



Dr. Alok Kumar Singh

Assistant Professor
Department of Chemistry,
Deen Dayal Upadhyaya Gorakhpur University
Gorakhpur, India
Phone: +91-6393275228
Email: draloksinghchemistry@gmail.com
ORCID ID: 0000-0002-2385-4813



Google Scholar: <https://scholar.google.com/citations?user=DbZYQEMAAAAJ&hl=en>
Faculty Profile: https://erp.ddugu.ac.in/faculty_profile/faculty_profile_1.aspx?uid=303

Research specialization:

Surface-Confined Materials, Metal-polypyridyl Complexes, Photocatalysts, Nanomaterials, Sensors, Multi-stimuli Responsive Smart Materials.

Publications in International Journals: 35

Coord. Chem. Rev. (ELSEVIER)-03 (Published)

Cover Page Article: 02

Highest Impact Factor Publication: Coord. Chem. Rev. (ELSEVIER), Impact factor = 20.6

Patent : 02 (Filed)

Best Five Publications

- ❖ pH-Responsive luminescence sensing, photoredox catalysis and photodynamic applications of ruthenium(II) photosensitizers bearing imidazo[4,5-f][1,10]phenanthroline scaffolds, S. Kumar*, S. Singh, A. Kumar, K.S.R. Murthy, **Alok Kumar Singh***, *Coord. Chem. Rev.*, 2022, 452, 214272 (ISSN: 0010-8545) **Impact factor = 20.6 (*Corresponding author)**
<https://www.sciencedirect.com/science/article/abs/pii/S001085452100546>
- ❖ A ternary Fe(II)-terpyridyl complex-based single platform for reversible multiple-ion recognition, **Alok Kumar Singh***, G. Pandey, K. Singh, A. Kumar, M. Trivedi, V. Singh,* *Dalton Trans.*, 2018, 47, 6386-6393 (ISSN: 1477-9226), **Impact factor = 4.569 (*Corresponding author)**,
<https://pubs.rsc.org/en/content/articlelanding/2018/dt/c8dt00539g>
- ❖ A fast and selective probe for monitoring Pd²⁺ in aqueous medium via the dual-optical readout, A. Kumar, M. Chhatwal, **Alok Kumar Singh***, V. Singh, M. Trivedi, *Chem. Commun.*, 2014, 50, 8488-8490. This paper has been invited for the cover page, (ISSN 1359-7345) **Impact factor = 6.065 (*Corresponding author)**

<https://pubs.rsc.org/en/content/articlelanding/2014/cc/c4cc03891>

- ❖ A sequential logic gate-based “smart probe” for selective monitoring of Cu²⁺, Fe³⁺ and CN⁻/F⁻ via differential analyses, **Alok Kumar Singh***, R. Nagarajan*, *Dalton Trans.*, 2015, 44, 19786-19790 (ISSN 1477-9226) This paper has been invited for the cover page, **Impact factor = 4.569** (*Corresponding author) <https://pubs.rsc.org/en/content/articlelanding/2015/dt/c5dt03567h>
- ❖ A light/pH/multiple ions-driven smart switchable module for computing sequential logic operations via resettable dual-optical readout, **Alok Kumar Singh†**, P. K. Yadav†, N. Kumari, R. Nagarajan, L. Mishra, *J. Mater. Chem. C*, 2015, 3, 12123-12129. (ISSN 2050-7526) **Impact factor = 8.067**, <https://pubs.rsc.org/en/content/articlelanding/2015/tc/c5tc02698a>

Selected Publications (2023-2013)

- ❖ A dual channel rhodamine appended smart probe for selective recognition of Cu²⁺ and Hg²⁺ via “turn on” optical readout, P. K. Sada, A. Bar, A. K. Jassal, **Alok Kumar Singh***, L. Singh, A. Rai*, *Analytica Chimica Acta*, 2023, 1263, 341299. **I. F. = 6.2** (*Corresponding author)
- ❖ A Novel Rhodamine Probe Acting as Chemosensor for Selective Recognition of Cu²⁺ and Hg²⁺ Ions: An Experimental and First Principle Studies, P. K. Sada, A. Bar, A. K. Jassal, P. Kumar, S. Srikrishna, **Alok Kumar Singh***, S. Kumar, L. Singh, A. Rai*, *J. Fluoresc.*, 2023. <https://doi.org/10.1007/s10895-023-03412-y>, **I. F. = 2.7** (*Corresponding author)
- ❖ Recent advances in bi, tri, and tetradentate Schiff base ligands derived from salicylaldehyde as well as its derivatives and their complexes with 3d-block transition metals: Synthesis, Characterization and Applications, M. Kumar, A. K. Singh, **Alok Kumar Singh**, R. K. Yadav, S. Singh, A. P. Singh, A. Chauhan, *Coord. Chem. Rev.*, 2023, 488, 215176. **I. F. = 20.6**
- ❖ Highly Efficient Self-Assembled Activated Carbon Cloth-Templated Photocatalyst for NADH Regeneration and Photocatalytic Reduction of 4-Nitro Benzyl Alcohol, V. Gupta, R. K. Yadav, A. Umar, A. A. Ibrahim, S. Singh, R. Shahin, R. K. Shukla, D. Tiwary, D. K. Dwivedi, **Alok Kumar Singh**, A. K. Singh, S. Baskoutas, *Catalysts* 2023, 13, 666. **I. F. = 4.501**

- ❖ Revolutionizing regeneration of NADH and deoxygenation of sulfide: Harnessing visible light with SDG@TPP composites for powerful synthetic applications, L. Kumari, S. Singh, R. K. Yadav, R. Shahin, T. W. Kim, S. K. Pandey, D. Tiwari, **Alok Kumar Singh**, Satyanath, D.K. Dwivedi, N. K. Gupta, *Mater. Today Commun.*, **2023**, 37, 106862, *I. F.* = **3.8**
- ❖ Photocatalytic oxygenation of sulfide using solar light and ingenious GQDs@AQ catalyst: Mechanistic and synthetic investigations, R. Siddique, R. K. Yadav, S. Singh, R. Shahin, A. K. Dubey, **Alok Kumar Singh**, A. K. Singh, N. K. Gupta, J.O. Baeg, T. W. Kim, *Photochem. Photobiol.*, **2023**, <https://doi.org/10.1111/php.13859>, *I. F.* = **3.3**
- ❖ pH-Responsive luminescence sensing, photoredox catalysis and photodynamic applications of ruthenium(II) photosensitizers bearing imidazo[4,5-f][1,10]phenanthroline scaffolds, S. Kumar*, S. Singh, A. Kumar, K.S.R. Murthy, **Alok Kumar Singh***, *Coord. Chem. Rev.*, **2022**, 452, 214272, *I. F.* = **24.833** (*Corresponding author)
- ❖ Rational Design of graphitic Carbon Nitride Catalytic-Biocatalytic As a Photocatalytic Platform for Solar Fine Chemical Production From CO₂, Satyam Singh, R. K. Yadav, T. W. Kim, C. Singh, P. Singh, A. P. Singh, **Alok Kumar Singh**, A. K. Singh, J. O. Baeg, S. K. Gupta, *React. Chem. Eng.*, **2022**, 7, 1566-1572, *I. F.* = **5.2**
- ❖ Applications, nanotoxicity, environmental aspects and future challenges of nanotechnology in the oil and gas industry: A Review, A. K. Singh, **Alok Kumar Singh**, S. Shankar, *Rasayan J. Chem.*, **2022**, 15, 1943-1954, *I. F.* = **1.23**
- ❖ An ensemble of Zn²⁺ with a rhodamine B-3-allylsalicylaldehyde hydrazone as novel photosensitive material: Photochromism, photopatterning, photoprinting and molecular logic gates, A. Rai‡, **Alok Kumar Singh‡**, A. K. Sonkar, K. Tripathi, L. Mishra (‡These authors contributed equally to this work) *Spectrochim. Acta Part A*, **2019**, 216, 1-6 *I. F.* = **4.831**
- ❖ A ternary Fe(II)-terpyridyl complex-based single platform for reversible multiple-ion recognition, **Alok Kumar Singh,*** G. Pandey, K. Singh, A. Kumar, M. Trivedi, V. Singh,* *Dalton Trans.*, **2018**, 47, 6386-6393, *I. F.* = **4.569** (*Corresponding author)
- ❖ A quick and selective rhodamine based “smart probe” for “signal on” optical detection of Cu²⁺ and Al³⁺ in water, cell imaging, computational studies and solid state analysis, A. Rai‡, **Alok Kumar Singh‡**, K. Tripathi, A. K. Sonkar, B. S. Chauhan, S. Srikrishna, T. D. James, L. Mishra, (‡These authors contributed equally to this work) *Sens. Actuators, B*, **2018**, 266, 95-105 *I.F.* = **9.221**

- ❖ Molecular sensors confined on SiO_x substrates, V. Singh P. C. Mondal, **Alok Kumar Singh**, M. Zharnikov, *Coord. Chem. Rev.*, **2017**, 330, 144–163, *I. F. = 20.6*
- ❖ Pyridyl substituted 4-(1,3-Dioxo-1H,3H-benzo[de]isoquinolin-2-ylmethyl)-benzamides with aggregation enhanced emission and multi stimuli-responsive properties, A. K. Srivastava,‡ **Alok Kumar Singh**‡ N. Kumari, Richa Yadav, A. Gulino, A. Speghini, R. Nagarajan, L. Mishra, (*‡These authors contributed equally to this work*) *J. Lumin.*, **2017**, 182, 274–282 *I. F. = 4.171*
- ❖ A smart switchable module for detection of multiple-ions *via* turn-on dual-optical readout and their cell-imaging studies, A. Rai,‡ **Alok Kumar Singh**‡ A. K. Sonkar, A. Prakash, J. K. Roy, R. Nagarajan*, L. Mishra*, (*‡These authors contributed equally to this work*) *Dalton Trans.*, **2016**, 45, 8272-8277, *I.F. = 4.569*
- ❖ A light/pH/multiple ions-driven smart switchable module for computing sequential logic operations via resettable dual-optical readout, **Alok Kumar Singh**‡, P. K. Yadav‡, N. Kumari, R. Nagarajan, L. Mishra, *J. Mater. Chem. C*, **2015**, 3, 12123-12129. (ISSN 2050- 7526) *I.F. = 8.06*
- ❖ A sequential logic gate-based “smart probe” for selective monitoring of Cu²⁺, Fe³⁺ and CN⁻ /F⁻ via differential analyses, **Alok Kumar Singh***, R. Nagarajan*, *Dalton Trans.*, **2015**, 44, 19786-19790 (ISSN 1477-9226) This paper has been invited for the cover page, *I.F. = 4.569*
- ❖ A fast and selective probe for detection of CN⁻ and F⁻ in water along with a sequential molecular logic circuit via resettable optical readout, **Alok Kumar Singh***, *RSC Adv.*, **2015**, 5, 30187–30191. (ISSN 2046-2069) *I.F. = 4.036*
- ❖ A fast and selective probe for monitoring Pd²⁺ in aqueous medium via the dual-optical readout, A. Kumar, M. Chhatwal, **Alok Kumar Singh***, V. Singh, M. Trivedi, *Chem. Commun.*, **2014**, 50, 8488-8490. This paper has been invited for the cover page, (ISSN 1359-7345) *I.F. = 6.222*
- ❖ A ternary memory module using low-voltage control over optical properties of monolayer, A. Kumar, M. Chhatwal, P. C. Mondal, V. Singh, **Alok Kumar Singh**, A. Gulino*, R. D. Gupta*, *Chem. Commun.*, **2014**, 50, 3783-3785. This paper has been selected for the inside front cover page of the same issue, (ISSN 1359-7345) *I.F. = 6.222*
- ❖ Azobenzamide-based proteomorphous objects as a light/pH-induced photoswitchable module, P. K. Yadav, **Alok Kumar Singh**, A. Kumar, N. K. Singh, A.

Gulino, L. Mishra*, T. Gupta*, RSC Adv., 2014, 4, 7174-7177. (ISSN 2046-2069) **I.F. = 3.36**

- ❖ A stimuli-responsive “smart probe” for selective monitoring of multiple-cations via differential analyses, A. Kumar, **Alok Kumar Singh**, T. Gupta*, *Analyst*, 2013, 138, 3356- 3359. This paper has been selected for the inside front cover page of the same issue. (ISSN 0003-2654) **I.F. = 4.616**

Patent:

- ❖ Disulfide Bridged Two-Dimensional Erythrosine-B Polymer as a Tool for Photocatalytic C-H Activation, filed 2024 (REF NO 3373).
- ❖ Photocatalytic platform for solar fine chemical production from CO₂, filed 2022.

Book Chapters

- ❖ Fluorescence probes to detect transition metal ions, P. K. Sada, A. Chauhan, **Alok Kumar Singh***, A. Rai, (*Title of Book: Functional Fluorescent Materials Applications in Sensing, Bioimaging, and Optoelectronics, ISBN: 9781032402970*), CRC Press Taylor & Francis Group, London, **2024**. (*Corresponding author)
- ❖ Recent Development of Blue Fluorescent Organic Materials for OLEDs, P. K. Sada, P. K. Gupta, T. Gupta, A. Rai, **Alok Kumar Singh***, (*Title of Book: Organic Light Emitting Diode (OLED) Toward Smart Lighting and Displays Technologies Material Design Strategies, Challenges and Future Perspectives, ISBN: 9781032197036*), CRC Press Taylor & Francis Group, London, (**2024**) 221-232. (*Corresponding author)
- ❖ Design, Synthesis and Application of Smart Nanomaterials in Electronic and Optoelectronic Devices, P. K. Sada, P. K. Gupta, T. Gupta, A. Rai, **Alok Kumar Singh***, Taylor & Francis, Under Publication, **2023** (*Corresponding author)

Teaching & Research Experience

- Teaching experience : 06 years (Including UG and PG)
- Research experience : 12 Years
- Year of award of Doctoral degree : 2011
- Title of thesis for doctoral degree : “Synthesis and physicochemical studies on some organic derivatives of titanium(IV)”

Research grants sanctioned to the principal investigator from various sources during the last ten years.

S. No.	Title of the project	Funding agency	Total amount of grant	Period (from ...to....)	Status (completed/running)
1	“Surface-confined, redox-active dinuclear metal polypyridyl complexes for multistate near-infrared electrochromism and photocatalytic activities”	DST, New Delhi (DST-INSPIRE Faculty Award with PI Fellowship)	Rs. 35,00,000	06 th May 2016 to 05 th May 2022	Completed
2	“Nanostructured molecular assemblies for addressing multi-analytes <i>via</i> differential analyses and tuning of electronic and optical properties”	UGC, New Delhi	Rs. 10,00,000	04 th February 2020 to 03 rd February 2023	Completed

Cover Gallery

