

Chemistry Department

Research papers published (2019-20 to 2024-25)

Sr. No.	Title of paper	Name of the author/s	Name of journal	Year of publication	ISSN number
1	Adsorptive removal of Fluoride using Polymer Modified Ceria Nanoparticles: Determination of Equilibrium, Kinetic and Thermodynamic Parameters	Maheshwari Zirpe, Hemlata Bagla, Jyotsna Thakur	Separation Science and Technology	2019	57540-149-6395
2	Highly efficient green synthesis of the photochromic spironaphthoxazines using an eco-friendly choline hydroxide catalyst	Vajekar, S. N.; Shankarling, G. S.	Synthetic Communication	2019	1532-2432
3	Choline hydroxide promoted sustainable one-pot three-component synthesis of 1H-pyrazolo[1,2-a]pyridazine-2-carbonitriles under solvent-free conditions	Vajekar, S. N.; Shankarlin, G. S.	Synthetic Communication	2020	1532-2432
4	Application of Fe ₃ O ₄ as a magnetic nanocatalyst in the synthesis of photochromic spironaphthoxazines	Vajekar, S. N.; Pargaonkar, J. G.; Patil A. B.; Patil, S. K.	Research Journal of Chemistry and Environment	2020	0972-0626
5	Binderless synthesis of nanoknotnet-like cobalt oxide for supercapacitor application	P. A. Patil	Materials Today: Proceedings	2020	2214-7853
6	Fabrication of ZnO nanostructured sensor by co-precipitation technique for NO ₂ gas detection.	V.S. Kamble, N.K. Desai, S.T. Salunkhe	International Journal of Grid and Distributing Computing	2020	2005-4262
7	Application of Fe ₃ O ₄ as a magnetic nanocatalyst in the synthesis of photochromic spironaphthoxazines	J.G.Pargaonkar, S.K. Patil, S.N. Vajekar, A.B. Patil	Research Journal of Chemistry and Environment	2020	0972-0626
8	Fabrication of ZnO nanostructured sensor by co-precipitation technique for NO ₂ gas detection	Vishal S. Kamble, Netaji K. Desai, Suresh T. Salunkhe	International Journal of Grid and Distributed Computing	2020	2005-4262
9	Rapid Removal of 152+154Eu (III) using Polyaniline/ Ceria Nanocomposite from Low	Maheshwari Zirpe, Hemlata Bagla, Jyotsna Thakur	Journal of Inorganic and Organometallic Polymers and	2020	1574-1443, 1574-1451

	Level Waste		Materials		
10	Phytochemical Screening And Comparative Assessment of Anti-Oxidant, Amylase and Anticoagulant Activity of Different Parts of Colocasia Esculenta (L.) Schott	Jyotsna Thakur, Mrunal Khambekar, Anuja Kumathekar	Journal of Advanced Scientific Research	2020	0976-9595
11	Synthesis, characterization, anticancer and DNA photocleavage study of novel quinoline Schiff base and its metal complexes.	Sanjay K. Patil, Baliram T. Vibhute	Arabian Journal of Chemistry	2021	1878-5352
12	Synthesis, Spectral Characterization and Antitubercular Study of noval Quinoline Schiff Base and Its Metal Complexes	Vibhute Baliram T, Patil Sanjay K, Patil Arvind M	Analytical Chemistry Letters	2021	2229-7928
13	Multicomponent one pot synthesis of Substituted 3,4-Dihydropyrimidin-2-(1H)-ones by Nanocrystalline CeO ₂	V.D. Patil	Research Journal of Chemistry and Environment	2021	0972-0626
14	Facile Synthesis of 2-aryl-5-ethyl-2,3-dihydro-1H-3-pyrazolones catalysed by nano Crystalline ZrO ₂	V.D. Patil	International Journal of All Research Education and Scientific Methods (IJARESM)	2021	---
15	Studies on structural, spectral and morphological properties of co-precipitation derived Co doped ZnO nanocapsules for NO ₂ sensing applications	V.S. Kamble, Y.H. Navale, V.B. Patil, N.K. Desai, S.N. Vajekar, S.T. Salunkhe	Journal of Materials Science: Materials in Electronics	2021	0957-4522 / 1573-482X
16	Enhanced NO ₂ gas sensing performance of Ni-doped ZnO nanostructures	V.S. Kamble, Y.H. Navale, V.B. Patil, N.K. Desai, S.T. Salunkhe	Journal of Material Science: Material in Electronics	2021	957-4522 / 1573-482X
17	Gas Sensing Application of Ceria, Cassiterite and Ceria-Cassiterite Nanocomposite	Mane C.B., Pawar R.P., Tapase A.S., More H.S., Jadhav B.V., Patil R.P.	Research Journal of Chemistry and Environment	2021	0972-0626
18	Study of Application of Zn _{0.5} Mn _{0.5} Fe ₂ O ₄ NP's prepared via Sol-gel Method for Dyestuff Industry Waste Water Purification,	Shaikh S.F., Jadhav B.V., Patil R. P., Patil J. S,	Research Journal of Chemistry and Environment,	2021	0972-0626
19	Effect of Nickel Substitution on Structural and Magnetic Properties of Novel Polyol route Synthesized Cobalt Ferrite	Birmule P.R., Chavan A. S., Jadhav B. V., Burungale A. S., Helavi. Reddy V.B., Patil R.P.	Research Journal of Chemistry and Environment	2021	0972-0626
20	Photodegradation of Dye Pollutants on Nanocrystalline	Arjun S. Chavan,	Macromolecular Symposia	2021	1022-1360

	Co Doped Li _{0.5} Fe _{2.5} O ₄ under UV-Visible Light Irradiation	Bhagvan V. Jadhav, Mohan R. Kadam, Akush V. Mali, C. B. Mane, and Rajendra P. Patil			
21	A green and efficient one-Pot Synthesis of Polyhydroquinoline Derivatives Catalyzed By Ammonium Chloride Under Aqueous Media	B.D. Aghav, S.A. Shaikh, N. Roy and K.N. Vidhate	Vidyabharati International Interdisciplinary Research Journal	2021	2319-4979
22	An Innovative Method Designed for the Synthesis of Some New Mixed Ligand Ni(II) Complexes Its Characterization and Applications	J.M.Pawara and S.S.Patil	World Journal of Chemical Education	2021	2375-1665
23	Microwave-Assisted Synthesis of Some New Mixed Ligand Ni(II) Complexes Its Characterization and Its Antimicrobial Study	J.M.Pawara and S.S.Patil	Journal of Pharmaceutical Research International	2021	2456-9119
24	Synthesis of NiO Nanoparticles by Thermal Decomposition at Low-Temperature of New Aqua(2-amino-6-methyl pyrimidine-4-ol and Isoleucine)Ni(II) Complex and its antimicrobial study'	J. M. Pawara and S.S.Patil	Journal of Advanced Scientific Research	2021	0976-9595
25	Enhanced Photocatalytic Degradation of Methylene Blue Dye using Ag-Fe ₂ O ₃ Core-shell Nanoparticles	Maheshwari Zirpe, Thakur Jyotsna	Research Journal of Chemistry and Environment	2021	0972-0626
26	A green approach to the Rapid Synthesis of 2-Phenyl Benzoxazole and its derivatives using Magnetically Separable Ag@Fe ₂ O ₃ Core-Shell Nanoparticles	Shinde Gayatree Maheshwari Zirpe, Thakur Jyotsna	Research Journal of Chemistry and Environment	2021	0972-0626
27	Studies of Mixed Ligand Lanthanum Complexes: Synthesis, Spectral Interpretations and Antibacterial Study	DKP and SSP	Journal of Pharmaceutical Research International	2021	2456-9119
28	A Newer Method Developed For The Synthesis Of Diferuloyl Methane And Its Derivatives	J.M.Pawara, S.S. Patil, D.K.Patil, V.S.Kamble	international journal of advanced research	2021	2320-5407
29	Green Ecofriendly synthesis of Glycoluril derivatives via Cyclocondensation of Benzil and urea/thiourea	Patil Vishvanath D., Gharat Vaishnav D. and Salve Amruta M.	Research Journal of Chemistry and Environment	2021	0972-0626
30	Conventional and Green Synthesis, Characterization and Antimicrobial potency of	Varsha Ahuja, Vasant Barhate, , Ritika	Journal of Scientific Research	2021	0447-9483

	Complex of Cu (II) with [2-((Z)-(4-hydroxy-3-methoxy-5-((E)-thiazol-5-ylidiazanyl)benzenylidene)amino)benzoic acid] (MThBABA)	Makhijani			
31	Conventional and Microwave Synthesis, Characterization and Study of Microbiological Activity of Complexes of Ni (II) with [2-((Z)-(4-hydroxy-3-methoxy-5-((E)-thiazol-5-ylidiazanyl)benzenylidene)amino)benzoic acid] (MThBABA)	Ritika Makhijani Vasant Barhate, Varsha Ahuja	Journal of Scientific Research	2021	0447-9483
32	Microwave and Conventional Synthesis of Palladium (II) Complex with, 2-(5- Bromo-2-oxoindolin-3-ylidene) hydrazine-1-carbothioamide, Characterization and Study of Microbiological Activity	Borgave Seema, Barhate Vasant, Madan Parineeta	Research Journal of Chemistry and Environment	2021	0972-0626
33	Role of [N - (O-HydroxyBenzylidene) Pyridine -2-Amine] (NOHBPA) in Extractive Spectrophotometric Determination of Nickel (II)	Makhijani Ritika, Navale Dinesh and Barhate Vasant	Research Journal of Chemistry and Environment	2021	0972-0626
34	Magnetically Recyclable Ag@Fe ₂ O ₃ Core-shell Nanostructured Catalyst for One-pot Synthesis of 2-Aryl Benzimidazole and Benzothiazole	G. Shinde, J.Thakur	Current Organocatalysis	2022	2213-3380
35	Synthesis of substituted benzole[1,3] oxazino analogs	Ranade P. B., Navale D. N., Zote S. W. Patil D. K.	Indian Journal of Chemistry	2022	0376-4699
36	Antimicrobial, Cytotoxicity and Molecular Docking Study of New Quinoline Schiff Base and its Metal(ii) Complex	B.T.Vibute, B.D.Aghav, B.P.More, R.O. Bellamkonda S.K.Patil	Asian Journal of Chemistry	2022	0970-7077
37	Improved Toxic NO ₂ Gas Sensing Response of Cu-doped ZnO Thin-film Sensors derived by Simple Co-precipitation Route	V.S. Kamble, R.K. Zemase, R.H. Gupta, B.D. Aghav, S.A. Shaikh, J.M. Pawara, S.K. Patil, S.T. Salunkhe	Optical Materials	2022	0925-3467
38	Magnetically Recyclable Ag@ Fe ₂ O ₃ Core-shell Nanostructured Catalyst for One-pot Synthesis of 2-Aryl Benzimidazole and Benzothiazole	Gayatree Shinde, Jyotsna Thakur	Current Organocatalysis	2022	2213-3372
39	Sono-assisted synthesis of AgFeO ₂ nanoparticles for	Maheshwari Zirpe,	Journal of Nanoparticle	2022	1388-0764

	efficient removal of Basic Green-4 dye from aqueous solution	Jyotsna Thakur	Research		
40	Impact of Industrial Proximity on the Plants and Agricultural Soil in Taloja Industrial Area, India	Jyotsna Thakur, Shrushti Kulkarni, Mahadev Mulik, Pravin Chormule, Madhukar Pande	Journal of Soils and Crops	2022	0971-2836
41	Physicochemical, Thermal, Spectral and Biological Investigation of Mixed Ligand Lanthanum Complexes.	A. A. Bhagat, S. S. Patil, Bhushan P. Langi, V. S. Kamble, D. K. Patil, J. M. Pawara.	Indian Journal of Natural Sciences	2022	0976 – 0997
42	X-Ray Diffraction Studies for the Determination of Crystallite Size of ZnO Nanoparticles: Scherrer Formula and Williamson-Hall Plot Approach	B.D. Aghav, V.S. Kamble, S.A. Shaikh, J.M. Pawara, S.T. Salunkhe	Indian Journal of Natural Sciences	2022	0976 – 0997
43	Synthesis of Metal Oxide Nanoparticles by Thermal Decomposition of a Ni(II) Complex and its Antimicrobial Activity	S. S. Patil, V. S. Kamble, D. K. Patil, J. M. Pawara	Malaysian Journal of Chemistry	2022	2550-1658
44	Antibacterial Detection of Some Synthesized Cerium(III) Metal Mixed Ligand Complexes Along With Their Physicochemical, Spectral And Thermal Study.	D. K. Patil, J. M. Pawara, Bhimarao Patil, V. S. Kamble	Shodhasamhita	2022	2277-7067
45	Metal nanoparticles: Ligand-free approach towards coupling reactions	Vajekar, S.N., A.B. Patil, Sharwari K. Mengane	Current Chinese Science	2022	2210-2914
46	Effects of Annealing Temperature on the Size of Zinc Doped Cobalt Ferrite Nanoparticles Synthesized using Green Binder,	Sajid F. Shaikh, B.V. Jadhav, Patil R. P.	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)	2022	2581-9429
47	Bimetallic CoCeO ₂ oxide nanoparticles: An efficient and reusable heterogeneous catalyst for synthesis of 2-amino-3-cyano-4H-pyran derivatives	S.A. Shaikh, V.S. Kamble, R.H. Gupta, A.G. Awale, S.T. Salunkhe, B.D. Aghav	Journal of Heterocyclic Chemistry	2023	0022-152X
48	Efficient Synthesis of Xanthenediones Using CuCeO ₂ Nanoparticle Catalyst in Aqueous Medium	S.A. Shaikh, V.S. Kamble, S.T. Salunkhe, S.K. Patil, B.D. Aghav	Organic Preparations and Procedures International	2023	0030-4948

49	Core-shell structured Fe ₃ O ₄ @MgO: magnetically recyclable nanocatalyst for one-pot synthesis of polyhydroquinoline derivatives under solvent-free conditions	GayatreeShinde, Jyotsna Thakur	Journal of Chemical Sciences	2023	0974-3626
50	Sol-gel Assisted Nano Structured Spinel Ferrite Co _{0.5} Ni _{0.5} Fe _{1.0} Cr _{1.0} O ₄ and its Catalytic Application for the Reduction of P-Nitrophenol to P-Aminophenol	B.V. Jadhav, R.P. Patil, A.D. Pinjarkar	Indian Journal of Natural Sciences	2023	0976 – 0997
51	The Review Study on Health Issues Due to Chemically Adulterated Food	Sajid F. Shaikh, Ayesha Zameer Takey, Tasmeeena Shaukat Chougale, Bhagwan V. Jadhav, Jayashri S. Patil, Hrushikesh B. Jadhav	International Journal of Emerging Technologies and Innovative Research (IJETIR)	2023	2349-5162
52	A green and one-pot synthesis of 6-amino-1,4-dihydropyrano[2,3-c]-pyrazole-5-carbonitrile derivatives using CoCeO ₂ nanoparticles as an efficient, reusable and heterogeneous catalyst.	S. A. Shaikh, V. S. Kamble, R. K. Zemase, S. K. Patil, B. D. Aghav.	Research on Chemical Intermediate	2023	1568-5675
53	Versatile applications of transition metal incorporating quinoline Schiff base metal complexes: An overview	Harshad R. Sonawane , Baliram T. Vibhute , Balasaheb D. Aghav , Jaydeep V. Deore, Sanjay K. Patil	European Journal of Medicinal Chemistry	2023	0223-5234
54	Removal study of Malachite Green dye from aqueous media on Activated carbon by surfactant modification.	Sapana M.Chilate JitendraM.Pawara, Shailesh N.Vajekar	A Journal of the National Institute of Urban Affairs	2023	0970-9045
55	Adsorption and Kinetic study of priority organic pollutant phenol from aqueous waste using Activated carbon	Shailesh Vajekar, V.S. Kamble Omkar Shembekar, Sapana Chilate	Journal of Advanced Zoology	2023	050253-7214
56	Adsorption of Congo Red dye from waste water using Carbon based material:A Comparative Study	Shailesh N.Vajekar, Vishal S. Kamble, Sapana M.Chilate	A Journal of the National Institute of Urban Affairs	2023	0970-9045

57	Synthesis, Characterization, and Applications of Y ₂ O ₃ Nanoparticles Synthesized via Thermal Decomposition of the [Y(Cup) ₂ (Gly)·2H ₂ O] Complex	Vishal S. Kambl, Sunil. S. Patil, Sagar L. Khairnar, Digambar K. Patil, Satyajit S. Kambl, Sapana M. Chilate, Jitendra M. Pawara	Oriental Journal of Chemistry	2023	2231-5039
58	The Effects of Various Mordant Combinations on Dyeing Cotton Fabric with Natural Dyes Extracted from Marigold Flower, Blueberries, Beetroot, and Blue Butterfly Pea Flower: A Comprehensive Study	Avinash K. Gavit, Vishal S. Kamble, Satyajit Kamble, Shashikant Pawar, Milind Jamdhade, Jitendra M. Pawara	Indian Journal of natural Sciences	2023	---
59	Preparation Of Mixed Ligand Complexes of Cerium (III) Metal Using Multidentate Ligands And Investigation Of Their Physicochemical, Spectral, Thermal, And Antibacterial Properties	J. M. Pawara, V. S. Kamble, S. S. Kamble, D. Y. Patil, H. P. Deokar, D. K. Patil	Journal of Advanced Zoology	2023	0253-7214
60	Navigating the Evolution: A Comprehensive Analysis of Awareness in Contemporary TV Display Technologies	V.S. Kamble, S. L. Khairnar, J. M. Pawara, D. K. Patil, V. N. Pawar, S. S. Kamble	Journal of Advanced Zoology	2023	0253-7214
61	Exploring Aerated Autoclaved Concrete (ACC) Acoustic Properties Across Diverse Frequency Bands	P.S. Thakur, V.N. Pawar, S.S.Kamble, J.M. Pawara, S.A. Solaskar, V.S. Kamble	Journal of Advanced Zoology	2023	0253-7214
62	Magnetically Recoverable CMC/Fe ₃ O ₄ Nanocomposite for Efficient Removal of Hg(II) and Cd(II) ions from the Aqueous Solution	Maheshwari Zirpe, Jyotsna Thakur	Separation Science and Technology	2023	1520-57540 149-6395
63	Spindle-shaped AgFeO ₂ nanoparticles for efficient removal of cationic and anionic dyes	Maheshwari Zirpe, Jyotsna Thakur	Journal of Dispersion Science and Technology	2023	0193-26911 532-2351
64	Highly Efficient One Pot Synthesis of Heterocyclic Benzimidazoles Catalysed By Nano Crystalline ZrO ₂	V.D. Patil	Heterocyclic Letters	2023	2231 - 3087

65	Synthesis of 1,8-dioxodecahydroacridines using core-shell structured Fe ₃ O ₄ @MgO MNP's: a solvent-free protocol	Gayatree Shinde, Jyotsna Thakur	Research on Chemical Intermediate	2023	1568-5675
66	Mild efficient green multicomponent synthesis of bis (PYRAZOL-5-OL) derivative using cobalt doped zinc nano catalyst	V.D. Patil	Research journal of chemistry and environment	2024	0972-0626
67	Solvent free multicomponent synthesis of pyrazole with ceria doped copper nanocatalyst	V.D. Patil	Heterocyclic Letters	2024	2231 - 3087
68	Synthesis and Characterization of ZnO Nanostructured Sensors via Co-precipitation: A Comprehensive Study for Toxic H ₂ S Gas Detection	Vishal S. Kamble ¹ , Sanjay K. Patil ¹ , Shailesh N. Vajekar ¹ , Suresh T. Salunkhe ² , Jyotsna G. Pargaonkar ^{1*}	Indian Journal of Natural Science	2024	0976 – 0997
69	Neha More, Rahul Bhise, Maheshwari Zirpe, Mukesh Padvi, Jyotsna Thakur	Low-temperature NO ₂ gas sensing by delafossite-structured AgFeO ₂ nanograins	Journal of Nanoparticle Research	2024	eissn 1572-896X print 1388-0764
70	Vijay N. Pawar Vishal S. Kamble**, Kaustubh A. Mundhe, Balasaheb D. Aghav, Suresh T. Salunkhe, Abhijit N. Kadam, Satyajit S. Kamble*	Simple co-precipitation synthesis of aluminum-decorated zinc oxide nanorods for noxious NO ₂ gas detection at low ppm concentrations	Vacuum	2024	Online ISSN: 1879-2715 Print ISSN: 0042-207X 227 (2024) 113373
71	Sandip Gadakh, Dhaval Prajapati, Balasaheb Aghav*	Synthesis, biological evaluation and molecular docking study of novel 5-substituted 1,2,4-oxadiazole-3-yl benzoxazole derivatives as potential	ChemistrySelect	2024	Online ISSN: 2365-6549 Print ISSN: 2365-6549 e202404051

		antimicrobial agents			
72	Shaheen A. Shaikh, Vishal S. Kamble, Priya A. Patil, Balasaheb D. Aghav*	CuCeO ₂ NPs: An efficient catalyst for the synthesis of 1,4-dihydropyridine derivatives	Journal of Porous Materials	2025	Electronic ISSN 1573-4854 Print ISSN 1380-2224
73	Sandip Gadakh, Balasaheb Aghav*, Nishith Teraiya, Dhaval Prajapati, Jignesh H. Kamdar, Bhumiika Patel, Ruchi Yadav	Discovery of novel benzoxazole analogues as potential anticancer agent selectively targeting aromatase	Bioorganic & Medicinal Chemistry	2025	Online ISSN: 1464-3391 Print ISSN: 0968-0896 122 (2025) 118142
74	Tushar s. Umasare*, , Sanjay k. Patil and Jyotsna g. Pargaonkar	Co(II), Ni(II), Cu(II) and Zn(II) Metal Complexes of Hydrazone Schiff Base Ligand: Synthesis, Characterization , Thermal Behaviour, Antioxidant and Antimicrobial Studies	Asian Journal of chemistry	2024	09775 - 427X
75	Digambar Patil , Priya Singh , Anjali Chaudhary, Hrushikesh Deokar	Solanum Xanthocarpum Assisted Benign Synthesis of Benzimidazole	International Journal of Current Science Research and Review	2025	2581-8341