

List of Publications

Research Articles

1. K. Singh, T. Mandal, U. P. Pandey, and **V. Singh***, Emergence of Fluorescent Glycodots for Biomedical Applications, *ACS Biomaterials Science & Engineering*, **2025**, Just Accepted.
2. S. R. Mishra, T. Mandal, R. N. Senapati, and **V. Singh***, White-Light Emitting Self-Assembled Graphene Quantum Dots from Coal Soot, *Carbon Letters*, **2025**, DOI:10.1007/s42823-025-00860-3.
<https://link.springer.com/article/10.1007/s42823-025-00860-3>
3. T. Mandal, S. R. Mishra, M. Kumar, and **V. Singh***, Emergence of Carbon Dots as Luminescent Solar Concentrator for Building Integrated Photovoltaics, *Sustainable Energy & Fuels*, **2024**, 8, 5638. (Published with outside back cover).
<https://pubs.rsc.org/en/content/articlelanding/2024/se/d4se00806e>
4. S. R. Mishra, T. Mandal, S. Sahu, M. Mishra, R. N. Senapati and **V. Singh***, Biocompatible Fluorescent Graphene Oxide Quantum Dots for Imaging of Drosophila Melanogaster, *ACS Omega*, **2024**, 9, 38916.
<https://pubs.acs.org/doi/10.1021/acsomega.4c05244>
5. T. Mandal, S. R. Mishra, A. Banerjee, G. Firoz, R. Poddar and **V. Singh***, Low-quality Indian Coal Derived Fluorescent Carbon Nano-onions for Tissue Imaging, *ChemistrySelect*, **2024**, 9, e202402666.
<https://chemistry-europe.onlinelibrary.wiley.com/doi/abs/10.1002/slct.202402666>
6. **V. Singh***, T. Mandal, S. R. Mishra, A. Singh and P. Khare, Development of amine-functionalized fluorescent silica nanoparticles from coal fly ash as a sustainable source for nanofertilizer, *Scientific Reports*, **2024**, 14, 3069.
<https://www.nature.com/articles/s41598-024-53122-z>
7. T. Mandal, S. R. Mishra, **V. Singh***, Comprehensive Advances in Synthesis, Fluorescence Mechanism and Multifunctional Applications of Red-emitting Carbon Nanomaterials, *Nanoscale Advances*, **2023**, 5, 5717.
<https://pubs.rsc.org/en/content/articlelanding/2023/na/d3na00447c>
8. T. Mandal, A. K. Ghosh, S. R. Mishra, S. K. Pandey, **V. Singh***, Development of Fluorescent Carbon Nanoparticles from Madhuca Longifolia Flower for Sensitive and Selective Detection of Cr⁶⁺: A Collective Experimental-Computational Approach, *Nanoscale Advances*, **2023**, 5, 4269. *Featured in special regional spotlight collection highlighting top quality papers from India*
<https://pubs.rsc.org/en/content/articlelanding/2023/na/d3na00289f>
9. T. Mandal, S. R. Mishra, K. Singh, H. Agarwalla, R. E. Mastro, M. Kumar, **V. Singh***, Fluorescent carbon nanomaterials from coal and its derivatives: structure, properties, and applications, *Journal of Nanoparticle Research*, **2023**, 25, 125.
<https://link.springer.com/article/10.1007/s11051-023-05780-9>
10. H. Agarwalla, T. B. Das, R. N. Senapati, M. Gangopadhyay, R. E. Mastro, M. Kumar, **V. Singh**, Mercury in coal from southeastern coalfield and mercury partitioning at sub-critical coal-fired power plant, *Journal of Material Cycles and Waste Management*, **2023**, 25, 2632.
<https://link.springer.com/article/10.1007/s10163-023-01679-8#citeas>
11. K. Jahana, **V. Singh**, N. Mehrotra, K. Rathore and V. Verma, Development of Activated Carbon from KOH Activation of Pre-carbonized Chickpea Peel Residue and its Performance for

Removal of Synthetic Dye from Drinking Water, *Biomass Conversion and Biorefinery*, **2023**, 13, 6913.

<https://link.springer.com/article/10.1007/s13399-021-01938-4#citeas>

12. K. S. Rawat, **V. Singh** (equal first-author contribution), C. P. Sharma, A. Vyas, P. Pandey, J. Singh, N. M. Gupta, M. Sachdev and A. Goel, Picomolar Detection of Pb²⁺ by Functionally Modified Fluorescent Carbon Quantum Dots from Watermelon Juice and Their Imaging in Cancer Cells, *Journal of Imaging*, **2023**, 9, 19.
<https://www.mdpi.com/2313-433X/9/1/19>
13. C. M. Pawar, S. Sreenath, V. Dave, P. P. Bavdane, **V. Singh**, V. Verma and R. K. Nagarale, Chemically stable and high acid recovery anion exchange membrane, *Polymer*, **2022**, 251, 124915.
<https://www.sciencedirect.com/science/article/abs/pii/S0032386122004037>
14. N. M. Chola, **V. Singh**, V. Verma and R. K. Nagarale, Green Synthesis and Thermal Encapsulation of Organic Cathode for Aqueous Zn Battery, *Journal of Electrochemical Society*, **2022**, 169, 020503.
<https://iopscience.iop.org/article/10.1149/1945-7111/ac4b85>
15. **V. Singh***, B. Gorbil, S. Chatterjee, P. Sen and V. Verma, Green, Economical Synthesis of Nitrogen Enriched Carbon Nanoparticles from Seaweed Extract and Their Application as Invisible Ink and Fluorescent Film, *Materials Letters*, **2022**, 309, 131446.
<https://www.sciencedirect.com/science/article/abs/pii/S0167577X21021455>
16. **V. Singh***, S. Chatterjee, M. Palecha, P. Sen, B. Ateeq and V. Verma, Chickpea Peel Waste as Sustainable Precursor for Synthesis of Fluorescent Multiwalled Carbon Nanotubes for Bio-imaging Application, *Carbon Letters*, **2021**, 31, 117.
<https://link.springer.com/article/10.1007/s42823-020-00156-8>
17. **V. Singh**, K. S. Rawat, S. Mishra, T. Baghel, S. Fatima, A. A. John, N. Kalleti, D. Singh, A. Nazir, S. K. Rath and A. Goel, Biocompatible Fluorescent Carbon Quantum Dots from Beetroot Extract for in vivo Live Imaging in *C. elegans* and BALB/c Mice, *Journal of Materials Chemistry B*, **2018**, 6, 3366.
<https://pubs.rsc.org/en/content/articlelanding/2018/tb/c8tb00503f#!divAbstract>
18. **V. Singh** and A. K. Mishra, White Light Emission from Mixture of Pomegranate Juice and Carbon Nanoparticles Obtained from the Extract, *Journal of Materials Chemistry C*, **2016**, 4, 3131.
<https://pubs.rsc.org/en/content/articlelanding/2016/tc/c6tc00480f#!divAbstract>
19. **V. Singh** and A. K. Mishra, Green and Cost-effective Fluorescent Carbon Nanoparticles for the Selective and Sensitive Detection of Iron (III) Ions in Aqueous Solution: Mechanistic Insights and Cell Line Imaging Studies, *Sensors and Actuators B: Chemical*, **2016**, 227, 467.
<https://www.sciencedirect.com/science/article/pii/S0925400515307929>
20. **V. Singh** and A. K. Mishra, White Light Emission from an Aqueous Vegetable Cocktail: Application Towards pH Sensing, *Dyes and Pigments*, **2016**, 125, 362.
<https://www.sciencedirect.com/science/article/pii/S0143720815004003>
21. **V. Singh** and A. K. Mishra, White Light Emission from Vegetable Extracts, *Scientific Reports*, **2015**, 5, 11118.
<https://www.nature.com/articles/srep11118>

22. K. Kundu, A. P. Singh, S. Panda, **V. Singh**, R. L. Gardas, and S. Senapati, Study on the Conformation of Entrapped Protein Inside the Reverse Micellar Confinement Based on the Amino Acid Derived Ionic Liquid, *Chemistry Select*, **2018**, 3, 4768.
<https://onlinelibrary.wiley.com/doi/abs/10.1002/slct.201800918>
23. D. Bharathi, B. Siddlingeshwar, R. H. Krishna, **V. Singh**, N. Kottam, D. D. Divakar and A. A. Alkheraif, Green and Cost-effective Synthesis of Fluorescent Carbon Quantum Dots for Dopamine Detection, *Journal of Fluorescence*, **2018**, 28, 573.
<https://link.springer.com/article/10.1007/s10895-018-2218-3>
24. S. Mishra, P. Awasthi, J. Singh, R. K Gupta, **V. Singh**, R. Kant, R. Jeet, D. Goswami and A. Goel, White Light Induced E/Z-Photoisomerization of Diphenylamine-tethered Fluorescent Stilbene Derivatives: Synthesis, Photophysical and Electrochemical Investigation, *Journal of Organic Chemistry*, **2018**, 83, 3669.
<https://pubs.acs.org/doi/abs/10.1021/acs.joc.8b00033>
25. A. P. Singh, K. Kundu, **V. Singh**, R. L. Gardas and S. Senapati, Enhanced Stability and Water Solubilizing Capacity of Water-in-Oil Microemulsions by Protic Ionic Liquids, *Physical Chemistry Chemical Physics*, **2017**, 19, 26132.
<http://pubs.rsc.org/en/content/articlelanding/2017/cp/c7cp04313a#!divAbstract>
26. D. Bharathi, R. H. Krishna, **V. Singh**, N. Kottam and B. Siddlingeshwar, One pot Synthesis of C-dots and Study on its Interaction with Nano ZnO Through Fluorescence Quenching, *Journal of Luminescence*, **2017**, 190, 328.
<https://www.sciencedirect.com/science/article/pii/S0022231316316532>
27. N. Venkatesan, **V. Singh**, P. Rajakumar and A. K. Mishra, Isobenzotriazolophanes: A new Class of Fluorescent Cyclophanes as Sensors for Aromatic Nitro Explosives – Picric Acid, *RSC Advances*, **2014**, 4, 53484.
<http://pubs.rsc.org/en/content/articlelanding/2014/ra/c4ra06320a#!divAbstract>

Patents

1. A Novel Process for the Synthesis of Fluorescent Silica Nanoparticles from Fly Ash, **V. Singh**, H. Agarwalla, R. E. Masto and M. Kumar: *Application No. 202211039599*, Date: 08/07/2022 (Indian Patent)
2. A one-pot, single-step ultrasonication method for preparation of white-light-emitting graphene quantum dots from coal soot, **V. Singh**, S. R. Mishra, T. Mandal: *Application No. 202411019849*, Date: 18/03/2024 (Indian Patent)