

DEPARTMENT OF CHEMISTRY

Profile Dr. Rajesh Kumar Malik

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Research fields:

- Analytical Chemistry
- Amperometric determination of Coinage and Platinum Metals With Organic Sulphur compounds
- Luminescent materials/Nano phosphors

Number of Research Students 1+1+1+1/2+1/2=04

1. Educational qualifications

Degree	Year of passing	University/ Institute
Ph. D	1994	M. D. University, Rohtak, Haryana
M. Sc.	1991	M. D. University, Rohtak, Haryana
B. Sc	1988	M. D. University, Rohtak, Haryana

2. Career profile

Designation	Institute served	Duration	
		From	To
Asst. Professor	A.I.J.H.M College, Rohtak	6August 2008	30April, 2010
Asst. Professor	Department of Chemistry, M.D. University, Rohtak	1 st May, 2010	Till now

3. Life Member of Indian Council of Chemists & Indian Science Congress

4. Publications during Ph. D

Annexure-1

5. Participation in conferences	Annexure-2
6. International Conferences	Annexure-3
7. Workshops attended	Annexure-4
8. Seminars attended	Annexure-5
9. Courses Attended	Annexure-6
10. Participated as Organizer	Annexure-7
11. Publications in Service	Annexure-8

List of the publications

Annexure-I

1. O.P. Agrawal K.K. Verma, S.P. Khatkar and Rajesh Malik,
Amperometric Trace Determination of Cu (II), Ag(I), Au(III), Pd(II) and Pt (IV) with 2-Mercapto and 3-Mercaptopropanoic acids, Asian journal of Chemistry, Vol. 6, No.4(1994), 911-916.
2. O.P. Agrawal, S.P. Khatkar and Rajesh Malik,
Amperometric Trace Determination of Rh(III), Os(III) and Ir(III) with 2-and 3-Mercaptopropanoic acids, SAEST, Vol. 31, No. 4(1996), 147-153.
3. O.P. Agrawal, S.P. Khatkar and Rajesh Malik,
Amperometric Determination of Metal Ions with Thioacids – Copper, Silver, Gold, Palladium and Platinum with Thioacetic acid J. Electrochem Soc., India, Vol. 47-1 (1998), 71-74.
4. O.P. Agrawal, K.K. Verma, S.P. Khatkar and Rajesh Malik,
Amperometric Trace Determination of Ir (III). Proc. 81st Ind. Sc. Cong. Part III (Abstracts).
5. O.P. Agrawal, K.K. Verma, S.P. Khatkar and Rajesh Malik,
Amperometric Trace Determination of Ru(III) with the help of 2-mercaptopropanoic acid. Vijana Parishad Anusandhan Patrika; Vol. 36 NO. 4(1993), 261-265.
6. O.P. Agrawal, S.P. Khatkar & Rajesh Malik,
Exploitation of Maximum in the Metal Wave for the Amperometric Determination of Small Amounts of Pt.(IV). Journal of Scientific & Industrial Research, Vol. 57, September, (1998),536-538.
7. O.P. Agrawal S.P. Khatkar, Dayawati and Rajesh Kumar Malik,
Amperometric Trace Determination of Ru(III), Rh(III) and Os(VIII) with Ethanedioic Acid. SAEST, Vol. 33, NO. 1 (1998) 28-31.

National Conferences Attended

Annexure- II

- Proceedings of the 81st Session of the Indian Science Congress Jaipur in **1994** and **paper presented** entitled, Amperometric Trace Determination of Ir(III).
- 6th National Conference on Thermodynamics of Chemical and Biological Systems (NCTCBS-2011), organized by Dept. of Chemistry, M.D.U. Rohtak under the Auspices of The Indian Thermodynamics Society from **Nov. 2-4, 2011**.
- 2nd National Conference on Recent Advances in Chemistry and their Impact on Environment organized by Arya P.G. College, Panipat, Sponsored by D.G. Higher Education, Haryana & Ministry of Science & Technology, New Delhi. **(Paper Presented) February 4-5, 2012**
- National Conference on Global Challenges in Chemical Sciences organized by Dept. of Chemistry, K.U. Kurukshetra, Sponsored by U.G.C. **(Paper Presented) September 22-23, 2012**.
- National conference on Advances of Chemistry, organized by Dept. of Chemistry MDU Rohtak on **1-2 March 2013**. **Paper presented** "Metalloid compounds as Drugs".
- 3rd National Conferences on Advances in Chemical and Environmental Sciences organized by Arya PG College Panipat on **Feb 27-28 2014**. Sponsored by DGHE Haryana and DST New Delhi. **Paper presented**.
- National conference on Advanced scientific development in chemical sciences-2014. Organized by DCRUT Murthal, on **March 14 ,2014**. **Paper presented**.
- 4th National Conference on Recent Advances in Chemical and Environmental sciences, Organized by Arya P.G. college Panipat HR, on **feb 27-28 ,2015**. Sponsored by DST New Delhi. **Paper presented**.
- National conference on Science & Technology for Indigenous Development in India. Organized by ISCA-Haridwar Chapter on **28-30 september 2015**. **Paper presented**.
- National conferences on Recent Advances in Science & Technology , organized by Arya PG College Panipat on **27-28 Feb.2016**. Sponsored by DGHE Haryana. **(Paper presented)**.
- National Conference on Latest Advancements in Physical Sciences and Life Sciences sponsored by Indian National Science Academy (INSA), New Delhi, organized by Meerut College, Meerut on **18-19 March, 2017**. **(Paper presented)**.
- 6th National conference on Chemical & environmental Sciences: Emerging Dimensions & Challenges ahead, organized by Arya PG College Panipat on **1st April 2017**. Sponsored by DGHE Haryana . **Paper presented**.
- 1st National conference of Indian Science Congress Association – Rohtak Chapter on "Science & Technology for Sustainable Development" (NCSTSD – 2019) organized by Chemistry Department, M.D. University, Rohtak on **Feb. 12-13, 2019**. **Paper presented** "Synthesis, Structural and Photoluminescent Properties of Trivalent Samarium Doped Aluminate Nanophosphor".

- International Conference on Energy, Environment and Electrochemistry, 10-12 February, 1993 Karaikudi – India **paper presented** entitled, Amperometric Determination of Cu(II), Ag(I), Au(III) and Pd(II) with 3-Mercaptopropanoic Acid.
- International Conference on Recent Advances in Chemical Sciences (Novel Molecules for Diagnosis and Therapeutics) organized by Arya P.G. College, Panipat sponsored by DHE Haryana and CSIR, New Delhi. **(Paper Presented) February 24-26, 2013**
- International Conference on Advances in Agricultural, Biological and Applied Sciences for Sustainable Future (ABAS-2018) organized by Subharti University, Meerut on **20-22 Oct., 2018. Paper presented** “Synthesis and Biological Evaluation of new Pyrimidines”.
- International Conference on Innovations in Chemical, Biological & Environmental Sciences, organized by Arya PG College, Panipat on **27-28 Feb, 2019. Paper presented** “Synthesis of Benzimidazole and their Biological Activity”.

Workshops Attended:

Annexure-4

- One-day National Workshop on Recent Trends in Chemistry-2011 (RTC-2011) organized by Dept. of Chemistry, DCRUST, Murthal on **29th Sept., 2011.**
- National Workshop on Current Perspectives in Advance Material Science organized by Pt. Neki Ram Sharma Government College, Rohtak under the auspices of DHE, Haryana, **February 8-9, 2012**
- Workshop on Technology Development and Transfer to Industry-Challenges & Opportunities, organized by C. C. S. U., Meerut on **March 31, 2015.**
- National workshop on **Research Methodology in Science & Social Science**, organized by Meerut College, Meerut from **12th to 18th June, 2016**, sponsored by United Service Institution of India (USI), New Delhi.
- One Day National Workshop on “Analytical Tools of Chemistry” organized by MKM College for Girls , Hodal on 1st May 2019. Participated as **Resource Person.**

- 1st National Seminar on Microbes and Resource Management, organized by Association of Microbiologists of India-Rohtak Unit, M.D.U. Rohtak on **22nd Oct., 2011.**
- Two Days National Seminar on Scientific Development sponsored by DGHE Haryana, For Human Welfare: Promises and Concerns, organized by JVMGRR, College, Dadri on **10-11 Feb, 2012. Paper presented** “Modern Method for Monitoring Air Pollution.
- DHE Sponsored National Seminar on “Chemistry: Our Life Our Future”, organized by G.V.M. Girls College, Sonapat on **12 March, 2012.**
- National Seminar on “Haryana in National Perspective” organized under the auspices of UGC’s Special Assistance Programme, Dept. of Economics, M.D.U. Rohtak on **14-15 March, 2012.**
- 2nd National Seminar on Microbes in Human Welfare, organized by Dept. of Microbiology, M.D.U. Rohtak on **24th March, 2012.**
- National Seminar on Interdisciplinary Approach in Science in Emerging Scenario (NSIES-2013), sponsored by DGHE Haryana, Panchkula on **March 16, 2013.**
- National Seminar on India-Pakistan Relations: Issues and Challenges, Sponsored by: Indian Council of Social Science Research, New Delhi on **12-13 Sept., 2015. Paper presented** “Indo-Pak Relations and Kashmir Problem”.
- National Seminar on India’s Internal Security Challenges, sponsored by ICSSR, New Delhi on **26 March, 2017**, organized by Allahabad State University, Allahabad in collaboration with ARIDSS, Meerut College, Meerut. **Paper presented** “Advancement of Technology to Counter Internal Problem.”
- National Seminar on Innovative Techniques in Scientific Research and Skill Development, sponsored by U.G.C. under C.P.E. on **28-29 Jan, 2018. Paper presented** “Green Chemistry

Courses Attended

Annexure-6

- Orientation Course at B.P.S. Mahila Vishwavidyalaya Khanpur Kalan, Sonapat from 13th **December, 2010 to 11th January, 2011.** Grade-A, NO. UGC/ASC/11/3739.
- Refresher Course in Chemistry with grade “A” organized by the UGC-ASC, Jamia Millia Islamia, New Delhi from **18 Nov. to 7th Dec., 2013**, sponsored by UGC.
- Interdisciplinary Refresher Course in Research Methodology for Science and Social Science with grade “A”, organized by Meerut College, Meerut from **10th June to 30th June 2017** under UGC, CPE, Meerut College, Meerut.
- Two Week Capacity Building Programme from 12th March to 24th March 2019, organized by FDC in M.D.U. Rohtak as per UGC notification.

Participated as Organizer

annexure-7

- Science Conclave 2011, organized by M.D.U. Rohtak and DST, Govt. of Haryana from **Dec. 2-3, 2011.** As **Organizer**
- National Conference on Advances in Chemical Sciences (ACS-2013) organized by Department of Chemistry, M.D. University, Rohtak sponsored by Indian Society of Analytical Scientists –Delhi Chapter (ISAS-DC). (**Organizer**) **March 1-2, 2013**
- Science Conclave 2014, organized by M.D.U. Rohtak and DST, Govt. of Haryana from **Feb. 22-23, 2014.** As **Organizer**
- National Seminar on India-China Bilateral Relations, organized by Meerut College, Meerut, sponsored by ICSSR, New Delhi on **1 and 2 March, 2015.** Participated as **Co-Convener.**
- National Conference on Recent Advances in Chemical Sciences NCRACS-2018, organized by Dept. of Chemistry, M.D. University, Rohtak on **March 7, 2018.** Participated as **organizer.**
- National Seminar on Recent Development in Science and Technology on **19 Feb 2017.** Sponsored by ARIDSS New Delhi, organized by Meerut College Meerut. Participated as **Chairperson.**
- 1st National Conference of Indian Science Congress Association – Rohtak Chapter on “Science and Technology For Sustainable Development” on 12th and 13th February 2019 held at Chem. Dept. M.D.U. Rohtak. Participated as **Organizer**
- 1st National conference of Indian Science Congress Association – Rohtak Chapter on “Science & Technology for Sustainable Development” (NCSTSD – 2019) organized by Chemistry Department, M.D. University, Rohtak on **Feb. 12-13, 2019** As **Organizer**

- One day National Workshop on “Analytical Tools of Chemistry” on 1st May 2019 , organized by KMK Group of Colleges for Girls . Participated as **Resource person** and delivered talk on topic Applications of NMR to Inorganic Chemistry.
- 2nd National Conference in Association with ISCA – Rohtak Chapter sponsored by UGC-SAP on “Science and Technology For Rural Development” on **14th and 15th October 2019** held at Chem. Dept. M.D.U. Rohtak. Participated as **Organizer**
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Publications in Service:

Annexure-8

8. Jitender Kumar , **Rajesh Kumar Malik** , Sapna Garg and K.K.Verma, “Study on the reducing properties of some diaryl ditellurides” in Indian J. Chem. Soci. Vol.11(3) 2013,1256-1260 . **ISSN-0019-452 I.F=1**
9. Jitender Kumar , **Rajesh Kumar Malik** and K.K. Verma, “Study on the Pyrazine Complexes of some Diaryltellurium Dihalides” in Oriental Journal of Chemistry 2013,Vol.29(4) 1339-1349. **ISSN -0970-020X**
10. Jitender Kumar, **Rajesh Kumar Malik** and Neelam Kumari, “An Efficient Solvent Free Synthesis of Coumarins via Solid Phase Pechmann Reaction”. in Chemical science Transaction **2015**,4(4), 1092-1094. **ISSN : 2278-3458. I.F=.7**
11. S.K Dewan, Anju and **Rajesh Kumar Malik** “Synthesis of tetra ketones from 5,5-dimethylcyclohexane-1,3-diones and arylaldehydes in water in presence of sodium bicarbonate, sodium sulphate, MgSO₄, NaCl, sodium luryl sulphate, BaCl₂ polyethyleneglycol and alumina in excellent yields with and without the assistance of microwaves”. in Achievers of Applied Science Research , **2016**,8(1);1-6. **ISSN; 0975-508X** Coden(USA)AASRC9
12. S.K Dewan, Anju and **Rajesh Kumar Malik** “Synthesis of 2-(benzylidene)-5,5-dimethylcyclohexane-1,3-diones and 2-(benzylidene)-malononitriles by

condensation of dimedone and malononitrile with arylaldehyde in the presence of LiCl, CH₃COONa, MgSO₄, BaCl₂, CH₃COOZn, NaCl, alanine, Na₂SO₄, (sodium sulphate+alanine) catalysts in high yields at room temperature in aqueous medium.” in *Achievers of Applied Science Research*, **2016**, 8(3);29-33. **ISSN; 0975-508X** Coden(USA)AASRC9.

13. **Rajesh Kumar Malik** “Synthesis of Novel 1,5-Benzothiazepine as CNS Agents” in *Acta Ciencia India*, Vol. XLIIIC, No.2, 234-240(2017), ISSN-025-7338 (UGC No.605)
14. Rajesh Kumar Malik, Jitender and Surendera, “Synthesis and Characterization of tris-(4-phenoxyphenyl)amine by Conventional method,” in *Chemical science Transaction* **2017**, 6(1), 8-12. **ISSN : 2278-3458. I.F =.7**
15. **Rajesh Kumar Malik** and Anuradha, “Synthesis of Fluorescent Conjugated Polyacrylic acid” in *Journal of Applied Chemistry*, Vol.9 No.1(2018) 7-9. **ISSN 0976-7355**
16. **Rajesh Kumar Malik** and Ashima Malik “Confined Space in Biomolecules” in *Journal of Applied Chemistry*, Vol.9 No.1(2018) 21-25. **ISSN 0976-7355.**
17. Anju Hooda, S.P.Khatkar Avni Khatkar, **Rajesh Kumar Malik** and V.B Taxak, “Combustion Synthesis, Judd-Ofelt parameters and optical properties of color tunable Ba₃Y₄O₉:Eu³⁺ nanophosphor for near-UV based WLEDs” in *Journal of Material sciences*. **Accepted on 21st march 2019, manuscript #JMSE-D-04690R2.**
18. Anju Hood, S.P. Khatkar, Avni Khatkar, **R.K. Malik**, Jyoti Dalal, Sushma Devi, V.B.Taxak Crystal structure, synthesis and photoluminescent properties of a reddish-orange light emitting SrGdAlO₄: Sm³⁺ nanophosphor in *Journal of Materials Chemistry and Physics* DOI: <https://doi.org/10.1016/j.matchemphys.2019.04.05>. 232(2019)39-48. **I.F. 2.73.**
19. Hooda, A., **Khatkar, S.P.**, Khatkar, A, Malik, R., Devi, S., Dalal, J., Taxak, V.B. Combustion synthesis, Judd-Ofelt parameters and optical properties of color tunable Ba₃Y₄O₉: Eu³⁺ nanophosphor for near-UV based WLEDs. of *Mater. Sci.: Mater. in Electronics*, (2019) In Press. **I.F. 1.569.**
20. Hooda Anju, Khatkar S.P, **Malik R.K**, Khatkar Avni, Taxak V. B, Reddish-orange light emission via combustion synthesized Ba₃Y₄O₉: Sm³⁺ nanocrystalline phosphor upon near ultraviolet excitation *Journal of Luminescence* **217**, January (2020) P-116806. **I.F.=2.96**