



Dr. MANOJ R. SONAWANE

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EDUCATIONAL DETAILS

- 2015 : Post-Doctoral fellow in Organic Chemistry from IOCB AV CR, Charles University in Prague, Czech Republic, EU on 20 Jan 2015.
- 2014 : Ph.D. in Organic Chemistry from IOCB AV CR, Charles University in Prague, Czech Republic, EU on April 2014.
- 2007 : M.Sc. in Organic Chemistry from SSVPS Science College, Dhule, KBC North Maharashtra University in June 2007.
- 2005 : B.Sc. in Chemistry from SSVPS Science College, Dhule, KBC North Maharashtra University in June 2005.
- 2005 : Advance Diploma in Biotechnology from SSVPS Science College, Dhule, KBC North Maharashtra University in June 2005.

PROFESSIONAL EXPERIENCE

- ❖ Assistant Professor at Shri Vile Parle Kelavani Mandal's Institute of Technology, Dhule, from 11-06-2018 to till date.
- ❖ Assistant Professor at SRES Sanjivani College of Engineering, Kopargaon, Ahmednagar from 23-03-2015 to 31-05-2018.
- ❖ Research Project Assistant at National Chemical Laboratory, CSIR Pune from 09-07-2007 to 18-09-2008.
- ❖ Industrial/Research Work, Location.
PhD Studies (06-10-2009 to 30-04-2014)
- ☑ As a research student I have reported synthesis of highly efficient and geometrically defined *N-tert-butyl-N-(silyloxy)enamines* from aldehydes and used them as β -C nucleophiles. A series of helquats (helical extended diquats) with various structural patterns based on pyridine-type nitrogen quaternization and subsequent [2+2+2] cycloisomerization also synthesized.
- ❖ Research Projects:
 - I. "Synthesis of *N-tert-butyl-N-(silyloxy)enamines* from aldehydes and used them as β -C nucleophiles."

Team: - One



Description: Reported the synthesis of highly efficient and geometrically defined *N*-*tert*-butyl-*N*-(silyloxy) enamines from aldehydes and used them as β -C nucleophiles. I discovered the first general, efficient and diastereoselective aldol-type reaction of *N*-(silyloxy) enamines as nucleophilic aldehyde equivalents to synthesize geometrically defined β -methoxy nitrones. Under the mild acidic conditions, conversion of β -methoxy nitrones to β -methoxy aldehydes also attained. Also synthesized *N*-methyl-*N*-(silyloxy) enamines from ketones *via* alkylation of one-pot prepared intermediate ketoxime-*O*-trimethylsilylethers using *self prepared* strong alkylating agent MeONf. Furthermore, formation of *E/Z*-isomers mixture ratio in enamines derived from aliphatic ketones was studied.

- II. "Synthesis of various helical extended diquats scaffolds."

Team: - One

Description: - A series of helquats (helical extended diquats) with various structural patterns based on pyridine-type nitrogen quaternization and subsequent [2+2+2] cycloisomerization were prepared. Selected helquats and their various salts in *racemic* and *non-racemic* form were tested as organocatalyst in '*aldol type addition*' as well as in '*oxidative cycloetherification*' reaction. Also synthesize the library of novel helquat derivatives (dyes) from structurally different helquat precursors having active methyl groups using various aryl aldehydes and thiazole salt. These cyanine dye type compounds are used for biological screening with cancer cell lines (CEM and HeLa cells) and other potential applications.

- III. "Oxidative nucleophilic substitution of hydrogen (ONSH) ON nitrogen substitutes SF₅-benzenes."

Team: - One

Description: - Developed oxidative nucleophilic substitution of hydrogen (ONSH) and S_NAr for substituted nitro aryl compounds with primary arylamines and dialkylamines affording new nitrogen substitutes SF₅-benzenes.

❖ Patent

Sr. No.	Details of Publication	Application Number	Inventors
1	Helquats with Heteroaromatic Substituents, Preparation thereof, and use thereof as G-quadruplex Stabilizers	WO2015/180701 A1	Teplý Filip (CZ), Hajek Miroslav (CZ) Manoj R. Sonawane (IND) <i>et al.</i> ,



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❖ Grants

Sr. No.	Name of the Faculty	Title of the proposal	Sanctioning Authority	Year	Granted Amount
1	Dr. Manoj R. Sonawane	Geochemistry of Water Resources in District Dhule, MH, India	DBATU, Lonere (Shortlisted for presentation)	2019-2020	3,90,000/- (Shortlisted for presentation)

❖ Research Papers Presented / Published:

Sr. No.	Details of Publication	National/ International	Publisher, Vol, Indexing, impact factor	Author (s) / Editor (s)
1	"Oxidative nucleophilic aromatic amination of nitrobenzenes"	International	<i>Chem. Commun.</i> 2016, 52, 7237-7240. (I.F. 6.834).	V. V. Khutoryanskiy, M. R. Sonawane , B. Klepetářová, P. Beier*
2	'Oxidative Nucleophilic Aromatic Amination of Nitrobenzenes'	International	<i>ChemInform.</i> 2016, 40, 47, 038. (IF. 3.949).	V. V. Khutoryanskiy, M. R. Sonawane , P. Beier <i>et. al.</i> ,
3	'Synthesis of Helquats Based on Phenanthridinium Units: Four-Step Procedure to Novel Extended Helical Dications'.	International	<i>Synthesis.</i> 2015, 47, 3479-3488. (IF. 2.689).	Manoj R. Sonawane , Jan Vávra, David Šaman, Ivana Císařová, Filip Teplý
4	'N-Trimethylsilyloxyenamines as new aldehyde enolate synthons: general efficient and diastereoselective aldol reaction with ketals and acetals'.	International	<i>Chem. Comm.</i> 2010, 46, 2652. (IF. 5.787).	Manoj R. Sonawane , Ivana Císařová and Ilya M. Lyapkalo
5	Highlighted: 'Diastereoselective Aldol Reaction of N-Trimethylsilyloxyenamines'.	International	<i>SYNFACTS</i> 2010, 7, 799.	M. R. Sonawane , I. Císařová, I. M. Lyapkalo.



❖ **Workshop / Conferences / Seminars Attended**

Sr. No.	Title of Paper	Name of Conference in which published	Date of Publication
1	<i>Promoting Entrepreneurial Traits through the Development of Skills</i> , S. T. Patel and M. R. Sonawane .	National Conference on Exploring New Dimensions in Teaching–Learning for Quality Education at K. K. Wagh Institute of Engineering and Research (KKWIEER) Nashik, MH.	June 2019 , Page NO. 324-332, ISBN: 978-93-88441-93-3.
2	<i>'Orange Peel as a Low Cost Adsorbent for Congo Red Dye'</i> S. S. Chine, S. R. Korke, M. R. Sonawane	International Conference. On Recent Trends in Chemical and Environment, Sangamner, Ahmednagar, MH.	2016 , ISBN: 978-81-930345-5-2.
3	<i>'N-heterocyclic Compounds towards Organocatalysis'</i> C.S. Patil, S. S. Chine, M. R. Sonawane	<i>J. Med. Chem. Drug Disco.</i> Conference at DBAMU Aurangabad, MH	2016 , Issue 2, Vol. 4, 598-604, ISSN: 2347-9027
4	<i>'Synthesis of N-silyloxy enamine from ketones via ketoxime-O-silyl ethers'</i> Sonawane M. R. , Joshi V., Lyapkalo I.	<i>Res. J. Chem. Sci.</i> Conference at K. J. Somayya Science College, Kopargaon, Ahmednagar, MH	2014 , 1 (NCCICR-2014), 76.
5	<p>❖ <u>Conferences, Workshop and Attended:</u></p> <ol style="list-style-type: none"> 1) One-day Workshop on Effective Research Paper Writing organized by SVKM's IOT on 28 Dec. 2019. 2) One-day Scilab Workshop organized by SVKM's IOT & ICT-IIT Bombay in May 2019. 3) One-day State Level Workshop on Laboratory Safety and Hazards LISH-2019 organized by KMC NMU in March 2019. 4) One-day National Level Workshop sponsored by DBT, New Delhi and organized by Sanjivani College of Pharmaceutical Education & Research, Kopargaon, MH on 10th March 2017. 5) One-day State level conference sponsored by SPPU, Pune and organized by Dept. of Microbiology, SRES SACS, Kopargaon, Ahmednagar, MH on 3rd December 2016. 6) State level seminar (RDCS-2016) sponsored by UGC, New Delhi and organized by Dept. of Chemistry, RSS's S.S.G.M. College, Kopargaon, Ahmednagar, MH on 27th August 2017. 7) CRC International Symposium on "Asymmetric C-C bond formation and organometallics", Prague, CR, EU, October 2013. 8) Prague Nobel Get-Together, AV ČR, Prague, May 2012. 9) IOCB AV ČR, Conference in Frymburk, CR, EU, May 2010 (Oral Presentation) 		



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6	❖ Faculty Development Program (FDP) Attended:
	1. Participated in AICTE sponsored 7 days FDP-SI Program, during 22 nd - 28 th June 2019 at NIT Hamirpur, Hamirpur, Himachal Pradesh.
	2. Participated in AICTE sponsored 3 days FDP-SI Program, during 27 th - 29 th May 2019 at CSMSS Chh. Shahu College of Engineering, Paithan Road, Aurangabad, MH.
	3. Participated in AICTE sponsored 12 days FDP during 13 th - 25 th Nov. 2017 on “ <i>Present Scenario of Treatment of Waste in India: Challenges, Issues and New Techniques of Treatment</i> ” organized by Department of Civil Engineering., SRES, SCOE, Kopergaon, MH, India.

❖ Guest Lecture Conducted

Sr. No.	Topic	Place	Date From-To
1	General Science and Chemistry.	Kilbil St. Joseph's CBSE High School, H.P.T College Road, Nashik - 422 005, Maharashtra.	13 th April 2019
2	Personality Development and Social Responsibilities of Students.	NSS Winter Camp of SRES SACS B.Sc. students, At Brahmangaon, Tal. Kopergaon, Dist. Ahmednagar.	21 st Dec. 2016

❖ As a Resource Person in Workshop: -

Sr. No.	Workshop / Conference	Place	Date
1	One-day workshop on Opportunities in Chemical Sciences for students.	SRES SACS Kopergaon, Ahmednagar, MH.	20 July 2015

❖ Workshop/ Conference Organized:

Sr. No.	Workshop / Conference	Place	Role
1	Resent Research Trends in Engineering Sciences	SRES SCOE, Kopergaon, Ahmednagar, MH IN 2016.	Organizing



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❖ Special Achievements:

- ✓ *University Rank 3 in M.Sc. Organic Chemistry, Dhule, June 2007.*
- ✓ *University Rank 1 in Advanced Diploma in Biotechnology, Dhule, June 2005.*
- ✓ *Ranked in 5% topper in NPTEL course on "Stereochemistry" IIT Kharagpur MHRD, Kopergaon, Sept. 2017.*
- ✓ *Achieved Silver Elite rank in NPTEL course on "Organometallic Chemistry" IIT Bombay MHRD, Dhule, Feb. 2019.*
- ✓ *Achieved Elite rank in NPTEL course on "Mechanism in Organic Chemistry" IIT Bombay MHRD, Dhule, Sept. 2019.*

❖ Member of Professional Bodies:

Sr. No.	Name of Institution/ Society	Grade of Membership	Date of Election	Whether Still a member
01	India Society for Technical Education (ISTE)	Life Member	Dec. 2019	Yes
02	Editorial Board Member of <i>JournalsPub</i> publication managements group for three journals in the Chemistry Domain.	Member	Oct. 2018	Yes

❖ TECHNOLOGY PROFICIENCY

PLATFORMS	: Chemical Sciences
PROGRAMMING LANGUAGES	: N.A.
OFFICE TOOLS	: Microsoft Office (Word, PowerPoint, Excel)
DESIGN SOFTWARE	: N.A.
ANALYSIS SOFTWARE	: Analytical technique software's for organic compounds like NMR and UV spectral methods, HPLC, GC-MS, FT-IR, ESI-MS

❖ AREA OF INTEREST

AREA OF INTEREST	: Organic synthesis, Asymmetric synthesis, Enamine Chemistry, Modern methods of organic structure analysis, solation-purification and Analytical techniques for organic compounds.
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