


Dr. Satish Kumar Sen, M.Sc., Ph.D. (Botany)

Assistant Professor of Botany,

Government V. Y. T. PG Autonomous College, Durg, Chhattisgarh, India – 491001

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 **Residential Address:** House No. 282, Street No. 2, Shyam Nagar, Posley Para, Durg, C.G. – 491001



Career Objective

To contribute meaningfully to higher education, research, and innovation in plant sciences, with a special focus on environmental sustainability, nanotechnology applications, and interdisciplinary collaborations, while nurturing young scientific minds in academia.

Personal Details

- **Father's Name:** Late Shri Raghunandan Sen
 - **Mother's Name:** Smt. Rambai Sen
 - **Date of Birth:** 01 January 1975
 - **Gender:** Male
 - **Nationality:** Indian
 - **Marital Status:** Married
 - **Languages Known:** Chhattisgarhi, Hindi, English
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Academic Qualifications

Degree	Institution	Subject	Year
Ph.D.	Pt. Ravishankar Shukla University, Raipur	Botany	2009
M.Sc.	Govt. Arts & Science College, Durg	Botany	1997
B.Sc.	Govt. Arts & Science College, Durg	Botany, Zoology, Chemistry	1995
Higher Secondary (XII)	Govt. Multipurpose H.S. School, Durg	Biology, Physics, Chemistry	1992
High School (X)	Govt. Multipurpose H.S. School, Durg	Science, Mathematics	1990

Teaching and Administrative Experience (17+ Years)

Assistant Professor of Botany

Govt. V.Y.T. PG Autonomous College, Durg (2017 from to till date)

Previous Positions

- Assistant Professor, Govt. Pt. J.L.N. PG College, Bemetara (2015–2017)
- Principal, G.D. Rungta College of Science & Technology, Bhilai (2010–2013)
- Principal, Bhilai Nair Samajam College, Bhilai (2007–2010)
- Principal, IBT Science College, Ahiwara (May–Sept 2013)

- Principal, Chhattisgarh Commerce & Science College, Bhilai (2013–2014)
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Areas of Specialization

- **Plant Nanotechnology**
 - **Plant Physiology**
 - **Limnology**
 - **Taxonomy**
 - **Green Technology Applications**
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Research Profile

- **Ph.D. Awarded:** Yes, 2009
- **Research Papers Published:** 13+
- **Book Chapters:** 10+ (Springer, Elsevier, Immortal Publications)
- **Ph.D. Supervisor :** Awarded candidate – Anjali, **Title of thesis:** Surface Modification of Silk Fiber By Grafting And Study of Its Antibacterial Activity.
- **Ph.D. Supervision:** 3 scholars (1 awarded)
- **PG Project Guidance:** 50+
- **Conferences & Seminars:** 55+ presentations (National & International)
- **Reviewer/Editorial Role:** *International Journal of Innovative Life Sciences*, St. Joseph University, Nagaland

Patents Granted:

1. IOT-Based User-Friendly Lung Exerciser

Design No: 380462-001 | Filed: 01/03/2023

Govt. of India | Real-time lung monitoring & rehabilitation device.

2. Hand-Held Sickle Cell Detecting Device

Design No: 401534-001 | Filed: 06/12/2023

Govt. of India | Low-cost point-of-care sickle cell diagnostic tool

Major Research Projects

1. Minor Research Project

“Phytochemical Evaluation of Dioecious Characters of *Tinospora cordifolia*”

Funded by Govt. V.Y.T. PG College – ₹50,000

2. Short-Term Project

Funded under College Research Promotion Scheme – ₹10,000

Academic & Administrative Responsibilities current & previously

RUSA INCHARGE & IQAC INCHARGE: 2015-2017.

- **Hostel Warden (Boys' Hostel): 2020–2024**
- **NSS Program Officer: 2017–2019**
- **Red Cross Incharge: Jan 2025 – Present**

- **Other Activities:** Seminar coordinator, PG Library head, Botanical Society convenor, Excursion incharge, Exam cell & discipline committee
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Professional Development

Orientation & Refresher Courses

- UGC Orientation Programme, Panjab University, Chandigarh (2015) – *Grade A*
- M.Sc. Teachers' Training, IISc Bangalore (2019) – *Grade A*
- Refresher in Plant Taxonomy, Yogi Vemana University, Kadapa (2016)
- Refresher Course, Bharathiar University, Coimbatore (2023)

Faculty Development Programs

- FDP on “Online Education: Boon for HEIs”, Hemchand Yadav University (2020)
 - Two-week FDP on “Managing Online Classes and MOOCs 3.0”, Ramanujan College, University of Delhi (2020)
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Seminars, Workshops & Webinars (Highlights)

- STEM Workshop (IISER Pune, MHRD, British Council – 2017)
- Organizer: National Webinar on “Modern Aspects in Botanical Sciences” (2021)
- Paper presentations on phytomicrobiology, biodiversity, soil sciences, conservation, NEP 2020, and climate change

- International Webinars on Antimicrobial Resistance, COVID-19 Response, IPR
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Guest Lectures & Invited Talks (Selected)

- Gujarat Vigyan Sammelan – *Forest Biodiversity & Rural Economy*
 - St. Joseph University, Nagaland – *Biodiversity for Sustainable Agriculture*
 - St. Thomas College, Bhilai – *Soil Pollution and Plants*
 - Govt. Digvijay College, Rajnandgaon – *Plant Systematics*
 - Shail-Devi College, Anda – *Water Conservation*
 - Govt. PG College, Kawardha – *Careers in Botany*
 - Kalyan PG College, Bhilai – *Lower Plants*
 - Baba Saheb Ambedkar College – *NET Exam Guidance*
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Publications (Selected)

Research Articles

- *Indian J. Sci. Res., Life Sci. Bulletin, Polymer Science Series B, Applied Biochemistry & Microbiology*, etc.
- Topics include: aquatic ecology, plant stress physiology, nanomaterials, arsenic contamination, phytosociology

Book Chapters

- *Springer, Elsevier, Immortal Publications* on:
 - Soil algae and fertility

- Green synthesis of nanoparticles
 - Ethnomedicinal plant applications
 - Arsenic behavior in soil
 - Glycine betaine under stress conditions
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Professional Memberships (Lifetime)

- Society for Ecological & Environmental Development (SEED), Bhilai
 - Society for Advances in Plant Sciences, Muzaffarnagar (U.P.)
 - Vigyan Bharati, Govt. of India, New Delhi
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Awards & Recognition

- **Recognition Awards** (2018, 2019): *Vidyarthi Vigyan Manthan*, Sponsored by *Vigyan Prasar & DST, Govt. of India*
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Seminar/Workshop:

1. Participated in One day work shop on NAAC & CBCB (RUSA) Organized by Dr.J.P. Mishra Govt. Science College, Mungeli(C.G.). On 6th November 2015.
Participated in Workshop on Women Empowerment Organized by Government Girls College, Bemetara

(C.G.) Under the Programme RUSA. on 2nd February 2016.

2. Paper Presented in National Seminar on “Present Scenario in “Phytomicrobial aspects beneficial to mankind” (27th & 28th January 2017) UGC Sponsored Organized by Govt. Dr. W. W. Patankar Girls PG College, Durg. (C.G.).
3. Paper presented in National Workshop on “Recent Trends in

Scientific Research on Conservation & Diversity of forest (6th & 7th February 2017) UGC Sponsored
Organized by Govt. Dr. W. W. Patankar Girls PG College, Durg. (C.G.).

4. Paper presented in National Seminar on “Advances in Environmental Science & Technology” Sponsored by UGC (23th & 24th January 2017) organized by Department of Botany Govt. Digvijay Autonomous PG College, Rajnandgaon,(C.G.).
5. Actively Participated in the STEM Teacher Training Workshop on Research Based Pedagogical tools held from 6th -9th October 2017 at Pt. Ravishankar Shukla University, Raipur (C. G.) Workshop was jointly organized by DBT, New Delhi, British Council, Newton-Bhabha Fund, MHRD & IISER, Pune.
6. Actively Participated in three days workshop on “J& K Facts, Problems & Solution : A Discussion”. On 28, 29 & 30th July 2017. Organized by Hemchand Yadav Durg University, Durg (C.G.).
7. National Symposium on Indian Culture “Anadi se Aaj tak” 23 & 24th December 2017. Organized by Hemchand Yadav Durg University, Durg (C.G.).

8. Organizing committee members 16th Chhattisgarh Young Scientist Congress – 2018 Sponsored by CGCOST, Raipur (C.G.) on 27 & 28th February 2018.
9. Participated in International Webinar on “ Concept of gene and gene technology” organized by Uttam Memorial College, Raigarh (C.G.) Dated on 12th March 2021.
10. Participated in National Webinar on “Role of science and technology in Global health and food security” organized by Govt. Girls PG. College,Ujjain (M.P.) Dated on 1,2, and 3rd March 2021.

11. Participated in New Year Webinar on “ Science, Technology and innovation Policy of GOI, by Prfo. Ashutosh Sharma, Secretary, DST, Webinar was organized by Department of Botany, Central University of Punjab, Bathinda on 17th January 2021.
12. Organizing Secretary of Two days NATIONAL WEBINAR ON “Modern aspects in Botanical Sciencens” from 19 and 20th May 2021. Organized by Department of Botany in association with IQAC, Government V. Y. T. PG. Autonomous College, Durg, Chhattisgarh. India.
13. Participated in the National Webinar on „Techhnological Innovationand Academia Industry Collabration under self-Reliant India”, Organized by Department of Electrical and Electronics Engineering, MSAJCE, Chennai on 23/07/2020.
14. Participated on Earth Day 22 April 2021 “Lesser-Known Continentof the Earth: Antartica” by Prof. Rajan Kumar Gupta (Centre for Advanced Study in Botany, BHU, Varanasi), Organized by Department of Botany & Ecoclub, Govt. e. v. P. G. College, Korba (C.G.).
15. Participated in “ National Eduation Policy” 2020. Organized by Department of Education, St. Thomas College, Bhilai. Dated on 23rd March 2021.

Research Publications:

1. Aquatic Macrophytic Diversity in Lentic Bodies of Durg-Bhilai City in Chhattisgarh (India). Ad. Plant Sci. 26 (I) 157-161. 2013.
2. Phytosociological Studies of Urla Pond in Durg City. Life Science Bulletin, Vol. 9 (2) 2012 : 2012 : 413-416.
3. Rapid One step DNA Extraction Method from (*Gastromargus Musicus*) through Formaldehyde, Das S, Tiwari K L, Sen S, * Singh A. Journal of Pharmaceutical.

And biomedical sciences issn no- 2230 – 7885 coden jpbsct nlm
Title: j. Pharm biomed sci.

4. Effect of Macrophytic Community Organisation in a Fresh Water Lentic Body of Durg City in Chhattishgarh. ABR, 2013, E-ISSN 2277-1573 P ISSN 0976-4585.
5. Book Chapter : Indices of Macrophytic diversity in some ponds of Durg-Bhilai City and their relationship with water quality. Book Chapter, Conservation & Management of Aquatic Ecosystem. By K. S. Unni. Daya Publishing House, New Delhi. 2002. ISBN 81- 7035-290-8. Page No. 84-91.
6. A Significant Role of Aquatic Macrophytes In Lentic Ecosystem, Satishkumar sen & Deepak Karkun , Indian J. Sci.Res. 13 (2): 161-165, 2017 ISSN:0976-2876 (Print). ISSN:2250-0138 (Online).
7. Macrophytic Community Organization in A Tropical Fresh Water Lentic Body. Vasundhara, The Earth. Vol. 1& 2, No. 2 & 1, pp 10-12, 30 June 2000. Published by Society for Ecological and Environmental Development (SEED) Bhilai – India.

8. Applying a Gouy–Chapman–Stern Model for Adsorption of Toxic Metals to Soils in Arsenic Affected Areas of Chhattisgarh. World News of Natural Sciences (An international Scientific journal) WNOFNS 30(2) (2020) 189-197 EISSN 2543-5426 . Available online at www.worldnewsnaturalsciences.com. World News of Natural Sciences 30(2) (2020) 189-197.
9. Phyto-sociological analysis of pond ecosystem in chhattisgarh, india, satish

kumar sen, Ashish kumar bhui, international journal of innovative life sciences (international peer reviewed referred journal. int. j. of innovative life sciences, 2021; 1 (1): jan 2021.

10. Fibers and polymers Springer Surface modification of Kosa silk fabric through graft-copolymerization-I: Synthesis and characterization". 2022. (Communicated). Publications : Taylor & Francis

11. Aquatic floristic composition of chhattishgarh, satish kumar sen, international journal of innovative life sciences (international peerreviewed referred journal. int. j. of innovative life sciences, 2021; 1 (1): Jan 2021.

12. Green synthesis of cu (copper) nanoparticles by using uv-visible spectrophotometer, satish kumar sen, swati agrawal, tarinee sahu and uday. international journal of innovative life sciences (international peer reviewed referred journal. int. j. of innovative life sciences, 2021; 1 (1): jan 2021.

13. **Book Chapter** : Plant Response Under Stress : Role of Glycine Betaine, Praveen Jain & Satish Kumar Sen. Book

Chapter Published in Immortal Publications “ Wisdom of Indian Medicinal Plants” ISBN : 978-93-5419- 762-8 : 2021, Editore: Dr. P. Shivakumar Singh, Page No. 193-204.

14. **Book Chapter** :Delineating high arsenic levels in soil and its weird behavior in Ambagarh Chowki, Rajnandgaon, Central india. Ashish Kumar Bhui and Satish Kumar Sen. Book Chapter Published in Immortal Publications “ Wisdom of Indian Medicinal Plants” ISBN : 978-93-5419- 762-8 : 2021, Editore: Dr. P. Shivakumar Singh, Page No. 273-300.
15. **Book Chapter** : Soil Algae : Morphology, Ecology and Biotechnological Applications, Title : Role of Soil algae in the maintenance of soil fertility and soil health. Publishers : Springer Nature Singapore pte Ltd.(In Press).
16. **Book Chapter** : Potent Biological Activity of Green-synthesized silverNanoparticles, 2022 (Communicated) Elsevier Publications.
17. **Book Chapter** : Biological synthesis of nanoparticles : A value ofEthnomedicine, 2022 (Published) Elsevier Publications.
18. **Book Chapter** : Role of soil algae in the maintenance of soil fertility andsoil health : 2022 (Accepted) Springer Publications.

19. Introducing Antibacterial Property to Silk Fabric by Chemical Grafting of [2-(methacryloyloxy) ethyl] Trimethyl Ammonium Chloride (MAETC). ISSN 0003-6838, Applied Biochemistry and Microbiology, 2023, Vol. 59, No. 6, pp. 935–945. © Pleiades Publishing, Inc., 2023.
20. Graft Polymerization Induced Enhanced Dyeing Performance and Antibacterial Properties of Kosa Silk. ISSN 1560-0904, Polymer Science, Series B, 2023, Vol. 65, No. 5, pp. 615–623. © Pleiades Publishing, Ltd., 2023.
21. Book Chapter : Properties of Quantum Dots Based Nanocomposites (book Chapter) Springer : 2024
22. Surface Modification of Kosa Silk Fiber by Graft Copolymerization with Vinyl Benzyl Trimethylammonium Chloride (VBT) and Its Antibacterial Study. ISSN 1070-4272, Russian Journal of Applied Chemistry © Pleiades Publishing, Ltd., 2024.

Awards :

1. Recognition award from Vidyarthi Vigyan Manthan, (Chhattisgarh state) Sponsored by Vigyan Prasar & Department of Science and Technology, New Delhi. Year 2018 & 2019.

2. Recognition award from Vidyarthi Vigyan Manthan, (Chhattisgarh state) Sponsored by Vigyan Prasar & Department of Science and Technology, New Delhi. Year 2019.

Faculty Development Program: -

1. Participated in 10 days Faculty Development Program “ Online Education : Boon for upliftment of Higher Education Institutes “22 July 2020 to 31st July. Organized by Hemchand Yadav university, Durg, C.G.
2. Two-week online faculty development programme on managing online classes and co creating moocs 3.0, 25th July to 10th August 2020. Organized by Teaching Learning Centre & ResearchDevelopment and Services Cell, Ramanujan College, University of Delhi, (Under the MHRD, PMMMNMTT scheme).

Research Projects:

1. Minor research project sanctioned by Govt. V. Y. T. PG. Autonomous College, Durg, (C.G.) “Phytochemical Evaluation of dioecious characters of *Tinospora cardifolia* (Miers) components” @Rs. 50.000/ for two years.
2. Under the research promotion scheme of the college, the research council has been sanctioned short project @10,000/ for one years.



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पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India
डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. 401534-001
तारीख / Date 06/12/2023
पारस्परिकता तारीख / Reciprocity Date* :
देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **HAND-HELD SICKLE CELL DETECTING DEVICE** से संबंधित है, का पंजीकरण, श्रेणी 24-01 में 1.Daneshwar Prasad 2. Dr. Ranjana Shrivastava 3.Dr. Satish Kumar Sen के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to **HAND-HELD SICKLE CELL DETECTING DEVICE** in the name of 1.Daneshwar Prasad 2. Dr. Ranjana Shrivastava 3.Dr. Satish Kumar Sen.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसारण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि : 15/02/2024
Date of Issue :



बुधराज लाल शर्मा

भारतीय पेटेंट, डिजाइन और ट्रेड मार्क
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*पारस्परिकता तारीख (यदि लगे हो) : जिसकी अनुप्राप्ति दी गई है तथा देश का नाम : डिजाइन का कार्यालय पंजीकरण की तारीख से दस वर्षों के लिए डिजाइन विचार, अधिष्ठाता एवं विचार के विचारों के अंतर्गत, यदि कोई भी अधिष्ठाता अथवा के लिए किया जा सकता है। इस प्रमाण पत्र का उपयोग विदेशी कार्यालयों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

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पेटेंट कार्यालय, भारत सरकार **The Patent Office, Government Of India**
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डिजाइन सं. / Design No. 380462-001
 तारीख / Date 01/03/2023
 पारस्परिकता तारीख / Reciprocity Date* :
 देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **IOT BASED USER-FRIENDLY LUNG EXERCISER** से संबंधित है, का पंजीकरण, श्रेणी 24-01 में **1.Ashish Nagila 2. Tamijeselvan S 3.Dr.Govind Hanmantrao Balde 4.Dr. Satish Kumar Sen 5.Mohammad Kashif Noorani 6.Mohan Subramani** के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to **IOT BASED USER-FRIENDLY LUNG EXERCISER** in the name of **1.Ashish Nagila 2. Tamijeselvan S 3.Dr.Govind Hanmantrao Balde 4.Dr. Satish Kumar Sen 5.Mohammad Kashif Noorani 6.Mohan Subramani**.

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 In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि 19/04/2024
 Date of Issue



 महानिबंधक पेटेंट, डिजाइन और व्यापार चिह्न
 Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वतंत्रिक पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के विधियों के अन्तर्गत, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अपना विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।
 The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

Dr. Satish Kumar Sen

Assistant Professor of Botany

Government V.Y.T. PG Autonomous College, Durg (C.G.).