

Dr. Ratan Wamanrao Jadhav

Department of Chemistry and Analytical Chemistry,
Rajarshi Shahu Mahavidyalaya, Latur (Autonomous).

✉ ratanjadhav0725@gmail.com

☎ 09637504080

📍 Latur-413512



Within a short period, Dr. Ratan Jadhav has developed a strong, dynamic academic background that enables him to make meaningful contributions to the scientific community. He has published 30 peer-reviewed research articles in reputed international journals, including *Chemical Society Reviews*, *Scientific Reports* (Nature Publishing Group), *Materials Chemistry Frontiers*, *ACS Omega*, *New Journal of Chemistry*, among others. His work has received **>750 citations**, reflecting the impact and recognition of his research. In addition, he has authored one book and one book chapter. According to Google Scholar metrics, he has an **h-index of 12** and an **i10-index of 17**. Currently, he is serving as an Assistant Professor in the Department of Chemistry at Rajarshi Shahu Mahavidyalaya, Latur, an empowered autonomous institute. His research interests center on host-guest chemistry, supramolecular self-assembly for diverse applications. He is also working on the Fuel-Driven Non-Equilibrium Assemblies for Adaptive and Life-Inspired Functional Materials.

←-----→ Professional Details ←-----→

June 2025-Present **Assistant Professor**, at Rajarshi Shahu Mahavidyalaya (Empowered Autonomous Institute), Latur, Maharashtra-413512

April 2024 – April 2025 **Post-Doctoral Research Associate**
Project: Sustained autonomy in out-of-equilibrium supramolecular materials
Advisor: Dr. Dibyendu Das, Associate Professor, Department of Chemical Sciences, IISER Kolkata-741246, India.

Educational Details

Nov 2018 - Nov 2023 **Ph.D. in *Organic Supramolecular Chemistry***

Thesis Title: Functionalization of Aminoglycoside Antibiotics: Synthesis, Self-assemblies, and Sensing Applications.

Advisor: Prof. Sheshanath V. Bhosale, UGC-FRP Professor, School of Chemical Sciences, Goa University, Taleigao Plateau, Goa-403206, India.

NET **Qualified** National Eligibility Test for Junior Research Fellow (**NET-JRF**) conducted by Council of Scientific and Industrial Research (CSIR) in **December 2017** with AIR-51 & in **June 2018** with AIR 60.

SET **Qualified** Maharashtra State Eligibility Test for Assistant Professor (**MH-SET**) conducted by Savitribai Phule Pune University in January 2018.

GATE **Qualified** Graduate Aptitude Test in Engineering (**GATE**) in Chemical Sciences in February 2018.

June 2015 - Apr 2017 **M.Sc. (*Organic Chemistry*)**, Rajarshi Shahu Mahavidyalaya, Latur (Autonomous). **(85.91%)**

June 2012 - Apr 2015 **B.Sc. (*Chemistry*)**, Maharashtra Udayagiri Mahavidyalaya, Udgir. **(83.16%)**

June 2012 **HSC**, Latur Board (**First Class, 70.17%**)

June 2010 **SSC**, Latur Board (**First Class with distinction, 81.45%**)

Research Skills

- Design and execution of organic reactions. Expertise in multi-step synthesis and column chromatography of organic compounds, recrystallization purification techniques, and handling air and moisture-sensitive compounds.
- Experience using hazardous chemicals like n-BuLi, TiCl₄, LAH, NaBH₄, SOCl₂, Pd-C, and NaH, and handling sensitive reagents and palladium catalysts for coupling reactions.
- Familiar with conventional spectroscopic and analytical techniques such as HPLC, UV-Visible, Fluorescence Spectrophotometer, NMR, HRMS, FT-IR, XPS, etc.
- Expertise in operating and morphological analysis of data from Confocal Microscopy, Scanning Electron Microscopy, and TEM.

- Expertise in Origin 8.5 Pro software, including linear and non-linear curve fitting, MS Office, ChemDraw, and Bruker's Topspin.
- Experience in data interpretation and manuscript writing according to journal requirements.
- Capable of performing both independent and collaborative work.

←-----→ **Publications** ←-----→

Important note: Each publication has been marked as follows:

* = Corresponding author; † = First author; £ = Co-author; ‡ = More than one corresponding author

Sr. No.	Title	Authors	Publication detail	Citati- -ons	Impact factor
30‡	Non-Fullerene Acceptors in Organic Solar Cells	P. P. Khobrekar; <u>R. W. Jadhav*</u> ; D. N. Nadimetla; K. Korgaonkar; P. Shreechippa; S. T. Bugde; S. V. Bhosale.	<i>J. Mol. Struct.</i> 2026 , <i>1356</i> , 145091. https://doi.org/10.1016/j.molstruc.2025.145091 .	-	4.7
29†‡	Oligophenylvinylene-Derived Fluorescent Sensor: Cyanide Recognition and its Anti-inflammatory, Antidiabetic, and Antioxidant activities	<u>R. W. Jadhav*</u> ; P. P. Khobrekar; S.Viegas; D.A. Barretto; D. Maliwal; S.N. Dessai; R.S. Pissurlenkar; S. T. Bugde; S.V. Bhosale	<i>J. Mol. Struct.</i> 2025 , <i>1350</i> , 144136. https://doi.org/10.1016/j.molstruc.2025.144136 .	-	4.7
28‡	Emerging Trends in Carbon Dots as Next Generation Biomaterials	P. P. Khobrekar; <u>R. W. Jadhav*</u> ; R. A. Kunkalkar; S. T. Bugde.	<i>ACS Appl. Bio Mater.</i> 2025 , <i>8</i> , 6722–6744. https://doi.org/10.1021/acsabm.5c01128 .	05	4.7
27‡	Citric acid functionalized neomycin carbon dots for cytotoxicity and sensing application	P. P. Khobrekar; G. A. Zalmi; A. P. Raiturker; <u>R. W. Jadhav*</u> ; A. Ganguly; A. D'Costa; S. T. Bugde; S. V. Bhosale.	<i>J. Mol. Struct.</i> 2025 , <i>1323</i> , 140769. https://doi.org/10.1016/j.molstruc.2024.140769 .	13	4.7
26†	Self-Assembled Kanamycin Antibiotic-Inorganic Microflower and their Application as a Photocatalyst for the Removal of Organic Dyes	<u>R. W. Jadhav</u> ; D. D. La; V. G. More; Vo, H. Tung; D. A. Nguyen; D. L. Tran; S. V. Bhosale.	<i>Sci. Rep.</i> 2020 , <i>10</i> , 154. https://doi.org/10.1038/s41598-019-57044-z	25	4.379

25†	The First Connection of Carbonyl-Bridged Triarylamine and Diketopyrrolopyrrole Functionalities to Generate a Three-Dimensional, Non-Fullerene Electron Acceptor	R. W. Jadhav ; R. V. Hangarge; M. D. Aljabri; K. S. More; J. Y. Chen; L. A. Jones; R. A. Evans; J. L. Li; S. V. Bhosale; A. Gupta.	<i>Mater. Chem. Front.</i> 2020 , <i>4</i> , 2176–2183. https://doi.org/10.1039/D0QM00041H	12	6.4
24†	The Controllable Nanostructure and Photocatalytic Behaviour of 5,10,15,20-Tetra-(3,4,5-Trimethoxyphenyl)Porphyrin through Solvophobic Supramolecular Self-Assembly	R. W. Jadhav ; D. D. La; T. N. Truong; S. V. Khalap; D. V. Quang; S. V. Bhosale.	<i>New J. Chem.</i> 2021 , <i>44</i> , 18442–18448. https://doi.org/10.1039/D0NJ03355C	09	3.591
23†	Aminoglycoside Antibiotic Kanamycin Functionalized Tetraphenylethylene Molecular Probe for Highly Selective Detection of Bovine Serum Albumin Protein	R. W. Jadhav ; S. M. Wagalgave; B. V. Kumbhar; S. V. Bhosale; S. V. Bhosale.	<i>Sci. Rep.</i> 2022 , <i>12</i> , 11526. https://doi.org/10.1038/s41598-022-15890-4	07	4.379
22†	Nanoarchitectonics of Neomycin-Derived Fluorescent Carbon Dots for Selective Detection of Fe ³⁺ Ion	R. W. Jadhav ; P. P. Khobrekar; S. T. Bugde; S. V. Bhosale.	<i>Anal. Methods</i> 2022 , <i>14</i> , 3289-3298. https://doi.org/10.1039/D2AY01040B	31	3.532
21†	Supramolecular Nanoarchitectonics with TPPS Porphyrin as a Fluorescent Probe for Detection of Aminoglycoside Antibiotics and Their Photocatalytic Applications for the Degradation of Rhodamine B Dye	R. W. Jadhav ; D. D. La; C. Q. Nguyen; S. V. Bhosale.	<i>J. Photochem. Photobiol. A Chem.</i> 2023 , <i>437</i> , 114436. https://doi.org/10.1016/j.jphotochem.2022.114436	10	4.7
20†	The Supramolecular Self-Assembly of Aminoglycoside Antibiotics and Their Applications	R. W. Jadhav ; M. Al Kobaisi; L. A. Jones; A. Vinu; S. V. Bhosale.	<i>ChemistryOpen</i> 2019 , <i>8</i> , 1154–1166. https://doi.org/10.1002/open.201900193	25	2.3
19†	Mimicking the Natural World with Nanoarchitectonics for	R. W. Jadhav ; D. N. Nadimetla; V. K.	<i>Chem. Rec.</i> 2022 , <i>23</i> , e202200180.	10	7.5

	Self-Assembled Superstructures	Gawade; L. A. Jones; S. V. Bhosale.	https://doi.org/10.1002/tcr.202200180		
18£	Antenna-like Ring Structures via Self-Assembly of Octaphosphonate Tetraphenyl Porphyrin with Nucleobases	M. D. Aljabri; R. W. Jadhav ; M. Al Kobaisi; L. A. Jones; S. V. Bhosale; S. V. Bhosale.	<i>ACS Omega</i> 2019 , <i>4</i> , 11408–11413. https://doi.org/10.1021/acsomega.9b00909	10	4.3
17£	Nature-Inspired Organic Semiconductor via Solvophobic Self-Assembly of Porphyrin Derivative as an Effective Photocatalyst for Degradation of Rhodamine B Dye	D. D. La; R. W. Jadhav ; N. M. Gosavi; E. R. Rene; T. A. Nguyen; W. J. Chung; S. W. Chang; X. H. Nguyen; L. D. Tran; S. V. Bhosale.	<i>J. Water Process Eng.</i> 2021 , <i>40</i> , 101876. https://doi.org/10.1016/j.jwpe.2020.101876	21	6.7
16£	Naphthalenediimide-based nanoarchitectonics for fluorescent chemosensor with highly selective and sensitive detection of cyanide ion	V. K. Gawade; R. W. Jadhav ; V. R. Chari; R. V Hangarge; S. V. Bhosale.	<i>Anal. Methods.</i> 2023 , <i>15</i> , 3727-3734. https://doi.org/10.1039/D3AY00615H	10	3.532
15£	AIE-Active ‘Turn-On’ Sensors for Highly Selective Detection of Bovine Serum Albumin**	V. K. Gawade; R. W. Jadhav ; P.K. Singh; S. V. Bhosale.	<i>ChemistrySelect.</i> 2023 , <i>8</i> , e202302474. https://doi.org/10.1002/slct.202302474	04	1.9
14£	Crafting carbon quantum dots from acetone: dual purpose Fe ³⁺ ion and pH sensing platform	L.F.B. D’Souza; R. W. Jadhav ; S.V. Bhosale; S. T. Bugde.	<i>Emergent mater.</i> 2024 , <i>8</i> , 2635–2646 https://doi.org/10.1007/s42247-024-00792-0	03	4.1
13£	Supramolecular nanoarchitectonics of oligo(p-phenylenevinylene) for nitroaromatic detection	V.K. Gawade; R. W. Jadhav ; P.K. Singh; A.L. Puyad; S.V. Bhosale.	<i>J. Mol. Struct.</i> 2025 , <i>1325</i> , 141042. https://doi.org/10.1016/j.molstruc.2024.141042 .	02	4.7
12£	Supramolecular Nanomaterials with Photocatalytic Activity Obtained via Self-Assembly of a Fluorinated Porphyrin Derivative	M. D. Aljabri; D. D. La; R. W. Jadhav ; L. A. Jones; D. D. Nguyen; S. W. Chang; L. D. Tran; S. V. Bhosale.	<i>Fuel</i> 2019 , <i>254</i> , 115639. https://doi.org/10.1016/j.fuel.2019.115639	37	7.5

11£	Aggregation-Induced Emission Characteristics and Solvent Triggered Hierarchical Self-Assembled Chiral Superstructures of Naphthalenediimide Amphiphiles	D. A. Shejul; S. M. Wagalgave; R. W. Jadhav ; M. Al Kobaisi; D. D. La; L. A. Jones; R. S. Bhosale; S. V. Bhosale; S. V. Bhosale.	<i>New J. Chem.</i> 2020 , <i>44</i> , 1615–1623. https://doi.org/10.1039/C9NJ05137F	30	3.591
10£	Hydrothermal Synthesis of Tartaric Acid Functionalized Amino Acid CQD for Sensing of Hg ²⁺ and Fe ³⁺ Ions in Aqueous Medium	G. A. Zalmi; P. Khobrekar; R. W. Jadhav ; R. R. Naik; S. Sinari; S. T. Bugde; S. V. Bhosale.	<i>ChemistrySelect.</i> 2024 , <i>9</i> , 12782–12791. https://doi.org/10.1002/slct.202304825 .	07	1.9
9£	Porphyrin-based carbon dots as a fluorescence probe for sensing of Fe ³⁺ ion and S ²⁻ anion in aqueous solution	P. P. Khobrekar; V. K. Gawade; R. W. Jadhav ; S. T. Bugde; S. V. Bhosale.	<i>J. Dispers. Sci. Technol.</i> 2024 , 1–11. https://doi.org/10.1080/01932691.2024.2392171	08	2.2
8£	Next Generation Sustainable Nanostructures for Energy, Sensing, and Bio-integration	K. Korgaonkar; N. P. Dalbanjan; S. Sharma; R. W. Jadhav ; S. K. Praveenkumar; S. R. Parne.	<i>Nano-Structures & Nano-Objects</i> 2026 , <i>45</i> , 101615. https://doi.org/10.1016/j.nanoso.2026.101615 .	-	4.373
7£	Visible-light-induced aerobic C-3 thiocyanation of indoles using carbon dots as photoredox catalyst	P. P. Khobrekar; P. V. Shreechippa; R. R. Gawas; R. W. Jadhav ; V. R. Chari; S.V.Bhosale; S.T.Bugde.	<i>Synth. Commun.</i> 2025 , <i>160</i> , 1–12. https://doi.org/10.1016/j.tetlet.2025.155545 .	-	2.1
6£	A New ‘Off-On’ System Based on Core-Substituted Naphthalene Diimide with Dimethylamine for Reversible Acid–Base Sensing	V. G. More; D. N. Nadimetla; G. A. Zalmi; V. K. Gawade; R. W. Jadhav ; Y. D. Mane; S.V. Bhosale.	<i>ChemistryOpen</i> 2022 , <i>11</i> , e202200060. https://doi.org/10.1002/open.202200060	02	2.3
5£	Light Triggered Encapsulation and Release of C60 with a Photoswitchable TPE-Based Supramolecular Tweezers	M. Samanta; A. Rananaware; D. N. Nadimetla; S. A. Rahaman; M. Saha; R. W. Jadhav ; S. V. Bhosale; S. Bandyopadhyay.	<i>Sci. Rep.</i> 2019 , <i>9</i> , 1–7. https://doi.org/10.1038/s41598-019-46242-4	13	4.379

4£	Recent Advances in Aggregation-Induced Emission Active Materials for Sensing of Biologically Important Molecules and Drug Delivery System	G. A. Zalmi; R. W. Jadhav ; H. A. Mirgane; S. V. Bhosale.	<i>Molecules</i> 2022 , <i>27</i> , 150. https://doi.org/10.3390/molecules27010150	46	4.6
3£	AIE-Based & Organic Luminescent Materials: Nanoarchitectonics and Advanced Applications	V. K. Gawade; R. W. Jadhav ; S. V. Bhosale.	<i>Chem. Asian J.</i> 2024 , <i>19</i> , e202400682. https://doi.org/10.1002/asia.202400682 .	24	3.3
2£	Naphthalene diimides: perspectives and promise	S. V. Bhosale; M. Al Kobaisi; R. W. Jadhav ; P. P. Morajkar; L. A. Jones; S. George.	<i>Chem. Soc. Rev.</i> 2021 , <i>50</i> , 9845–9998. https://doi.org/10.1039/D0CS00239A	343	39.3
1£	Flower-Like Superstructures: Structural Features, Applications, and Future Perspectives	S. V. Bhosale; M. Al Kobaisi, R. W. Jadhav ; L. A. Jones.	<i>Chem. Rec.</i> 2021 , <i>21</i> , 257–283. https://doi.org/10.1002/tcr.202000129	30	7.5

Book chapter:

Sr. No.	Title of chapter	Authors	Title of the Book	Publisher	Editors and publication details	Citations
1	Development of a New Class of AIEgens	V. G. More, R. W. Jadhav , M. Al Kobaisi, L. A. Jones, and S. V. Bhosale.	Handbook of Aggregation-Induced Emission ISBN: 9781119643050	Wiley-VCH	Y. Tang and B.Z. Tang, 2022 , Pages: 221–53, https://doi.org/10.1002/9781119643098.ch29	02

Book:

Sr. No.	Title of the Book	Author	Publisher details	ISBN
1	Fundamentals of Organic Chemistry	Dr. Ratan Wamanrao Jadhav	Advent Publishing, India https://adventpublishing.in/	978-93-49630-79-6

←-----→ **Personal Details** ←-----→

Name: Dr. Ratan Wamanrao Jadhav

Permanent Address: At: Ambegaon, Tehsil: Deoni, District: Latur, Maharashtra-413519, India

DOB: 10/06/1994

Marital status: Married

Nationality: Indian

Category: General (Maratha)

Language Known: Marathi, English, Hindi

Passport No.: T0314486

<https://scholar.google.com/citations?user=hew6P2EAAAAJ&hl=en&oi=ao>

←-----→ **Declaration** ←-----→

I hereby declare that all the above statements are true to the best of my knowledge and belief.

Yours sincerely,



Dr. Ratan Wamanrao Jadhav