and **Sandip V. Pawar\***. Probiotics for atopic dermatitis. Accepted for publication in Book series Probiotic Research in Therapeutics- Vol.2, 2020, Springer Nature
3. D Ghai, J Verma, A Kaur, K Thakur, **SV Pawar**, JK Sembi. Bioprospection of Orchids and Appraisal of Their Therapeutic Indications. Bioprospecting of Plant Biodiversity for Industrial Molecules, 401-424
4. K Pathania, S Sharma, **SV Pawar**, S Pilkhwal Sah. Brain Tumor: An Insight into In-vitro and In-vivo Experimental Models Animal Models for Neurological Disorders 1, 227
5. S Sharma, K Pathania, S Pilkhwal Sah, SV Pawar. In vitro Models of Age-Related Neurodegenerative Diseases Animal Models for Neurological Disorders 1, 247
6. K Chopra, SV Pawar, M Maurya, T Gupta, J Dhaliwal 3D Bioprinting of Tissues and Organs: A New Paradigm in Regenerative Medicine and Biomedical Engineering. Biomedical Translational Research: Technologies for Improving Healthcare. 2022

### Funded research projects

S. N	Project Title	Name of the Funding Agency (UGC,DBT,etc.,)	From (mm/yy)	To (mm/yy)	Budget (Rs. in lakh)
1	UGC-BSR Startup Research Grant	University Grants Commission (UGC), New Delhi	01.04.2019	31.03.2022	8 Lakh
2	In-vitro screening and formulation development of anticancer compounds	Indo-Aus FCRA Industrial project sponsored by Vaxine Pty Ltd, Bedford Park South, Australia	01.12.2020	30.11.2022	6 Lakh

3	Synthesis and biological evaluation of 2-and 1-amino-quinolines and isoquinolines as active antimicrobials.	Department of Science & Technology & Renewable Energy, Chandigarh Administration. Chandigarh (UT)	01.03.2021	29.02.2022	1.25 Lakh
4	Service consultancy on “Formulation development, characterization and evaluation of novel molecule	Cedrus Bio-Products Ltd.,351, Sector 21, Panchkula, 134112, Haryana, India	01.06.2021	31.08.2021	2.83 Lakh
5	Development of lignin based targeted polymeric nanoparticle platform for efficient delivery of anticancer drug	Department of Science & Technology & Renewable Energy, Chandigarh Administration. Chandigarh (UT)	28.10.2021	27.10.2022	1.25 Lakh
6	Development of new lipidated small molecules as potential vaccine adjuvant	Department of Science & Technology & Renewable Energy, Chandigarh Administration. Chandigarh (UT)	29.09.2022	28.09.2023	2 Lakh
7	Bio-valorization of Lignin (Project No. BT/PR39540/ICD/88/4/2021)	Department of Biotechnology (DBT)-IC-IMPACTS Indo-Canada International Collaborative Project	03/22	31.08.2024	55.21 lakh
8	Development of new chemo-immunotherapy approach for colorectal cancer	SER-CRG	02/23	02/26	59 lakh

**A. Papers presented in National/International conferences (Please include up to 5 most important ones**

Name of the Conference	Dates/Place	Nature of Participation	Title of the paper etc.
Chandigarh Science Congress (CHASCON 2022)	September 15-17, 2022 Panjab University, Chandigarh	Poster	Lignin nanoparticles as a novel carrier for efficacious delivery of toll like receptor 7/8 agonist: physicochemical and invitro evaluation

3 <sup>rd</sup> National Biomedical Research Competition 2021	December 6-10, 2021 New Delhi	Poster	Synthesis and biological evaluation of 2-and 1-amino-quinolines and isoquinolines for antimicrobial activity.
Chandigarh Science Congress (CHASCON 2020)	December 17 -19, 2020 Panjab University, Chandigarh	Poster	Lignin nanoparticles; A novel tool for drug delivery
ICONICA 2020: Next-Gen Paradigm in healthcare	Feb 12-14, 2020 Panjab University, Chandigarh	Poster	Discovering new targets in rheumatoid arthritis through bioinformatics approach
4 <sup>th</sup> International Brain Research Organization/Asia Pacific Region (IBRO/APRC)	Nov 10-17, 2019 UIPS, Panjab University, Chandigarh	Poster	Misdiagnosis of Schizophrenia

### Lectures/Talks delivered

- i. Title of talk: Recent trends in pharmaceutical biotechnology. Invited speaker for Online Quality Improvement Program- Poona College of Pharmacy. Date: 10th December 2020.
- ii. Title of talk: Applications of cell culture studies in drug discovery and development Resource person at National Workshop UGC Networking Resource Centre. UIPS, Panjab University, Chandigarh. Date: Jan 17 – 22, 2022
- iii. Title of the talk: Cell culture applications in drug development. Resource person at National Workshop UGC Networking Resource Centre. UIPS, Panjab University, Chandigarh. Date: Jan 17 – 22, 2022
- iv. Title of talk: Recent Trends in Pharmaceutical Biotechnology and Career Abroad. Invited lecture at MGV's College of Pharmacy, Nashik Maharashtra. Date: August 12<sup>th</sup>, 2022
- v. Title of talk: Cell culture studies in Drug Development: Applications and challenges. Invited lecture at Scientific lecture under Central Animal House Scientific Lecture Series. Date: August 29, 2022
- vi. Title of talk: Applications of cell culture based studies in drug development. M M College of Pharmacy, Mullana,, Ambala , 9 and 10 Feb 2023
- Vii Title of Talks: Steps in writing successful research proposal. 3-Day National FDP at MS Gosavi College of Pharmacy, Nasik, Maharashtra. 23<sup>rd</sup> to 25 March 2023

### Workshop/Conferences/FDP/Symposium/Training Program organized

- i. Organizing committee member, National Symposium on Innovation and Entrepreneurship UIPS, Panjab University, Chandigarh Date: 9th April 2019
- ii. Organizing committee member, ICONICA- 2020- A global summit on next-gen paradigms in health c Panjab University, Chandigarh Date: 12-14 February 2020
- iii. Organizing Secretary, Shastri-Indo Canada Golden Jubilee lecture series - Ushering in an Era of New Technologies in Health. UIPS, Panjab University, Chandigarh. Date: 23rd February 2021
- iv. Convener of Exhibition, National Science Week Festival- Vigyan Sarvatra Pujiyate, Panjab Univer Chandigarh. Date: February 22-28, 2022

**Teaching experience:** Since June 2018 - to present (~16 hours per week)

**PhD/Masters/Undergraduate Supervision**

Degree	Completed	Ongoing
PhD	0	3
M.Pharm / M.Tech.	10	5
Undergraduate (Project)	4	3