

Dr. Subhash Chandra

Assistant Professor

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Education

- **Ph.D. (2017-2022):** Nanomaterials Research Laboratory, Department of Chemistry, IIT (BHU), Varanasi, India,
Thesis Title: “*Synthesis of carbon based fluorescent nanomaterials and their applications*”
Supervisor: **Prof. S. H. Hasan**
- **M.Sc. Chemistry (2013-2015):** University of Allahabad, Uttar Pradesh, India
- **B.Sc. (ZBC) (2010-2013):** University of Lucknow (Lucknow Christian Degree College), Uttar Pradesh, India

Research Interest

Nanoparticles and Fluorescent Carbon Quantum Dots, Sensors for Biomedical and Environmental Applications, Analytical Chemistry, Developing nano-suspension for drug delivery, Environmental Nanotechnology, Developing nanoscale adsorbents for hazardous metal ions.

Honours and Awards

- Secured 46th All India Rank in National Eligibility Test (NET) sponsored by Council of Scientific and Industrial Research (CSIR-UGC) JUNE-2016 in Chemical Science.
- Secured 111th All India Rank in Junior Research Fellowship (JRF) sponsored by Council of Scientific and Industrial Research (CSIR-UGC) JUNE-2017 in Chemical Science.
- Secured 136th All India Rank in Junior Research Fellowship (JRF) sponsored by Council of Scientific and Industrial Research (CSIR-UGC) JUNE-2018 in Chemical Science.
- Gate 2015 Qualified

Instrumental Expertise

- Atomic Absorption Spectrophotometer
- Fluorescence Spectrophotometer
- Arsenator
- Fourier Transform Infrared Spectrophotometer
- Atomic Force Microscope

- X-Ray Diffractometer
- UV-visible Spectrophotometer
- Time Resolve Fluorescence spectrophotometer
- Zeta Sizer
- Transmission Electron Microscopy

List of Publications

1. Singh, D.; **Chandra, S.**; & Pandey, R. (2023). Ultrasensitive fluorescence detection of nitro-explosives by dihydro-oxoisobenzofuranyl-phthalazinone obtained from the Cd (ii)-catalyzed cyclization of azinodimethylidyne-benzoic acid. *New Journal of Chemistry*. **[IF-3.9]**
2. Yadav, P. K.; **Chandra, S.**; Kumar, V.; Kumar, D.; & Hasan, S. H. Carbon quantum dots: synthesis, structure, properties, and catalytic applications for organic synthesis. *Catalysts* 2023, 13(2), 422. **[IF-4.5]**
3. Kumar, V.; Upadhyay, R. K.; Bano, D.; **Chandra, S.**; Yadav, P. K.; Jit, S.; & Hasan, S. H. Self-assembly of Cu-TMA based semiconducting fibrous metallogels for fabrication of active electronic device with high rectification ratio. *Materials Science and Engineering: B* 2023, 291, 116359. **[IF-3.4]**
4. **Chandra, S.**; Singh, V. K.; Yadav, P. K.; Bano, D.; Kumar, V.; Pandey, V. K.; & Hasan, S. H. (2018). Mustard seeds derived fluorescent carbon quantum dots and their peroxidase-like activity for colorimetric detection of H₂O₂ and ascorbic acid in a real sample. *Analytica Chimica Acta*. **[IF- 6.91]**
5. **Chandra, S.**; Bano, D.; Sahoo, K.; Kumar, D.; Kumar, V.; Yadav, P. K.; & Hasan, S. H. Synthesis of fluorescent carbon quantum dots from Jatropha fruits and their application in fluorometric sensor for the detection of chlorpyrifos. *Microchemical Journal* 2022, 172, 106953. **[IF- 5.3]**.
6. **Chandra, S.**; Bano, D.; Pradhan, P.; Singh, V. K.; Yadav, P. K.; Sinha, D.; & Hasan, S. H. Nitrogen/sulfur-co-doped carbon quantum dots: a biocompatible material for the selective detection of picric acid in aqueous solution and living cells. *Analytical and Bioanalytical Chemistry* 2020, 412, 3753-3763. **[IF- 4.47]**.
7. Yadav, P. K.; Singh, V. K.; **Chandra, S.**; Bano, D.; Kumar, V.; Talat, M.; & Hasan, S. H. (2018). Green synthesis of fluorescent carbon quantum dots from Azadirachta indica leaves and their peroxidase-mimetic activity for the detection of H₂O₂ and ascorbic acid in common fresh fruits. *ACS Biomaterials Science & Engineering*. **[IF- 5.3]**
8. Singh, V. K., Yadav, P. K., **Chandra, S.**, Bano, D., Talat, M., & Hasan, S. H. (2018). Peroxidase mimetic activity of fluorescent NS-carbon quantum dots and its application for colorimetric detection of H₂O₂ and glutathione in human blood serum. *Journal of Materials Chemistry B*. **[IF- 7.57]**
9. Singh, V. K.; Singh, V.; Yadav, P. K.; **Chandra, S.**; Bano, D.; Kumar, V.; & Hasan, S. H. Bright-blue-emission nitrogen and phosphorus-doped carbon quantum dots as a

- promising nanoprobe for detection of Cr (vi) and ascorbic acid in pure aqueous solution and in living cells. *New Journal of Chemistry* **2018**, *42(15)*, 12990-12997. [IF- 3.92]
10. Bano, D.; Kumar, V.; Singh, V. K.; **Chandra, S.**; Singh, D. K.; Yadav, P. K.; & Hasan, S. H. (2018). A facile and simple strategy for the synthesis of label free carbon quantum dots from the latex of *Euphorbia milii* and its peroxidase-mimic activity for the naked eye detection of glutathione in a human blood serum. *ACS Sustainable Chemistry & Engineering*. [IF- 9.22]
 11. Bano, D.; Kumar, V.; **Chandra, S.**; Singh, V. K.; Mohan, S.; Singh, D. K.; Talat, M.; and Hasan, S. H. Synthesis of highly fluorescent nitrogen-rich carbon quantum dots and their application for the turn-off detection of cobalt (II). *Optical Materials* **2019**, *92*, 311-318. [IF- 3.7].
 12. Singh, V. K.; Singh, V.; Yadav, P. K.; **Chandra, S.**; Bano, D.; Koch, B.; Hasan, S. H. Nitrogen doped fluorescent carbon quantum dots for on-off-on detection of Hg²⁺ and glutathione in aqueous medium: Live cell imaging and IMPLICATION logic gate operation. *Journal of Photochemistry and Photobiology A: Chemistry*, **2019**, *384*, 112042. [IF- 5.14].
 13. Yadav, P. K.; Singh, V. K.; Kumar, C.; **Chandra, S.**; Jit, S.; Singh, S. K.; & Hasan, S. H. A Facile Synthesis of Green-Blue Carbon Dots from *Artocarpus lakoocha* Seeds and Their Application for the Detection of Iron (III) in Biological Fluids and Cellular Imaging. *Chemistry Select*, **2019**, *4(42)*, 12252-12259. [IF- 2.30].
 14. Bano, D.; **Chandra, S.**; Yadav, P. K.; Singh, V. K.; & Hasan, S. H. Off-on detection of glutathione based on the nitrogen, sulfur codoped carbon quantum dots@ MnO₂ nano-composite in human lung cancer cells and blood serum. *Journal of Photochemistry and Photobiology A: Chemistry*, **2020**, 112558. [IF- 5.14].
 15. Kumar, V.; Upadhyay, R. K.; Bano, D.; **Chandra, S.**; Kumar, D.; Jit, S.; & Hasan, S. H. The fabrication and characterization of a supramolecular Cu-based metallo gel thin-film based Schottky diode. *New Journal of Chemistry*, **2021**, *45(14)*, 6273-6280. [IF- 3.92]
 16. Yadav, P. K.; Upadhyay, R. K.; Kumar, D.; Bano, D.; **Chandra, S.**; Jit, S.; & Hasan, S. H. Synthesis of green fluorescent carbon quantum dots from the latex of *Ficus benghalensis* for the detection of tyrosine and fabrication of Schottky barrier diode. *New Journal of Chemistry*, **2021**, *45(28)*, 12549-12556. [IF- 3.92]
 17. Pandey, V. K.; Singh, V. K.; **Chandra, S.**; & Hasan, S. H. (2019). Coordination polymeric fluorescent gel: effect of removal of branch substituents of the central core over properties. *Journal of Coordination Chemistry*. [IF- 1.75]
 18. Azad, I., Akhter, Y., Khan, T., Azad, M. I., **Chandra, S.**, Singh, P., & Nasibullah, M. (). Synthesis, quantum chemical study, AIM simulation, in silico ADMET profile analysis, molecular docking and antioxidant activity assessment of aminofuran derivatives. *Journal of Molecular Structure*, **2020**, *1203*, 127285. [IF- 3.8]

Conference and Participations/workshop

1. Synthesis of fluorescent carbon quantum dots via Mustard seeds and their peroxidase like

- activity for colorimetric detection of H₂O₂ and ascorbic acid in a real sample, **Subhash Chandra**. “**International Conference on Advanced Nanomaterials**” (ICAN-2020) from 27-29 February 2020, organised by Rama University Kanpur (Poster presented)
- Mustard Seeds derived fluorescent carbon quantum dots and their peroxidase like activity for Colorimetric detection of H₂O₂ and ascorbic acid in real sample, **Subhash Chandra**, “**2 nd International Conference on Nanoscience and Engineering Application 2018**” organized by JNTU Hyderabad. (Poster Presentation)
 - International conference on "Advanced Materials for Better Tomorrow" (AMBT-2021) from 13th - 17th July 2021, organized by IIT BHU, Varanasi (Participation)
 - Online One-week National Workshop on “Advanced Physical Tools and Techniques for Materials Characterization” (APTTMC-2020) Organized by Department of Physics Mahatma Gandhi Central University, Motihari-845401, Bihar. (Participation)
 - TEQIP-III Sponsored Workshop on Smart Materials: Concept, Design and Applications September 07 - 11, 2020 organised by NIT Uttarakhand. (Participation)
 - National e-Workshop on Instrumentation Techniques in Chemical Sciences (ITCS-2021), June 25-29, organised by Veer Bahadur Singh Purvanchal University Jaunpur, 222003, Uttar Pradesh, India.

Teaching/Research Experience


- ❖ **Teaching Assistant** at IIT BHU, Varanasi (5 years). Teaching B.Tech. and M.Tech. Students.
- ❖ Guided four undergraduate students for M.Tech. Dissertation in the Department of Chemistry, IIT BHU Varanasi, INDIA.

Languages

Fluent speaking, reading, and writing in English and Hindi

Testimony

I hereby declare that the information given above is true to the best of my knowledge and belief.



Sincerely yours,

Subhash Chandra

References

Prof. Syed Hadi Hasan

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