Dr. PRAKASH NARSING CHAVAN

Assistant Professor (M. Sc. PhD NET SET GATE)

Department of Chemistry, Karmaveer Bhaurao Patil College Urun-Islampur,
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Research Interest:

Design and development of novel synthetic methodologies for the preparation of pharmaceutically useful scaffolds, total synthesis of natural bioactive compounds and analogues, heterocyclic chemistry, asymmetric synthesis/catalysis.

Education:

Ph.D.	Chemistry	**2014**	CSIR-National Chemical Laboratory, Pune, INDIA
M. Sc.	Chemistry	**2006**	Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, INDIA

Professional Experiences:

Assistant Professor **Feb 2023-Continue**
Karmaveer Bhaurao Patil College, Urun-Islampur, Sangli-415409.

Working as Assistant Professor in Chemistry Department, K. B. P. College, Urun-Islampur. I teach Theory and Practical to UG and PG degree courses. Also mentor to the M. Sc. students for their research projects.

Postdoctoral Fellow **Jul 2022 to Jan 2023**
Eugene Applebaum College of Pharmacy, Wayne State University, Detroit, MI, USA.

As a Postdoctoral fellow worked on the multiple synthetic projects, preparation of novel AMD hydride molecules for cancer treatment, new vancomycin analogues and KRA scaffolds for biological studies.

Research Scientist **Aug 2021 to Jun 2022**
Piramal Discovery Solutions, Ahmedabad, INDAI.

As Team lead, handling the key responsibilities related to project development such as Design synthetic route and synthesis of novel chemical entities; Managing the workload and productivity of a team of synthetic chemists that involves synthesis of quality compounds in milligram scale for initial testing to multi-gram scale for development candidates; Structure

analysis of new compounds; Regular update of projects development to management team and clients through presentation and documentation.

Research Associate **Aug 2019-Aug 2021**
Indian Institute of Technology (IIT) Kanpur, INDIA

Worked as a Research Associate on design and development of novel methodologies and its application in total synthesis of pharmaceutically valuable compounds and their analogues. Additionally, developing methods Ru-catalysed CH activation based total synthesis of Macrolactins and Kulkenone. Furthermore, monitoring to the doctoral fellows and master's students working for thesis work; guiding and helping students to do perform better by conducting research and experiments in efficient manner.

I am also actively engaged in the manuscript and research grant proposal writing as well as the evaluation of scientific reports and student's thesis.

Assistant Professor **Mar 2017-June 2018**
Sinhgad College of Engineering, Vadgaon, Pune, INDIA

As Assistant Professor taught applied chemistry to the engineering students.

Postdoctoral Fellow **Jan 2016-Dec 2016**
Institute of Basic Science, CMCM, UNIST, South Korea

As a Postdoctoral Researcher worked on collaborative project of synthesis of **Bis-Benzimidazolium sulfate salt** for the protein imaging in the biological mechanism study.
I also worked on Designing and Synthesis of **New Photoswitchable NHC carbene**.

Junior Research Scientist **Aug 2014-Sept 2015**
Piramal Enterprises Limited, Goregaon, Mumbai, INDIA

Worked as a Junior Research Scientist with a goal-oriented team of the process R & D for Active Pharmaceutical Ingredients (API's).
I performed the feasibility, optimization, validation, and stability study for API's e. g. cinacalcet, dabigatran etexilate, dronedarone, armodafinil and synthesis of process related impurities.

List of Research Publications:

1) "Design and Synthesis of Novel Hydrazinyl Thiazole derivatives and their Anti-Cancer, Anti-Oxidant, Anti-Bacterial, and Molecular Docking Evaluation' Akshay Gurav, Rutikesh Gurav, **Prakash N. Chavan**, Nisha Nerlekar, Padma Dandge, Sandeep Sankpal, Shankar Hangirgekar" Journal of Molecular Structure, 2025, 1323, 140541.
2) "One-pot synthesis of novel hydrazinyl thiazoles using rust and Ficus benghalensis leaf derived Fe2O3/ZrO2 nano-catalyst: Their molecular docking, ADME,

antidiabetic, and antioxidant study"Journal of Molecular Structure, 2025, 1338, 142223.

3) "Cascade approach to synthesize BIMs and analogues in different nucleophilic conditions" Kailas Arjun Chavan, **Prakash N. Chavan**, Akhilesh Kumar, Rohan D. Erande* Tetrahedron Letters 2024, 148, 155248.
4) "Chemical Synthesis and Characterization Study of Nanocrystalline and Coral Rock-Like Kasterite Cu2ZnSnS4 (CZTS) Thin Films" Sandesh B. Jirage, Kishor V. Gaikwad, **Prakash N. Chavan**, Sadashiv A. Kamble, Vijaykumar Bhuse*, Iranian Journal of Materials Science and Engineering, 2024, 21, 1.
5) "Asymmetric Ru/Cinchonine Cooperative Catalysis: An Efficient Synthesis of Optically Active Phthalides from Benzoic acids and Acrylates" Dattatraya H. Dethe*, Nagabhushana C. Beeralingappa, Salma A. Siddiqui, **Prakash N. Chavan** J. Org. Chem. 2022, 87, 4617–4630
6) "Formal Synthesis of Deoxy-Macrolactin via Ru-Catalyzed Sp2-Sp2 Carbon Cross coupling" Dethe, Dattatraya; Nirpal, Appasaheb; **Chavan, Prakash** manuscript to be communicate.
7) "Azide and aziridine free approach towards Tamiflu employing stereospecific amidoalkylation protocol and ring closing metathesis (RCM)." Subhash P. Chavan*, **Prakash N. Chavan**, manuscript to be communicated.
8) "Formal Synthesis of Brivaracetam: A Key to Construct the Pyrrolidone Scaffold Using Pd-Catalyzed Oxidative Cyclization and Ring-Closing Metathesis Reaction" Subhash P. Chavan, Sanket Kawale, **Prakash N. Chavan** Tetrahedron Letters 2019, 60, 151249.
9) "Asymmetric total synthesis of L-allo-1-deoxynojirimycin" Subhash P. Chavan, Nilesh B. Dumare, Kailash Pawar, **Prakash N. Chavan**, Lalit B. Khairnar ARKIVOC 2016, 2, 137.
10) "Enantioselective syntheses of (R)-pipecolic acid, (2R,3R)-3-hydroxypipecolic acid β-(+)-conhydrine and (−)-swainsonine using an aziridine derived common chiral synthon", Subhash P. Chavan, Lalit B. Khairnar, Kailash Pawar, **Prakash Chavan**, Sanket Kawale RSC Advances 2015, 5, 50580.
11) "A concise synthetic approach towards Tamiflu (Oseltamivir phosphate): Cis-aziridine as the key precursor" Subhash P. Chavan*, **Prakash N. Chavan**, Lalit B. Khairnar, RSC Advances, 2014, 4, 11417-11419.
12) "Stereospecifi synthetic approach towards Tamiflu using Ramberg-Backlund reaction from cysteine hydrochloride" Subhash P. Chavan*, **Prakash N. Chavan**, Rajesh G. Gonnade, RSC Advances, 2014, 4, 62281.
13) "A Facile and Convenient Synthesis of (±)-Biotin from Cyclohexanone and Diethyl Malonate VIA MgCl2-mediated C-C Coupling and Mitsunobu Reaction" Subhash P. Chavan*, **Prakash N. Chavan**, Pradeep B. Lasonkar, Lalit B. Khairnar, Appasaheb Kadam Synlett, 2014, 25, 2879-2882.
14) "Efficient and Mild Preparation of Allylic Amines form Aziridines-2-alcohols Using PPh3/I2/Imidazole" Subhash P. Chavan*, Lalit B. Khairnar, **Prakash N. Chavan** Tetrahedron Letters 2014, 55, 5905.
15) "A Short Enantioselective Total Synthesis of (R) and (S) Pipecolic acid" Subhash Chavan*, Lalit B. Khairnar, **Prakash N. Chavan** Tetrahedron: Asymmetry 2014, 25, 1246-1251.

16) "Chiron Approach to Formal Synthesis of Both Antipode of 3-hydroxy Pipecolic acid" Subhash P. Chavan, Lalit B. Khairnar, **Prakash N. Chavan**, Dinesh B. Kalbhor Tetrahedron Letters 2014, 55, 6423.
17) "A novel and enantioselective synthesis of D-(+)-Biotin via Sharpless asymmetric dihydroxylation strategy" Subhash P. Chavan*, Pradeep B. Lasonkar, **Prakash N. Chavan**, Tetrahedron: Asymmetry 2013, 24, 1473-1479.

List of Patent/s:

1. "A process for the preparation of intermediate for the preparation of oseltamivir phosphate" Subhash. P. Chavan*, **Prakash N. Chavan**, WO 2015049700 A1, EP3052473A1, US20160222029.
2. "Chemical Synthesis of Manganese Ferrite/Reduced Graphene Oxide Composite Thin Film Electrodes for Energy Storage Application" Vinayak S. Jamadade, Rushiraj P. Bhosale, Sambhaji S. Kumbhar, Sagar P. Pradhi, **Prakash N. Chavan**, Chandrakant D. Lokhande Indian Patent 20242060274A.

List of Book/s:

1. "Synthetic Studies towards Bioactive Molecules" **Lambert Academic Publishing**, UK, ISBN 978-620-7-46002-1.

Conference Proceeding:

1. "Make In India Policy: A Key for National Economic Growth" K. B. P. College, Urun-Islampur ISBN 978-81-954215-7-2.
2. "Chemical Synthesis and Characterization Study of Nanocrystalline and Coral Rock-Like Kasterite Cu2ZnSnS4 (CZTS) Thin film" The New College Kolhapur ISBN 978-93-6076-047-2.

Research Grant/s:

- Received Research Grant of **Rs. 1,30,000/-** from Shivaji University, Kolhapur under "**Diamond Jubilee Research Initiation Scheme 2024-25"**.
- Received Research Grant of **Rs. 20,000/-** from Mahatma Phule Shikshan Santha's Karmaveer Bhaurao Patil College Urun-Islampur under **Karmaveer Research Initiation Scheme 2024-25**.

Academic Achievements/Awards/Scholarship:

Doctor of Philosophy (Ph.D., 2014): Awarded by University of Pune, INDIA in the field of chemical science.
Senior Research Fellowship (SRF, 2010-2012): Awarded by CSIR, New Delhi, INDIA in the field of chemical science.
Junior Research Fellowship (JRF, 2008-2009): Awarded by CSIR, New Delhi, INDIA in the field of chemical science.

National Eligibility Test (NET) examination **(Dec 2006 and Jun 2007** in Chemical Science conducted by CSIR, New Delhi, INDIA.
State Eligibility Test (**SET)** examination **Feb 2007** in chemical science conducted by Pune University, INDIA.
Graduate Aptitude Test in Engineering (GATE) examination **March 2007** and **2008** in chemical science conducted by IIT, INDIA.
University 2nd rank in **M. Sc**. **(Chemistry)** examination **2006** from Dr. B. A. M. University Aurangabad, INDIA.

Synthetic, Analytical and Research skills:

- Excellent synthesis and characterization skills.
- Optimization of synthetic reactions.
- Experience in multistep synthesis of complex molecules
- Sound knowledge of NMR, HPLC, GC, Mass, IR to Solve complex structure and
- Establishing relative/absolute stereochemistry.
- Handled instruments like NMR, HPLC, Mass, IR etc.
- New Proposal, Patent and Publication writing.
- Monitor Ph. D. and Master students for their thesis work.