Curriculum Vitae

Dr. SANDEEP KUMAR
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Objective

Seeking challenging career in Teaching Sector to get a position of responsibility, with honesty, loyalty, good relationship and best performance, and translate my experience, knowledge, skills and abilities into value for an organization. I am Qualified Results-Oriented key performer with my positive attitude and performance.

Designated as **Assistant Professor** in **J.C Bose University of Science & Technology, YMCA, Faridabad, Haryana** since **April 2, 2021.**

Educational Qualifications

Xth from **H.B.S.E**. in **2004** [Subjects: English, Hindi, Mathematics, Science, Social Science, Physical Education]
XIIth from **C.B.S.E**. in Medical in **2006** [Subjects:English, **Chemistry**, Physics., Biology, Physical Education]
B.Sc. from **M.D.U.** in Medical in 2010 [Subjects: **Chemistry**, Zoology, Botany, English, Sanskrit]
M. Sc. from **G.J.U. S & T,** Hisar in **2012** [Specialization: **Physical Chemistry**]

CSIR NET-JRF in Dec, 2012 with 81 rank.
GATE qualified in year 2013 in Chemistry**.**
One month training on cyclic voltameter in CSIR – Central Electro Chemical Research Institute Karaikudi Tamil Nadu.

Ph.D from **Panjab University, Chandigarh** in **2020 [Title**: **"LANTHANIDE-BASED NANOPARTICLES FOR EFFICIENT OPTICAL, PHOTOLUMINESCENT AND ELECTROCHEMICAL SENSING"]**

Research Paper Published:

1. Glycol modified gadolinium oxide nanoparticles as a potential template for selective and sensitive detection of 4-nitrophenol, S. Chaudhary, S. Kumar, S. K Mehta, Journal of Materials Chemistry C 3 (34), 8824-8833 **(I.F- 6.7)**

2. Potential prospects for carbon dots as a fluorescence sensing probe for metal ions, S Chaudhary, S. Kumar, B. Kaur, S. K. Mehta, RSC advances 6 (93), 90526-9053 **(I.F- 3.9)**

3. Europium-doped gadolinium oxide nanoparticles: A potential photoluminescencent probe for highly selective and sensitive detection of Fe3+ and Cr3+ ions, S. Chaudhary, S. Kumar, A. Umar, J Singh, M. Rawat, S. K. Mehta, Sensors and Actuators B: Chemical 243, 579-588 **(I.F- 8.4)**

4. A comparative multi-assay approach to study the toxicity behaviour of Eu2O3 nanoparticles, S. Chaudhary, P. Sharma, S. Kumar, S. A. Alex, R. Kumar, S. K. Mehta, ... , Journal of Molecular Liquids 269, 783-795 **(I.F- 6)**

5. Systematic enumeration and proficient chemical sensing applications of Eu3+@ CeO2 nanocrystals, S. Chaudhary, S. Kumar, S. K. Mehta, Materials Science and Engineering: C 96, 263-271 **(I.F- 7.9)**

6. Ethylene glycol functionalized gadolinium oxide nanoparticles as a potential electrochemical sensing platform for hydrazine and p-nitrophenol, S. Chaudhary, S. Kumar, S. Kumar, G. R. Chaudhary, S. K. Mehta, A. Umar, Coatings 9 (10), 633 **(I.F- 3.4)**

7. Fabrication of water soluble and luminescent Eu2O3 nanoparticles for specific quantification of aromatic nitrophenols in aqueous media, S. Chaudhary, S. Kumar, S. K. Mehta, A. Umar, M. A. Khan, Chemical Physics Letters 736, 136799 **(I.F- 2.8)**

8. Photocatalytic activity of α-Fe2O3@ CeO2 and CeO2@ α-Fe2O3 core-shell nanoparticles for degradation of Rose Bengal dye, S. Singh, A. Kumar, N. Kataria, S. Kumar, P. Kumar, Journal of Environmental Chemical Engineering 9 (5), 106266 **(I.F- 7.7)**

9. Nanomaterials photocatalytic activities for waste water treatment: a review, P. Singh, B. Mohan,, V. Madaan, R. Ranga, P. Kumari, S. Kumar, V. Bhankar, ..., Environmental Science and Pollution Research 29 (46), 69294-69326, **(I.F- 5.8)**

10. Assessment of biomass-derived carbon dots as highly sensitive and selective templates for the sensing of hazardous ions, P Singh, S Kumar, P Kumar, N Kataria, V Bhankar, K Kumar, R Kumar, ..., Nanoscale 15 (40), 16241-1626 **(I.F- 6.7)**

11. Spinel ferrites/metal oxide nanocomposites for waste water treatment, Sonia, H. Kumari, Suman, S. Chahal, S. Devi, S. Kumar, S. Kumar, P. Kumar, ..., Applied Physics A 129 (2), 91 **(I.F- 2.9)**

12. Plant-mediated synthesis of nanoparticles and their applications: A review, N. Rani, P. Singh, S. Kumar, P. Kumar, V. Bhankar, K. Kumar, Materials Research Bulletin, 112233 **(I.F- 6.7)**

13. Plastic waste-derived carbon dots: insights of recycling valuable materials towards environmental sustainability, Arpita, Parmod Kumar, Navish Kataria, Nishita Narwal, Ravi Kumar ..., Current Pollution Reports **(I.F- 7.3)**

14. Assessing the biomass-based carbon dots and their composites for photocatalytic treatment of wastewater, Permender Singh , Neeru Rani , Sandeep Kumar , Parmod Kumar , Brij Mohan ... Journal of Cleaner Production **(I.F- 11.1)**

15. Recent advancement in nanotechnology for the treatment of pharmaceutical wastewater: sources, toxicity, and remediation technology, S Kumar, S Yadav, N Kataria, AK Chauhan, S Joshi, R Gupta, P Kumar, ..., Current Pollution Reports 9 (2), 110-142 **(I.F- 7.3)**

16. A review on photocatalysis used for wastewater treatment: dye degradation, H. Kumari, Sonia, Suman, R. Ranga, S. Chahal, S. Devi, S Sharma, ..., Water, Air, & Soil Pollution 234 (6), 349 **(I.F- 2.9)**

17. Magnetic Fe2O3/CNT nanocomposites: Characterization and photocatalytic application towards the degradation of Rose Bengal dye, S. Devi, S. Chahal, S. Singh, P .Kumar, S. Kumar, A. Kumar, V. Kumar, Ceramics International 49 (12), 20071-20079 **(I.F- 5.2)**

18. Recent advancement in nanomaterials for the detection and removal of uranium: a review, N. Rani, P. Singh, S. Kumar, P. Kumar, V. Bhankar, N. Kamra, K. Kumar, Environmental Research, 116536 **(I.F- 5.8)**

19. Morphology mediated photocatalysis and room temperature ferromagnetism in cerium oxide, S. Chahal, S. Singh, KKH De Silva, A. Kumar, S. Kumar, L. Kumar, ..., Vacuum 215, 11228 **(I.F- 4)**

20. Biogenic synthesis of *Allium cepa* derived magnetic carbon dots for enhanced photocatalytic degradation of methylene blue and rhodamine B dyes, P. Singh, S. Kumar, K. Kumar, Biomass Conversion and Biorefinery, 1-19 **(I.F- 4.0)**

21. Enhanced photocatalytic degradation of organic dye by CeO_2/CNT/GO hybrid nanocomposites under UV light for wastewater treatment, S. Chahal, L. Phor, A. Kumar, S. Kumar, S. Kumar, R. Kumar, P. Kumar, Environmental Science and Pollution Research 30 (60), 124964-124975 **(I.F- 5.8)**

22. Carbon-based nanomaterials: systematic enumeration and proficient template for detection and remediation of hazardous pollutants, N. Kataria, V. K Garg, P. Kumar, C. Han, I. Anastopoulos, S. Kumar, Environmental Science and Pollution Research 30 (60), 124829-124831 **(I.F- 5.8)**

23. Carbon dots as potential candidate for photocatalytic treatment of dye wastewater, T. Tripti, P. Singh, N. Rani, S. Kumar, K. Kumar, P. Kumar, Environmental Science and Pollution Research, 1-28 **(I.F- 5.8)**

24. Europium-doped cerium oxide nanoparticles: investigating oxygen vacancies and their role in enhanced photocatalytic and magnetic properties, A. Ankita, S. Chahal, S. Singh, S. Kumar, P. Kumar, Environmental Science and Pollution Research 31 (1), 1276-1287 **(I.F- 5.8)**

25. Gd doped Cerium Oxide for organic dye degradation and tuning of magnetic properties, Ankita, S. Chahal, S. Singh, L. Kumar, V. Gupta, S. Kumar, S. Kumar, Materials Science and Engineering B **(I.F- 3.7)**

26. Biogenic synthesis of novel N-doped carbon-dots photocatalyst for remediation of wastewater. Diamond and Related Materials: Volume 152, 111974 (Available Online Feb 2025) https://doi.org/10.1016/j.diamond.2025.111974 **(I.F- 5.1)**, Permender Singh, Sandeep Kumar*, Krishan Kumar

27. Efficient α–Fe2O3@ NiO nanocomposites as a photocatalyst for the treatment of hazardous Rose Bengal dye. Physica B: Condensed Matter: Volume 696, 416649 (Available online Oct 2024) https://doi.org/10.1016/j.physb.2024.416649 **(I.F – 2.8),** Seema Devi, Tripta, Ankita, Sandeep Kumar, Ravi Kumar, Vinod Kumar, Ashok Kumar, Omveer Singh, Parmod Kumar

28. Investigation of Magnetism and Photocatalytic Activity Using Biomass-Derived Carbon Dots. Chemistry Select: Volume 10 (1), e202402585 (Published Jan 2025) https://doi.org/10.1002/slct.202402585 **(I.F- 2)**, Tripti, Permender Singh, Sapana Rani, Saurabh, Singh, Lalit Kumar, Vishal Gupta, Sandeep Kumar*, Parmod Kumar

29. Synergistic influence of the hybridization between green carbon dots adorned Psidium guajava extracted zinc oxide for boosted photocatalytic efficiency. Biomass Conversion and Biorefinery: Volume 15, 16 Dec 2024, 18025-18040 (Published Dec 2024) https://doi.org/10.1007/s13399-024-06436-x **(I.F- 4.1)**, Neeru Rani, Sandeep Kumar*, Krishan Kumar

30. Investigation on the impact of green synthesized NC-dots decoration over photocatalytic efficiency of Sg-C3N4/ZnO. Diamond and Related Materials: Volume 151, 111780 (Available online Nov 2024) https://doi.org/10.1016/j.diamond.2024.111780 **(I.F- 5.1),** Permender Singh, Neeru Rani, Vasundhara Madaan, Sandeep Kumar*, Vinita Bhankar, Parmod Kumar, Krishan Kumar.

31. Green synthesis of N-doped-carbon dots/ZnO for enhanced photocatalytic degradation of methylene blue dye: optimization of reaction parameters. Environmental Science and Pollution Research: Volume 31 (54), 63408-63425 (Published Nov 2024). https://doi.org/10.1007/s11356-024-35433-w , Neeru Rani, Sandeep Kumar*, Krishan Kumar

32. Preparation of CeO2@ AC and CeO2@ NF nanocomposites for waste water treatment. Diamond and Related Materials: Volume 149, 111643, (Available Oct 2024) https://doi.org/10.1016/j.diamond.2024.111643 **(I.F- 5.1),** Ankita, Surjeet Chahal, Saurabh Singh, Seema Devi, Vinod Kumar, Sandeep Kumar, Sonia Devi, Parmod Kumar.

33. Pennisteum glaucum-derived carbon dots, synthesized through green approach to degrade Rose Bengal and Methylene Blue dyes photocatalytically. Diamond and Related Materials, Volume 148, 111467 (October 2024) https://doi.org/10.1016/j.diamond.2024.111467 **(I.F- 5.1),** Tripti, Sandeep Kumar*, Parmod Kumar

34. Harnessing carbon dots from parthenium weed for photocatalytic degradation of malachite green and Fe^{3+} ion sensing. Biomass Conversion and Biorefinery: Volume 15, 12699-12712, (Published Sept 2024) https://doi.org/10.1007/s13399-024-06051-w **(I.F- 4.1)**, Arpita, Parmod Kumar, Ravi Kumar, Sandeep Kumar*

35. Biogenic synthesis of hollow carbon dots using cigarette ash for photocatalytic and sensing applications. Surfaces and Interfaces: Volume 52, 104935, (Available Aug 2024) https://doi.org/10.1016/j.surfin.2024.104935 **(I.F- 6.3),** Arpita, Parmod Kumar, Ravi Kumar, Chien-Te Hsieh, Kuan Shiong Khoo, Sandeep Kumar*

36. Enhanced photocatalytic activity of α-Fe2O3/MgO nanocomposites for environmental sustainability. Ceramics International: Volume 50 (13) 24608-24617 (Available April 2024) https://doi.org/10.1016/j.ceramint.2024.04.195 **(I.F- 5.6)**, Seema Devi, Tripta, Suman, Ankita, Ashok Kumar, Saurabh Singh, Vinod Kumar, Sandeep Kumar, Ravi Kumar, Parmod Kumar

37. Hydrothermally synthesised ZnFe2O4/ZnO heterojunction nanocomposites for enhanced RB dye degradation via Z-scheme photocatalysis. Materials Chemistry and Physics: Volume 322,129560 (Available online June 2024) https://doi.org/10.1016/j.matchemphys.2024.129560
(I.F- 4.7), Sonia, Harita Kumari, Surjeet Chahal, Suman, Sandeep Kumar, Mahak, Parmod Kumar, Ashok Kumar

38. S,Cl-doped-C-dots and S-g-C3N4 heterojunction for enhanced photocatalytic remediation of dye-polluted wastewater. Biomass Conversion and Biorefinery: Volume 15, 9251-9269, (Published May 2024) https://doi.org/10.1007/s13399-024-05745-5 **(I.F- 4.1),** Permender Singh, Sandeep Kumar*, Krishan Kumar

39. Biomass-derived carbon dots as significant biological tools in the medicinal field: A Review. Advances in Colloid and Interface science, Volume 328, 103182 (Available Online May 2024) https://doi.org/10.1016/j.cis.2024.103182 **(I.F- 19.3),** Permender Singh, Vinita Bhankar, Sandeep Kumar, Krishan Kumar

40. Biogenic synthesis of novel N-doped carbon-dots photocatalyst for remediation of wastewater. Diamond and Related Materials: 111974, 2025 **(I.F- 5.1)**, Permender Singh, Sandeep Kumar, Krishan Kumar

41. Structural and photocatalytic insights into gadolinium oxide-iron oxide nanocomposites towards efficient environmental remediation. Inorganic Chemistry Communications: 114065, 2025 **(I.F- 5.4)**, Seema Devi, Sandeep Kumar, Ravi Kumar, Vinod Kumar, Ashok Kumar, Gulshan Singh, Parmod Kumar

Book Chapters Published

1. Growth of advanced oxide nanostructure (nanocubes/nanorods/nanoflowers)
2. Advanced membrane technology for the removal of pesticides from water and wastewater
3. Magnetism of Zinc Oxide (ZnO)
4. An Introduction to Carbon Quantum Dots. Green Carbon Quantum Dots: Environmental Applications,
5. Degradation of Organic Pollutants Present in Water Using Green Synthesized Carbon Quantum Dots

Expert Lecture Given

1. On Group Theory in 2018 - School of Basic &Applied Sciences in MAHARAJA AGARSEN UNIVERSITY, Solan.
2. On basic concept of Quantum Mechanics in 2019 - Dyal Singh College, Karnal.

FIP/PDP/Refresher course

1. A One Week Professional Development Program on "Developing Academic Leadership in Universities". The course was organized by the Department of Mathematics, J.C. Bose University of Science and Technology, Y.M.C.A., Faridabad from 28th June to 3rd July 2021.
2. International Conferences 8th One Month Online Faculty Induction Programme organized by UGC-Human resource Development Centre, Jamia Millia Islamia, New Delhi from 15th February to 16th March, 2022
3. Two weeks Offline Refresher Course on "Advanced Instrumentation Techniques (Chemical Sciences, Life Sciences, Pharmaceutical Sciences and Physical Sciences) is being conducted by Malaviya Mission Teacher Training Centre (Erstwhile UGC Human Resource Development Centre) at Guru Jambheshwar, University of Science & Technology, Hisar from 21.11.2024 to 4.12.2024.

International Conferences

1. Presented poster in International Conference on “Interdisciplinary Areas with Chemical Sciences” Organized by the Department of Chemistry, Panjab University, Chandigarh in association with Institute of nanoscience and Technology (INST), Mohali, 30th October -1st November 2013.

2. Participated in international conference on “Nano Science and Technology” organized by Institute of Nano Science and Technology, 2nd-5th march 2014.

3. Presented poster in “Indo-germen bilateral workshop on surfactant and amphiphilic polymers in nanotechnology on the way to smarter formulations” Organized by the Department of Chemistry, Panjab University, Chandigarh,20th-22nd March 2014.

4. Presented poster in International Conference on “Recent Advances in Emerging Technology” organized by Sri Guru Granth Sahib World University, Fatehgarh Sahib, 23th-24th February 2016.

5. Presented poster in “Green Chemistry/Engineering and Technologies for Sustainable Development” Organized by the Department of Chemistry, Panjab University, Chandigarh, 20th-22nd April 2017).

National Conferences

Best poster award by Chemistry Deptt. G.J.U. S.&T., Hisar in national conference on Advanced Physical Methods In Chemical (NCAPMCS-2017) organized on 22th-23th February,2017

1. Presented poster in "50th Annual Convention of Chemists" organized by the Department of Chemistry, Panjab University, Chandigarh, 4th-7th December 2013.

2. Presented poster in "Prof. Ram Chand Paul National Symposium on New Visions in Chemical Science" organized by the Department of Chemistry, Panjab University, Chandigarh, 15th-16th February 2014.

3. Presented poster in "8th Chandigarh Science Congress" organized by the Department of Chemistry, Panjab University, Chandigarh, 15th-16th February 2014.
4. Presented poster in national symposium on "Recent Advances in Chemical Sciences, Panjab University, Chandigarh**,** 18th October 2014.

5. Presented poster in "Asian Network for Natural and Unnatural materials" (ANNUM-3) organized by the Department of Chemistry, Panjab University, Chandigarh, 28th February-2nd March 2015.

6. Presented poster in "Prof. Ram Chand Paul National Symposium on Innovation in Chemical Sciences" organized by the Department of Chemistry, Panjab University, Chandigarh, 20th-21st March 2015.

7. Presented poster in national seminar on "Environmental Management, Sustainable Development and Human Health" organized by Dr. S. S. Bhatnagar University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh, 25th March 2015.

8. Participated in 10th National Conference on "Thermodynamics of Pharmaceutical, Chemical and Biological System" organized by the University Institute of Pharmaceutical Sciences & Department of Chemistry, Panjab University, Chandigarh, 20th-21st November 2015.

9. Presented poster innational Conference on "Organic Synthesis and Catalysis" organized by the Department of Chemistry, G. J. U. S. & T., Hisar, 17th-18th February, 2016.

10. Presented poster in national workshop on Electrochemistry "Under the ageis of UGC INDO-US 21ST Century Knowledge Initiative" organized by the Department of Chemistry, Panjab University, Chandigarh, 24th-25th October, 2016.

Workshops

1) Participated in **5 day** workshop of **GIAN** organized by Chemistry Deptt. Panjab University.

2) Participated in **50thAnnual Convention Of Chemist 2013** organized by Chemistry Deptt. P. U. Chandigarh,on 4th July, 2013.

Instrumentation And Handling:

*Cyclovoltammetry
*I.R [Infra-red]
*U.V.[Ultra-Violet]
*P.L.[Photoluminescence Spectrometer]
*DLS-LS[Dynamic light scattering]
*SEM [Scanning electron microscope]

Personal Details

Name : Dr.Sandeep Kumar
Date of Birth: 27 Jan,1989
Nationality: Indian.
Father Name: Bhola Ram
Mother Name: Bishan Devi
Wife Name: Nisha

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