

Curriculum Vitae

- **Name:** Dr. Komal Jakhar
- **Designation:** Professor
- **Department:** Chemistry
- **Field of Specialization:** Organic Chemistry
- **Teaching Experience:** 15 Years
- **Research Experience:** 19 Years
- **Office Address:** Department of Chemistry,
Maharshi Dayanand University,
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Delhi Road, Rohtak-124001, Haryana, India
- **Mobile No:** 9255533306
- **Email Id:** komal.jakhar@rediffmail.com
- **Field of Research Interest:** Synthetic and Medicinal Chemistry, Heterocyclic
Chemistry, Green Chemistry
- **Educational Qualification:** M.Sc. Chemistry, N.E.T., J.R.F., S.F.R., Ph.D.
- **Academic Societies Membership:**
 - Life Member of Indian Science Congress Association



- Life member of Indian Thermodynamic Society
- Life Member of Indian Society of Analytical Scientists-Delhi Chapter
- **Carrier Profile:**

Designation	Institute	Duration	
		Assistant Professor	Department of Chemistry, M. D. University, Rohtak
Associate Professor	Department of Chemistry, M. D. University, Rohtak	May 1, 2022	April 30, 2025
Professor	Department of Chemistry, M. D. University, Rohtak	May 1, 2025	Till Date

- **Participation in conferences/seminars/workshops: 45**
- **Research papers published: 54**
- **Courses attended: 06**

List of Publications

1. An eco-friendly oxidative bromination of alkanones by an aqueous grinding technique, **K. Jakhar** and J.K. Makrandi, Green Chemistry Letters and Reviews, 2008, 1, 219-221. <https://doi.org/10.1080/17518250802660407>
2. Synthesis and antibacterial activity of 3-(coumarin-3-yl)acylthio-5H-1,2,4-triazino[5,6-b]indoles, **K. Jakhar** and J.K. Makrandi, Indian Journal of Heterocyclic Chemistry, 2010, 20, 189-190.
https://www.researchgate.net/publication/290784417_Synthesis_and_antibacterial_activity_of_3-coumarin-3-yl_acylthio-5H-124-triazino_56-b_indoles
3. Synthesis of 2-aryl-5- (benzofuran-2-yl)- thiazolo [3,2-b] [1,2,4] triazoles using green procedures and their antibacterial activity, **K. Jakhar** and J.K. Makrandi, Indian Journal of Chemistry, Sec B, 2012, 51B, 531-536.
[https://nopr.niscpr.res.in/bitstream/123456789/13701/1/IJCB%2051B\(3\)%20531-](https://nopr.niscpr.res.in/bitstream/123456789/13701/1/IJCB%2051B(3)%20531-)

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4. An efficient synthesis of 3-bromoflavones under solvent free conditions using grinding technique, **K. Jakhar** and J.K. Makrandi, Indian Journal of Chemistry, Sec B, 2012, 51B, 770-773.
<https://nopr.niscpr.res.in/bitstream/123456789/14071/1/IJCB%2051B%285%29%20770-773.pdf>
5. A green synthesis and antibacterial activity of 2-aryl-5-(coumarin-3-yl)-thiazolo[3,2-b][1,2,4]triazoles, **K. Jakhar** and J.K. Makrandi, Indian Journal of Chemistry, Sec B, 51B, 1511-1516.
<https://nopr.niscpr.res.in/bitstream/123456789/14808/1/IJCB%2051B%2810%29%201511-1516.pdf>
6. Synthesis and antibacterial activity of 3-(cinnoline-3-yl)acylthio-5H-1,2,4-triazino[5,6-b]indoles, **K. Jakhar** and J.K. Makrandi, Indian Journal of Heterocyclic Chemistry, 2012, 22, 173-176.
https://connectjournals.com/achivestoc2.php?fulltext=25031022H_173-176.pdf&&bookmark=CJ-001644&&issue_id=22-02&&yaer=2012
7. Eco-friendly bromination of chalcones and synthesis of flavones using grinding techniques, **K. Jakhar** and J.K. Makrandi, Indian Journal of Chemistry, Sec-B, 2013, 52B, 141-145.
[https://nopr.niscpr.res.in/bitstream/123456789/15629/1/IJCB%2052B\(1\)%20141-145.pdf](https://nopr.niscpr.res.in/bitstream/123456789/15629/1/IJCB%2052B(1)%20141-145.pdf)
8. A proficient role of Zirconium oxychloride octahydrate with sodium nitrite for deoxygenation of various aldoximes and ketoximes under solvent free conditions, P. Sharma, R. Singh and **K. Jakhar**, Journal of Advanced Chemical Sciences, 2016, 2(4), 400-402.
<https://jacsdirectory.com/journal-of-advanced-chemical-sciences/articleview.php?id=131>
9. Montmorillonite K-10 catalyzed facile synthesis of 1,3-disubstituted ureas from biuret under solvent free conditions, **K. Jakhar**, R. Singh and P. Sharma, Journal of Advanced Chemical Sciences, 2016, 2(4), 409-411.
<https://jacsdirectory.com/journal-of-advanced-chemical-sciences/articleview.php?id=134>
10. Synthesis and antimicrobial evaluation of urea and thiourea derivatives of sulfonic acid, R. Singh, **K. Jakhar**, P. Sharma and G. Vinoth Kumar, Der Pharma Chemica, 2016,

- 8(19), 261-267. <https://www.derpharmachemica.com/pharma-chemica/synthesis-and-antimicrobial-evaluation-of-urea-and-thiourea-derivatives-of-sulfonic-acid.pdf>
11. Green synthesis of saccharin substituted urea and thiourea derivatives and their antimicrobial evaluation, R. Singh and **K. Jakhar**, Der Pharma Chemica, 2016, 8(20), 175-181.
<https://www.derpharmachemica.com/pharma-chemica/green-synthesis-of-saccharin-substituted-urea-and-thiourea-derivatives-and-their-antimicrobial-evaluation.pdf>
 12. ZrOCl₂.8H₂O: An efficient catalyst for the synthesis of N,N-disubstituted ureas from biuret under solvent free conditions, R. Singh, **K. Jakhar** and P. Sharma, Chemical Science Transactions, 2017, 6(1), 135-140. <http://www.e-journals.in/pdf/V6N1/135-140.pdf>
 13. Synthesis of carbethoxycinnoline derivatives and antimicrobial evaluation, **K. Jakhar**, Journal of Biological and Chemical Chronicles, 2018, 4(2), 65-69.
<https://www.eresearchco.com/articles/synthesis-of--carbethoxycinnoline-derivatives-and-antimicrobial-evaluation.pdf>
 14. Synthesis of cinnoline substituted triazoles with greener procedures and antibacterial evaluation, **K. Jakhar**, Journal of Applicable Chemistry, 2018, 7(6), 1631-1635.
<http://www.joac.info/ContentPaper/2018/19-7-6-32-14.pdf>
 15. Preparation and photoluminescent characteristics of green Tb(III) complexes with β -diketones and N donor auxiliary ligands, A. Dalal, K. Nehra, A. Hooda, D. Singh, **K. Jakhar** and S. Kumar, Inorganic Chemistry Communications, 2022, 139, 109349.
<https://doi.org/10.1016/j.inoche.2022.109349>
 16. Preparation, optoelectronic and spectroscopic analysis of fluorinated heteroleptic samarium complexes for display applications, K. Nehra, A. Dalal, A. Hooda, **K. Jakhar**, D. Singh and S. Kumar, Inorganica Chimica Acta, 2022, 537, 120958.
<https://doi.org/10.1016/j.ica.2022.120958>
 17. Preparation and photoluminescent analysis of Sm³⁺ complexes based on unsymmetrical conjugated chromophoric ligand, A. Hooda, K. Nehra, A. Dalal, S. Singh, S. Bhagwan, **K. Jakhar** and D. Singh, Journal of Material Science: Materials in Electronics, 2022, 33, 11132-11142. <https://doi.org/10.1007/s10854-022-08089-w>
 18. Synthesis, thermal and photoluminescence investigation of Tb(III) β -diketonates with 1,10-phenanthroline derivatives, K. Nehra, A. Dalal, A. Hooda, S. Bhagwan, **K. Jakhar**, D. Singh, R. S. Malik, S. Kumar, B. Rathi, Journal of Luminescence, 2022, 251, 119233. <https://doi.org/10.1016/j.jlumin.2022.119233>

19. Facile and environmental friendly fluorinations using ionic liquids, **K. Jakhar**, *Current Organic Synthesis*, 2022, 19, 1-25.
<http://dx.doi.org/10.2174/1570179419666220208104453>
20. Synthesis of carboxamides and carbothioamides of phthalimide: Molecular modeling and biological investigation, R. Gavadia, J. Rasgania and **K. Jakhar**, *Asian Journal of Chemistry*, 2022, 34(12), 3231-3242. <https://doi.org/10.14233/ajchem.2022.24042>
21. Synthesis, Type II diabetes inhibitory activity, antimicrobial evaluation, and docking studies of N'-arylidene-2-((7-methylbenzo[4,5]thiazolo[2,3-c] [1,2,4]triazol-3-yl)thio)acetohydrazides, S. Mor, S. Sindhu, M. Khatri, R. Punia and **K. Jakhar**, *European Journal of Chemistry*, 2022, 13(4), 426-434. <https://doi.org/10.5155/eurjchem.13.4.426-434.2315>
22. Antimicrobial evaluation and QSAR studies of 3,6-disubstituted-11H-benzo[5,6][1,4]thiazino[3,4-a]isoindol-11-ones, S. Mor, S. Sindhu, M. Khatri, R. Punia, H. Sandhu, J. Sindhu and **K. Jakhar**, *European Journal of Medicinal Chemistry Reports*, 2022, 5, 100050. <https://doi.org/10.1016/j.ejmcr.2022.100050>
23. Synthesis and in vitro anticancer evaluation of 8b-hydroxy-1-(6-substitutedbenzo[d]thiazol-2-yl)-3-(3-substitutedphenyl)-1,8b-dihydroindeno[1,2-c]pyrazol-4(3aH)-ones, S. Mor, M. Khatri, R. Punia, D. Kumar, D. K. Jindal, B. Basu and **K. Jakhar**, *Journal of Molecular Structure*, 2022, 1269, 133858.
<https://doi.org/10.1016/j.molstruc.2022.133858>
24. Facile synthesis, pharmacological and In silico analysis of succinimide derivatives: An approach towards drug discovery, J. Rasgania, R. Gavadia and **K. Jakhar**, *Journal of Molecular Structure*, 2023, 1274, 134424.
<https://doi.org/10.1016/j.molstruc.2022.134424>
25. Synthesis and in vitro antimicrobial evaluation of benzothiazolyindenopyrazoles, S. Mor, M. Khatri, R. Punia and **K. Jakhar**, *Medicinal Chemistry Research*, 2023, 32(1), 47-56. <https://doi.org/10.1007/s00044-022-02988-7>
26. Synthesis of isoniazid analogs with promising antituberculosis activity and bioavailability: Biological evaluation and computational studies, R. Gavadia, J. Rasgania, M.V. Basil, V. Chauhan, S. Kumar and **K. Jakhar**, *Journal of Molecular Structure*, 2023, 1283, 135325. <https://doi.org/10.1016/j.molstruc.2023.135325>
27. Facile one-pot synthesis of nicotinamide analogs: Biological and computational evaluation, J. Rasgania, R. Gavadia, R. K. Kapoor, V. Saharan and **K. Jakhar**, *Asian Journal of Chemistry*, 2023, 35(6), 1463-1472.

<https://doi.org/10.14233/ajchem.2023.27878>

28. Preparation and spectral features of Dy(III) β -diketonates with m, m'-disubstituted N-donor aromatic auxiliary moieties for displays, A. Hooda, D. Singh, A. Dalal, S. Malik, S. Redhu, **K. Jakhar**, S. Kumar, R. S. Malik and P. Kumar, *Inorganic Chemistry Communications*, 2023, 155, 111018. <https://doi.org/10.1016/j.inoche.2023.111018>
29. Synthesis of isatin-tagged thiadiazoles as anti-breast cancer leads: In-vitro and in-silico investigations, J. Rasgania, R. Gavadia, S. Nimesh, L. Loveleen, S. Mor, D. Singh and **K. Jakhar**, *Journal of Molecular Structure*, 2023, 1294, 136464. <https://doi.org/10.1016/j.molstruc.2023.136464>
30. Design and synthesis of isoniazid-based pyrazolines as potential inhibitors of *Mycobacterium tuberculosis* with promising radical scavenging action: In-vitro and in-silico evaluations, J. Rasgania, R. Gavadia, M. Varma-Basil, V. Chauhan, S. Kumar, S. Mor, D. Singh and **K. Jakhar**, *Journal of Molecular Structure*, 1295, 2024, 136657. <https://doi.org/10.1016/j.molstruc.2023.136657>
31. Synthesis, biological evaluations and *in silico* studies on pyrimidine-appended fused pyrazolones as anticancer and antimicrobial agents, S. Mor, R. Punia, M. Khatri, D. Kumar, A. Kumar, D. K. Jindal, N. Singh, R. Sharma, M. Ahmed, S. Shukla and **K. Jakhar**, *Journal of Molecular Structure*, 2024, 1296, 136759. <https://doi.org/10.1016/j.molstruc.2023.136759>
32. Design and synthesis of triazole-functionalized isatin hybrids with potent anti-proliferative action against triple-negative breast cancer MDA-MB-231 cell line: a hybrid pharmacophore approach, J. Rasgania, R. Gavadia, S. Nimesh, L. Loveleen and **K. Jakhar**, *Journal of the Iranian Chemical Society*, 2024, 21, 429-443. <https://doi.org/10.1007/s13738-023-02936-1>
33. Design, synthesis and exploration of novel triazinoindoles as potent quorum-sensing inhibitors and radical quenchers, J. Rasgania, R. Gavadia, N. Sahu, P. Sharma, N. S Chauhan, V. Saharan, R.K. Kapoor and **K. Jakhar**, *Future Medicinal Chemistry*, 2024, 16(5), 399-416. <https://doi.org/10.4155/fmc-2023-0313>
34. Synthesis of indole-linked thiadiazoles and their anticancer action against triple-negative breast cancer, R. Gavadia, J. Rasgania, N. Sahu, S. Nimesh, L. Loveleen, S. Mor and **K. Jakhar**, *Chemistry & Biodiversity*, 2024, 21(4), e202302000. <https://doi.org/10.1002/cbdv.202302000>
35. Examination of the spectroscopic characteristics of bright green emitting, octa coordinated luminescent terbium (III) complexes, S. Redhu, D. Singh, A. Hooda, A.

- Dalal, **K. Jakhar**, S. Kumar, R.S. Malik, P. Kumar and J. Sindhu, *Polyhedron*, 2024, 253, 116926. <https://doi.org/10.1016/j.poly.2024.116926>
36. Design, synthesis, α -amylase and glucose diffusion inhibition, and molecular docking studies of new indenopyrazolones bearing benzothiazole derivatives, R. Punia, S. Mor, S. Sindhu, D. Kumar, P. P. Das, D.K. Jindal, A. Kumar, R. Mohil and **K. Jakhar**, *Bioorganic & Medicinal Chemistry Letters*, 2024, 103, 129692. <https://doi.org/10.1016/j.bmcl.2024.129692>
 37. Synthesis and photoluminescent analyses of ternary terbium(III) tris- β -diketonate complexes: a systematic exploration, V. Aggarwal, D. Singh, A. Hooda, K. Nehra, **K. Jakhar**, S. Kumar, R. S. Malik and P. Kumar, *Journal of Materials Science: Materials in Electronics*, 2024, 35, 568. <https://doi.org/10.1007/s10854-024-12314-z>
 38. Optimizing hexafluoro-2,4-pentanedione based Eu(III) complexes: A comprehensive study on the synthesis, spectroscopic characterization with Judd-Ofelt calculation, S. Malik, **K. Jakhar**, D. Singh, S. Kumar, R. S. Malik and P. Kumar, *Optical Materials*, 2024, 150, 115257. <https://doi.org/10.1016/j.optmat.2024.115257>
 39. Near ultra-violet excitable Tb(III)-tris-hexafluoro-2,4-pentanedione complexes for OLEDs: Insights into the impact of ancillary ligands on photoluminescent characteristics, S. Malik, **K. Jakhar**, D. Singh, A. Hooda, K. Nehra, S. Kumar, R.S. Malik and P. Kumar, *Journal of Molecular Structure*, 2024, 1311, 138334. <https://doi.org/10.1016/j.molstruc.2024.138334>
 40. 1,1,1-Trifluoro-5,5-dimethyl-2,4-hexanedione based ternary complexes of Eu(III): Synthesis, structural and luminescence investigations, S. Redhu, D. Singh, A. Hooda, A. Dalal, **K. Jakhar**, S. Kumar, R. S. Malik and P. Kumar, *Optical Materials*, 2024, 151, 115348. <https://doi.org/10.1016/j.optmat.2024.115348>
 41. Facile synthesis and in silico studies of benzothiazole-linked hydroxypyrazolones targeting α -amylase and α -glucosidase, R. Punia, S. Mor, M. Khatri, D. Kumar, P.P. Das, D.K. Jindal, A. Kumar, P. Selvaraj, R. Kumar, R. Mohil and **K. Jakhar**, *Future Medicinal Chemistry*, 2024, 16(10), 999-1027. <https://doi.org/10.4155/fmc-2023-0384>
 42. Optimizing white light emission in Dy(III) complexes: impact of energy transfer from mono and bidentate ligands on luminescence, S. Malik, **K. Jakhar**, D. Singh, A. Hooda, S. Redhu, S. Dalal, V. Aggarwal, S. Kumar, R.S. Malik and P. Kumar, *RSC Advances*, 2024, 14, 22642-22655. <https://doi.org/10.1039/D4RA03897E>
 43. Synthesis of indole-functionalized isoniazid conjugates with potent antimycobacterial and antioxidant efficacy, R. Gavadia, J. Rasgania, N Sahu, M. Verma-Basil, V.

- Chauhan, S. Kumar, S. Mor, D. Singh and **K Jakhar**, *Future Medicinal Chemistry*, 2024, 16(17), 1731-1747. <https://doi.org/10.1080/17568919.2024.2379240>
44. Exploring the role of neutral ligands in modulating the photoluminescence of samarium complexes with 1,1,1,5,5,5-hexafluoro-2,4-pentanedione, S Malik, **K Jakhar**, D. Singh, S. Dalal, A. Hooda, K. Nehra, S. Kumar, R.S. Malik and P. Kumar, *Luminescence*, 2024, 39(7), e4810. <https://doi.org/10.1002/bio.4810>
 45. Synthesis and photoluminescent studies of orange-red emissive samarium(III) complexes with 1,1,1-trifluoro-5,5-dimethyl-2,4-hexanedione and 2,2'-bipyridine and its distinctive analogous, S. Redhu, D. Singh, A. Hooda, A. Dalal, V. Aggarwal, **K. Jakhar**, S. Kumar, R. S. Malik, P. Kumar and J. Sindhu, *Inorganica Chimica Acta*, 2024, 572, 122306. <https://doi.org/10.1016/j.ica.2024.122306>
 46. Design and synthesis of isatin-tagged isoniazid conjugates with cogent antituberculosis and radical quenching competence: In-vitro and in-silico evaluations, R Gavadia, J. Rasgania, N. Sahu, M. Varma-Basil, V. Chauhan, S. Kumar, S. Mor, D. Singh and **K. Jakhar**, *Chemistry & Biodiversity*, 2024, 21(10), e202400765. <https://doi.org/10.1002/cbdv.202400765>
 47. Indole analogs as potential anti-breast cancer agents: Design, synthesis, in-vitro bioevaluation with DFT, molecular docking and ADMET studies, R. Gavadia, J. Rasgania, N. Sahu, S. Nimesh, L. Loveleen, S. Mor, D. Singh and **K. Jakhar**, *Journal of the Indian Chemical Society*, 2024, 101(11), 101404. <https://doi.org/10.1016/j.jics.2024.101404>
 48. Tuning emissive color of trivalent terbium ion through environmental factors: optoelectronic insights from theoretical, spectral and computational studies, V. Aggarwal, D. Singh, S. Bhagwan, R. K. Saini, **K. Jakhar**, S. Kumar, P. Kumar and J. Sindhu, *RSC Advances*, 2024, 14, 39569-39587. <https://doi.org/10.1039/D4RA05334F>
 49. Exploring the influence of emissive centers in mono and dinuclear europium(III) complexes for advance lighting applications: Synthesis, characterization and computational modeling, V. Aggarwal, D. Singh, S. Bhagwan, R. K. Saini, **K. Jakhar**, R. S. Malik, P. Kumar and J. Sindhu, *Journal of Molecular Structure*, 2025, 1324, 140841. <https://doi.org/10.1016/j.molstruc.2024.140841>
 50. Optimizing europium(III) ion luminescence via β -diketone and auxiliary ligands: analysis of optoelectronic features and Judd-Ofelt parameters, V. Aggarwal, D. Singh, A. Hooda, **K. Jakhar**, S. Kumar, R. S. Malik, and P. Kumar, *Chemical Physics Letters*, 2025, 876, 142244. <https://doi.org/10.1016/j.cplett.2025.142244>

51. Ancillary ligand-dependent photophysical modulation in Tb(III) complexes with halogenated diketones, S. Malik, **K. Jakhar**, D. Singh, S. Redhu, V. Aggarwal, S. Kumar, R. S. Malik, and P. Kumar, *Inorganic Chemistry Communications*, 2025, 181, 115231. <https://doi.org/10.1016/j.inoche.2025.115231>
52. Samarium(III) complexes as potential orange red light emitters: A comprehensive study on the influence of coordination environment, S. Malik, **K. Jakhar**, D. Singh, S. Dalal, S. Redhu, S. Kumar, P. Kumar, and J. Sindhu, *Journal of Molecular Structure*, 2026, 1349, 143870. <https://doi.org/10.1016/j.molstruc.2025.143870>
53. Brominated β -diketone-driven luminescence in europium(III) complexes: Insights from spectroscopic, DFT and Judd-Ofelt analysis, S. Malik, **K. Jakhar**, D. Singh, P. kumar, S. Kumar, R. S. Malik, and P. Kumar, *Emergent Materials*, 2025. <https://doi.org/10.1007/s42247-025-01219-0>
54. Optimizing europium(III) ion luminescence via β -diketone and auxiliary ligands: analysis of optoelectronic features and Judd-Ofelt parameters, S. Malik, **K. Jakhar**, D. Singh, S. Dalal, V. aggarwal, S. Kumar, P. Kumar, and J. Sindhu, *Material Advances*, 2025, DOI: 10.1039/D5MA00632E