Curriculum Vitae



Dr. Datta Balhari Gunjal

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Assistant Professor,
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Personal Details:

Nationality:	Indian
Gender:	Male
Blood Group:	A +ve
Marital status:	Unmarried
Languages known:	English, Hindi & Marathi

Research Interests:

- ✓ Synthesis of carbon dots, graphene quantum dots and their analytical applications for environment remediation and biomedical analysis.
- ✓ Decipheration of the interaction between CDs and different dyes through spectroscopic techniques.
- ✓ Semiconducting quantum dots as a fluorescent probe for analytical applications.
- ✓ Removal of organic pollutants through adsorption

Educational Qualifications:

1. **Doctor of Philosophy (Ph.D.), Chemistry,**
   Department of Chemistry, Shivaji University, Kolhapur, MS, India.
2. **Master of Chemistry (M.Sc.) Analytical Chemistry**
   Department of Chemistry, Shivaji University, Kolhapur, MS, India.
3. **Bachelor of Science (B.Sc.), Chemistry (78.40 %)**
   Solapur University, Solapur, MS, India.

Research Experience:

2014- 2019: **Research Scholar**
Department of Chemistry, Shivaji University, Kolhapur

Ph.D. Thesis Title: Studies on Photophysical Properties of Carbon Based Nanomaterials and Their Applications.

- ✓ Synthesised carbon dots from different natural precursors
- ✓ Employed CDs a fluorescent probe for quantification of bio molecules, cations and anions and biological applications etc.

Research Publications:

1. Sawmill waste derived carbon dots as single probe for sensitive detection of ponceau 4R and allura red in soft drinks and cell imaging
   Datta B. Gunjal, Mahesh N. Jadahv, Amit S. Jadhav, Prasad G. Mahajan, Ki Hwan Lee, Prashant V. Anbhule, Daeon Sohn, Rajendra V. Shejwal, Govind B. Kolekar
   Scientific Reports 2021, 11 (1),17996

2. Carbon dots as a dual sensor for the selective determination of D-penicillamine and biological applications
   Datta B. Gunjal, Anil H. Gore, Vaibhav M. Naik, SamadhanP.Pawar, Prashant V.Anbhule, Rajendra V.Shejwal, Govind B. Kolekar
   Opt. Mater., 2019, 88, 134–142 (I.F.-2.68)

3. Nitrogen Doped Waste Tea Residue Derived Carbon Dots for Selective Quantification of Tetracycline in Urine and Pharmaceutical Samples and Yeast Cell Imaging Application
   Datta B. Gunjal, Yogesh M. Gurav, Anil H. Gore,Vaibhav M. Naik ,Ravindra D. Waghmare, Prashant V. Anbhule, Rajendra V. Shejwal, Govind B. Kolekar.
   Opt. Mater., 2019 (I.F.-2.68)

4. Sustainable carbon nanodots synthesised from kitchen derived waste tea residue for highly selective fluorimetric recognition of free chlorine in acidic water: A waste utilization approach
   Datta B. Gunjal, Vaibhav M. Naik , Ravindra D. Waghmare, Chandrashekhar S. Patil, Rajendra V. Shejwal, Anil H. Gore, Govind B. Kolekar
   J.Taiwan Inst. Chem. Eng., 2019, 95, 147–154 (I.F.-3.83)

5. Waste derived sustainable carbon nanodots as a new approach for sensitive quantification of Ethionamide and cell imaging
   Datta B Gunjal, Anil H Gore, Amrut R Bhosale, Vaibhav M Naik, Prashant V Anbhule, Rajendra V Shejwal, Govind B Kolekar
   J.Photochem. Photobiol., A, 2019, 376, 54–62 (I.F.-3.26)

6. Quick and low cost synthesis of sulphur doped carbon dots by simple acidic carbonization of sucrose for the detection of Fe^{3+} ions in highly acidic environment

Vaibhav M. Naik, **Datta B. Gunjal**, Anil H. Gore, Samadhan P. Pawar, Sunanda T. Mahanwar, Prashant V. Anbhule, Govind B. Kolekar
Diamond Relat. Mater., 2018, 88, 262–268 (I.F.-2.29)

7. Nitrogen doped carbon dots via hydrothermal synthesis: naked eye fluorescent sensor for dopamine and used for multicolour cell imaging
   Vaibhav M. Naik, Pranjita Zantye, **Datta B. Gunjal**, Anil H. Gore, Prashant V. Anbhule, Meenal Kowshik, Sheshanath Bhosale, Govind B. Kolekar
   ACS Appl. Bio Mater., 2019, 5, 2069-2077

8. Designing of sustainable, solid-sate and photoluminescence switchable electrospun nanofibrous PVA/WTR-CDs hybrid films: A photophysical study
   Anil H Gore, Akshay S Patil, **Datta B Gunjal**, Vaibhav M Naik, Ravindra D.Waghmare, Chandrashekhar S Patil, Govind B Kolekar
   J.Photochem. Photobiol., A, 2019, 380, 111815 (I.F.-3.26)

9. Spectroscopic investigation of interaction between carbon quantum dots and Dpenicillamine capped gold nanoparticles
   Laxman S.Walekar, Samadhan P.Pawar, Uttam R.Kondekar, **Datta B. Gunjal**, Prashant V Anbhule, Shivajirao R. Patil, Govind B. Kolekar
   J.Fluoresc., 2015, 25, 1085–1093 (I.F.-1.91)

10. Highly Selective and Sensitive Recognition of Cobalt(II) Ions Directly in Aqueous Solution Using Carboxyl-Functionalized CdS Quantum Dots as a Naked Eye Colorimetric Probe: Applications to Environmental Analysis
    Anil H. Gore, **Datta B. Gunjal**, Mangesh R. Kokate, Vasanthakumaran Sudarsan, Prashant V. Anbhule, Shivajirao R. Patil, and Govind B. Kolekar
    ACS Appl. Mater. Interfaces, 2012, 4, 5217–5226 (I.F.-8.45)

11. A quantum dot-based dual fluorescent probe for recognition of mercuric ions and N-acetylcysteine: “On–Off–On” approach
    Samadhan P. Pawar, Laxman S. Walekar, Uttam R. Kondekar, **Datta B. Gunjal**, Anil H. Gore, Prashant V. Anbhule, Shivajirao R. Patil and Govind B. Kolekar Anal. Methods, 2016, 8, 6512-6519 (I.F.-2.37)

12. CdS nanocrystals as fluorescent probe for detection of dolasetron mesylate in aqueous solution: Application to biomedical analysis
    Samadhan P. Pawar, Laxman S. Walekar, Uttam R. Kondekar, **Dattatray B. Gunjal**, Anil H. Gore,Prashant V. Anbhule, Shivajirao R. Patil, Govind B. Kolekar
    J.Pharm. Anal., 2016, 6, 410–416 (I.F.-4.44)

13. Fluorescence-based sensor for selective and sensitive detection of amoxicillin (Amox) in aqueous medium: Application to pharmaceutical and biomedical analysis
    Samadhan P Pawar, Laxman S Walekar, **Dattatray B Gunjal**, Dattatray K Dalavi, Anil H Gore, Prashant V Anbhule, Shivajirao R Patil, Govind B Kolekar Luminescence, 2017, 32, 918–923 (I.F.-1.69)

14. Stereoselective HPLC separation of alvimopan on cellulose-based immobilized polysaccharide as a chiral stationary phase
    Nitin H Dhekale, **Dattatray B Gunjal**, Anil H Gore, Yagnakirankumar Komaravolu, K Hima Bindu, Govind B Kolekar, Chirality, 2018, 30, 982–987 (I.F.-1.92)

15. "Seems Bad Turns Good"–traces of precursor in dicationic ionic liquid lead to analytical application
    Sandip K Patil, Sagar C Bhise, Deepak V Awale, Madagonda M Vadiyar, Suryakant A Patil, **Dattatray B Gunjal**,Govind B Kolekar, Uma V Ghorpade, Jin H Kim, Sanjay S Kolekar, Res. Chem. Intermed., 2018, 44, 6267–6282 (I.F.-2.06)

16. Waste tea residue as a low cost adsorbent for removal of hydralazine hydrochloride pharmaceutical pollutant from aqueous media: An environmental remediation
    Chandrashekhar S Patil, **Datta B Gunjal**, Vaibhav M Naik, Namdev S Harale, Suryabala D Jagadale, Abhijit N Kadam, Pramod S Patil, Govind B Kolekar, Anil H Gore, J. Cleaner Prod., 2019, 206, 407–418 (6.39)

17. Study of Interaction between Human Hemoglobin and Antitubercular Isoniazid Drug with Its Detection
    Shilpa R. Patil, Sunanda T. Mahanwar, **Datta B. Gunjal**, Saubai B. Wakshe, Prashant V. Anbhule, and Govind B. Kolekar, Macromol. Symp. 2019, 387, 1800203.

18. Carbon Nanodots Derived from Kitchen Waste Biomass as a Growth Accelerator for Fenugreek Plant,
    Ravindra D. Waghmare, **Datta B. Gunjal**, Vaibhav M. Naik, Anil H. Gore, Mansingraj S. Nimbalkar, Prashant V. Anbhule, Sheshanath V. Bhosale, Daewon Sohn and Govind B. Kolekar, J. Nanosci. Nanotechnol. 2021, Vol. 21, No. 4

19. Sugarcane molasses derived carbon sheet@sea sand composite for direct removal of methylene blue from textile wastewater: Industrial wastewater remediation through sustainable, greener, and scalable methodology, Chandrashekhar S. Patil, Abhijit N. Kadam, **Datta B. Gunjal**, Vaibhav M. Naik, Sang-Wha Lee, Govind B. Kolekar, Anil H. Gore, Separation and Purification Technology, 2020,

20. Nitrogen-doped carbon dot threads as a "turn-off" fluorescent probe for permanganate ions and its hydrogel hybrid as a naked eye sensor for gold(III) ions,
    Vaibhav M. Naik, **Datta B. Gunjal**, Anil H. Gore, Prashant V. Anbhule, Daewon Sohn, Sheshanath V. Bhosale, Govind B. Kolekar. Analytical and Bioanalytical Chemistry, 2020.

21. Sustainable conversion of waste tea biomass into versatile activated carbon: application in quick, continuous, and pressure filtration of miscellaneous pollutants, Chandrashekhar S. Patil, **Datta B. Gunjal**, Vaibhav M. Naik, Ravindra D. Waghmare, Tukaram D. Dongale, Mahaveer D. Kurkuri, Govind B. Kolekar, Anil H. Gore, **Biomass Conversion and Biorefinery, 2021**

22. Tetraphenylethene-Based Fluorescent Chemosensor with Mechanochromic and Aggregation-Induced Emission (AIE) Properties for the Selective and Sensitive Detection of Hg2+ and Ag+ Ions in Aqueous Media: Application to Environmental Analysis
    Kishor S. Jagadhane, Sneha R. Bhosale, **Datta B. Gunjal**, Omkar S. Nille, Govind B. Kolekar, Sanjay S. Kolekar, Tukaram D. Dongale, and Prashant V. Anbhule, ACS Omega 2022, 7, 34888−34900.

Indian Patent :

1. CD-Fe^{3+} system as a dual probe for selective determination of D-penicillamine. (Application No. 201721041497)
2. Quick and low cost simultaneous synthesis of sulphur doped carbon dots for detection of Fe3+ ions and activated carbon for dye adsorption (App No.2017 21041508)
3. Nitrogen doped carbon dots hydrogel as a naked eye fluorescent sensor for detection of dopamine (App. No. 201921003890)
4. Waste tea residue derived carbon nanodots enhances the productivity in Fenugreek by improving chlorophyll content and mineral uptake (Granted2023)

Books Chapter

1. Elsevier Publication, Carbon Dots in Analytical Chemistry, ISBN –
2. Elsevier Publication, Valorization of tea waste for multifaceted applications: A step toward green and sustainable development.

Papers Presented In Conferences/Seminars/Workshops

- Presented a paper in One Day International Conference On Nanomaterials for Energy and Environmental Applications (IC-NEEA-2023), Department of Chemistry, Lal Bahadur Shastri College of Arts, Science and Commerce Satara.

- **Best Oral Presentation** at International Conference on Multidisciplinary Approach and Innovations in Chemical Sciences-2022, Department of Chemistry, Yashavantrao Chavan Institute of Science ,Satara, (MS) India.
- National Symposium Horizons in Nanotechnology (HINT-2022), Department of Chemistry, Lal Bahadur Shastri College of Arts, Science and Commerce Satara.
- 1st International Conference on Recent Trends in Physical, Chemical, Biological and Nanosciences (ICRT-PCBNano-2022), Department of Physics, Lal Bahadur Shastri College of Arts, Science and Commerce Satara.
- Paper presented in, International Conference on Advances in Chemical Sciences (IC-ACS-2018), 1st to 3rd February, 2018. Department of Chemistry, Shivaji University, Kolhapur 416 404 (MS) India.
- Paper presented (Poster) in, National Conference on Innovative Research in Chemical Science (IRCS-2017), 1st & 2nd February, 2017. Department of Chemistry, Shivaji University, Kolhapur 416 404 (MS) India.
- Paper presented (Poster) in National Seminar on Application of Chemical and Material Science for Sustainable Development, 20th February, 2016. Department of Chemistry, Shivaji University, Kolhapur 416 004 (MS) India.
- Paper presented (Poster) in, National Symposium on Current Trends in Chemical and Nano sciences (CTCNS-2014), 17th & 18th January, 2014. Department of Chemistry, Shivaji University, Kolhapur 416 404 (MS) India.

Instruments Handled & Skills

Good Practice in Handling of Instruments:

- ✓ Spectrofluorimeter (Jasco, FP-8300)
- ✓ UV-Visible Spectrophotometer (Shimadzu)
- ✓ Time correlated Single Photon Counting System (TCSPC) (Horiba)
- ✓ Atomic Absorption Spectroscopy (Systronics)
- ✓ IR- Spectrophotometer

Detailed Knowledge & Skills:

- ✓ Chromatographic techniques: HPLC, GC,
- ✓ Spectroscopic methods
- ✓ Instrumental & Classical analysis

Chemistry Software & Computer Skills:

- ✓ Origin, End note, Chem draw, Chemix, MS-Office (Word, Excel, Power point)

Awards/Fellowship

December, 2009	'Eklavya' Merit Scholarship for Post-Graduation Study
June, 2012	UGC-CSIR NET-Junior Research Fellowship (JRF) New Delhi.
April, 2016	UGC-Senior Research Fellowship (SRF) New Delhi.

References

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I do hereby declare that the statement made in this application are true, complete & correct to the best of my knowledge and belief.

Date:

Yours Faithfully,

Place:

(D. B. Gunjal)