

## RESUME

### **Kusumanjali Deshmukh**

Ph.D., M.Sc (Physics)

Assistant Professor (Physics)

Govt. VYT PG Autonomous College,

Durg (Chhattisgarh), INDIA

email: kusumanjali.d25@gmail.com

Contacts: +91-788 – 4903779 (Res), +91-9424109836 (Mobile)



Presently associated with Gov. VYT PG Autonomous College Durg; affiliated to Hemchand Yadav University, Durg and Under Dept of Higher Education CG, as an Assistant Prof (Physics). Experienced as Associate Professor, SSGI, SSTC, Bhilai, affiliated to CSVTU, Bhilai, CG with a demonstrated history of working in the field of higher education. Skilled in Educational Leadership, Lecturing, Teaching and E-Content Development. Technically equipped to welcome **Challenges of NEP2020 in Higher Education** and University Teaching. Strong professional with a Doctor of Philosophy focused on Research. Intended in Popularizing Physics and giving Society, Physics Loving Teachers and Professionals.

### **Academic Qualification:**

- **Ph.D., Physics**  
UTD PT Ravishankar Shukla University, Raipur, Chhattisgarh  
**Year of Award:** Feb. 2012  
**Thesis Title:** *Investigations on Electro- optical Properties of some chemically deposited nano and bulk rare earth doped Semiconducting films.*
- **M.Sc, Physics**  
UTD PT Ravishankar Shukla University, Raipur, Chhattisgarh  
**Year of Passing:** 1997  
**Project Title:** *Photoconductivity Studies on some II-VI Semiconducting thin films.*
- **B.Sc., (Maths), Mathematics, Physics & Chemistry**  
**Year of Passing:** 1995

### **Ph.D. Guided (/Dissertation):**

1. Goverdhn Yadu. "Investigations On Semiconducting Properties Of Silver Sulphide Thin Films Synthesized By Chemical Route, CSVTU, Bhilai, CG (2013-2019), Awarded Nov'2019
2. Krishna Kumar Pathak, "Preparation And Characterization Of Chemically Deposited Rare Earth Doped Nanocrystalline Cdse Films", CSVTU, Bhilai, CG (2013-2020), Awarded Feb'2020

## Work Experience:

- **Assistant Professor (State Services)**(Nov. 2021- till date), Govt. VYT PG Autonomous College, Durg, Chhattisgarh.
- **Assistant Professor (State Services)**( Oct. 2018- Nov. 2021) Dr. Manrakhan Lal Sahu Shaskiya Mahavidyalaya, Jamul, Bhilai Chhattisgarh. 490020
- **Associate Professor** (Sept. 2013-Oct. 2018), Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh. 490020
- **Sr. Assistant Professor** (Mar. 2012-Sept. 2013), Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh. 490020
- **Assistant Professor** (June 2006-Mar. 2012), Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh. 490020
- **Lecturer** (Aug. 2001-Jun. 2002), Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh. 490020
- **Assistant Professor (Adhoc) (Sept 1997-April 2001)**, Kalyan PG Mahavidyalaya, Bhilai, Chhattisgarh, 490006

## Research Area Interest:

- Luminescence in II-VI Semiconducting Thin films
- Chemically Deposited Thin Films
- Thin Films for Photovoltaic Applications
- Nanostructured thin films and Property Modifications
- Photoconductivity Enhanced newer materials

## Membership to Professional Bodies:

- Life member of Indian Association of Physics Teachers.(L4782)
- Life Member of Luminescence Society of India.(36/LMLS1486)
- Life member of Indian Physics Association (GEN/LM/12448)

## Software Skills:

- Working knowledge of MS Office, DOS, Origin Photoshop
- Diploma in computer programming and application
- Languages: Programming with C, C++, FORTRAN, COBOL and DBASE
- Other Software: Good command over MS Windows XP, MS Office 2007, DOS and Multimedia packages Corel Draw, Origin Photoshop.

## Courses Taught:

- **Under Graduate:**
  - Applied Physics
  - Solid State Devices and Components

- Electrical Engg. Materials
  - Quantum Physics
  - Wave Optics
  - Classical Physics
  - Solid State Physics and Devices
- **Post Graduate:**
    - Nuclear and Statistical Physics
    - Electrodynamics
    - Quantum Physics

## Responsibilities Discharged:

### University Level:

1. **Assistant Superintendent of Exam**, for Chhattisgarh Swami Vivekanand Technical University, Bhilai (CG) at the Institute (Nov. 2011- Oct. .2015).

### Institute Level:

1. **Coordinator Admission Cell**, Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, July 2012-Oct. 2018
2. **Member** in various committee at institution level and Women's Security cell at AICTE, Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, July 2006-Oct. 2018
3. **Subject Coordinator, Department of Physics** at Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, 2006-Oct. 2018
4. **Coordinated NAAC** at Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, 2017-2018, in new Online Portal Format.
5. **Member**, Lab audit & Stock verification, Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, (May 2018)
6. **Coordinator Girls Hostel Flying Squad** at Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, July 2012-Oct. 2018
7. **Established / Designed/Upgraded new state of art physics laboratory** at the institution Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, July 2008-Oct. 2018
8. **Established and assembled experimental Setup for research purpose**, Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, July 2008-Oct. 2018.

## Awards/Recognitions/Certifications:

1. **Chhattisgarh 5<sup>th</sup> Young Scientist Award, 2007**
2. **Certificate of Appreciation** by Swayam for *Translating the lectures of course Engineering Mechanics* in Hindi, 19 Jan. 2022
3. Course under Centre for Continuing Education on *The Story of Photoelectric Effect* from July 15 to August 17, 2021 conducted by IIT, Kanpur
4. **NPTEL On-line Course Certification**, on *Experimental Physics-II* in Jan.-April 2020 with **Elite Gold** certification.
5. Course under Centre for Continuing Education on *Classical Mechanics – 1* from January 26 to April 25, 2021 conducted by IIT, Kanpur
6. Course under Centre for Continuing Education on *Classical Electromagnetism - 1 (Electrostatics)* from August 15 to December 13, 2020 conducted by IIT, Kanpur
7. **Certificate of Appreciation** by NPTEL for *Translating the files of course Experimental Physics-II* offered by IIT Kanpur in hindi, 11 Sept 2020
8. Course under Centre for Continuing Education on *Learning Physics Through Simple Experiments* from April 2 to June 10, 2020 conducted by IIT, Kanpur
9. Course under Centre for Continuing Education on *Advanced Course on Special theory of Relativity* from January 26 to May 19, 2020 conducted by IIT, Kanpur
10. Course under Centre for Continuing Education on *Basics of Special Theory of Relativity* from 18 Dec 2018 to 8 Mar 2019 conducted by IIT, Kanpur
11. Course under Centre for Continuing Education on *Basics of Quantum Mechanics* from August 15 to November 18, 2019 conducted by IIT, Kanpur
12. **SPOC NPTEL Local Chapter** at Shri Shanakaracharya Technical Compus, SSGI, Bhilai since Feb 2017 institute ranked 20<sup>th</sup> position in Jan.-April 2017 awarded **AA certification**.

## Extention Activities:

1. **As Reviewer , Elsevier Publication**
2. **Primary Evaluator** for contribution in 'Toyhacathon' 2021 conducted by AICTE in association with Ministry of Education Innovation Cell.
3. **Judge**, *Science for Sustainable living* organized by Khalsa Public School, Durg under Office District Education Officer, Durg on 9<sup>th</sup> Sept. 2021
4. **Actively involved in organization of District level Young Science Congress since 2016.**
5. **Coordinator**, *Rashtriya Mansik Swasthya Karyakram, 2017* in association with NCDCELL, Durg

### Invited Speech/Guest Lectures:

1. **Invited Lecture**, "Lecture series on Wave optics and Mechanics" on Interference of Light, organized by department of Physics, Indira Gandhi Govt. Arts and Commerce PG College, Vaishali Nagar, Bhilai on 19 April 2021
2. **Invited Lecture**, "Lecture series on Wave optics and Mechanics" on Diffraction of Light, organized by department of Physics, Indira Gandhi Govt. Arts and Commerce PG College, Vaishali Nagar, Bhilai on 26 April 2021
3. **Resource Person**, "Thin Films: Band Structure Modulation and Modification in Properties" at two days National Webinar on "Sustenance of Physics during Pandemic", organized by Govt. Rajeev Lochan PG College Rajim, Chhattisgarh, 13th-14<sup>th</sup> Aug 2020.
4. **Resource Person**, "National Workshop on Practical Application and Validation of Analytical Instruments, Organized by FPSc, Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh on 18<sup>th</sup> Feb 2016

### Conferences/Workshops/STTPs Organized:

1. **Coordinator**, "Awareness Workshop on NPTEL, at Shri Shankaracharya Technical Campus, Bhilai in association with IIT, Kharagpur, 17th Jan., 2017 for Principal/faculties of Engineering, Science, Humanities college across the state.

### Book Chapter:

2. **Kusumanjali Deshmukh**, Naveen Goel and Bhagwati Charan Patel (2020), "*Optical Sensors: Overview, Characteristics and Applications*", Advances in Modern Sensors, Physics, Design, Simulation and Applications, pp.3-1 to 3-27, Nov. 2020, Ch-3, IOP Publishing Ltd, Bristol, United Kingdom, DOI.10.1088/978-0-7503-2707-7
3. Naveen Goel, **Kusumanjali Deshmukh**, Bhagwati Charan Patel and Saji Chacko (2020), "*Tools and Rubrics for Assessment of Learning Outcomes*", Assessment Tools for Mapping Learning Outcomes with Learning Objectives, A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series, IGI Global Information Science Reference, Ch.13, pp. 211-254, 25 Sept. 2020. ISSN: 2326-8905, DOI: 10.4018/978-1-7998-4784-7.ch013
4. Bhagwati Charan Patel, Naveen Goel and **Kusumanjali Deshmukh** (2020), "*Traditional Teaching Pedagogy: Student vs Teacher Centric*" Assessment Tools for Mapping Learning Outcomes with Learning Objectives, A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series, IGI Global Information Science Reference, Ch.4, pp. 42-57, 25 Sept. 2020. ISSN: 2326-8905, DOI: 10.4018/978-1-7998-4784-7.ch004

## Journals Publications:

### International:

1. Pathak, K.K., Pateria, Mimi Akash, **Deshmukh, Kusumanjali** and Jha, Piyush. "Effect of Sm concentration on optical and electrical properties of CdSe nanocrystalline thin film" Materials Science-Poland, vol.37, no.1, pp.33-38, 2019. <https://doi.org/10.2478/msp-2019-0006>
2. S . Sengupta, M. A Pateria, **K. Deshmukh**, "Holmium doped copper indium sulphide thin films with polytypism structure synthesized by chemical bath deposition method", i-manager's Journal of Material Science, Vol. 7, No. 1, pp. 39-43, 2019.
3. S . Sengupta, M. A Pateria, **K. Deshmukh**, "Structural and morphological studies of sm doped and undoped CuInS nanocrystalline films with chalcopyrite – wurtzite polytypism structure" Optoelectronics and advanced materials, Rapid communications, Vol. 12, pp. 475-479, 2018
4. Pathak. K. K., Pateria. Mimi Akash, and **Deshmukh Kusumanjali**, Comparative Study of optical and electrical properties of CdSe:Sm and CdSe:Nd nanocrystalline thin film, Research Journal of Engineering and Technology, Vol. 9, No. 1, pp. 67-69, 2018, UGC listed No. 10452 (ISSN 09762973).
5. G. YADU, M. A. PATERIA, **K. DESHMUKH**. "Structural and Optical Properties of Ho, Pr Doped Rare Earth Element in Ag<sub>2</sub>S Thin Film Obtains by Chemical Bath Deposition Technique", Chalcogenide Letters. Vol. 15, No. 2, pp. 63 – 73, February 2018, ISSN 1584-8663.
6. GOVERDHAN YADU, M. A. PATERIA, **K. DESHMUKH**, "Studies on semiconducting properties of chemically deposited doped and undoped silver sulphide film", Research Journal of Physical Sciences Vol. 6, No. 2, pp. 1-8, February 2018, ISSN 2320-4796
7. K. K. Pathak, Mimi Akash Pateria, and **Kusumanjali Deshmukh**, Comparative Study of Optical and Electrical Properties of CdSe:Sm and CdSe:Nd Nanocrystalline Thin Film', 'Research Journal of Engineering and Technology' Vol. 9, No.1, pp. 67-69, Jan 2018, (ISSN : 0976-2973, UGC listed No. 10452).
8. **Kusumanjali Deshmukh**, Mimi Mukherjee, Shashi Bhushan and R C Agrawal: Effect of thioglycerol capping on morphology and structure of chemically deposited CdS:NaF,La films Recent Research in Science and Technology, Vol 4, No 8 (2012)
9. **Kusumanjali Deshmukh**, Mimi Mukherjee and Shashi Bhushan: Structural and optical studies on La doped CdS nanocrystalline films. Turkish Journal of Physics, 35 (2011), 1-13.
10. **Kusumanjali Deshmukh**, S Bhushan and M. Mukherjee: Studies on nanocrystalline properties of Chemical Deposited Pr doped CdS films, Chalcogenide letters 2010,7(1): 11-19.
11. S. Bhushan, S. Agrawal, and **K. Deshmukh**: Photoconductivity and Photoluminescence Studies of some chemically deposited Cd(S-Se):CdCl<sub>2</sub>, Gd films. Recent Research in Science and Technology 2010, 2(4): 17-23.

### National:

1. K. K. Pathak, Mimi Akash Pateria, **Kusumanjali Deshmukh** and Piyush Jha, Optical and Electrical Properties of Neodymium doped Cadmium Selenide Nanocrystalline Thin Film, published in 'International Journal for Research in Applied Science & Engineering Technology', Vol. 5, No. XI, pp. 795-798, Nov. 2017, UGC listed No. 45842 (ISSN 23219653).
2. S . Sengupta, M. A Pateria, **K. Deshmukh**, " Chemical bath deposited CuInS<sub>2</sub> thin films and their characterization" , IJSRET, 4,2018, ISSN: 2395 -1990

## onferences/ Seminars:

### International & National:

1. S. SENGUPTA, M. A PATERIA, **K. DESHMUKH**, "Pr Doped Copper Indium Sulphide thin films Synthesized by chemical bath deposition method", International Conference on Luminescence , on 7 -10th Jan 2019 at SoS in Physics, Pt RSSU, Raipur
2. Goverdhan Yadu, M. A. Pateria, **K. Deshmukh**, "Structural and Optical Properties of Pr doped rare earth element in (Cd-Ag)S thin Films obtain by chemical bath deposition method", National Conference on Advancements & Globalization in (Cd-Ag)S thin films obtain by chemical bath deposition meth Chemical Sciences for Man, Material & Environment (AGCSMME - 2018) March 9-10, 2018 , Dr. C. V. Raman University Bilaspur Chhattisgarh, India.
3. K. K. Pathak,, Mimi Akash Pateria, **Kusumanjali Deshmukh** and Piyush Jha, Photoluminescence Study of Nd doped CdSe Nanocrystalline Thin Film Prepared by Chemical Bath Deposition Method, 'National conference BITCON-2017 on Research Challenges in Nano Science & Technology', held at Bhilai Institute of Technology, Durg on March 28, 2017.
4. K. K. Pathak, Mimi Akash Pateria, **Kusumanjali Deshmukh** and Piyush Jha, Photoluminescence Study of Sm doped CdSe Nanocrystalline Thin Film Prepared by Chemical Bath Deposition Method, 'National Conference on Signal Processing, Sustainable Energy Materials and Astronomy and Astrophysics (NSSEMA -2017)', held at SOS in Electronics & Photonics and SOS in Physics & Astrophysics Pt. Ravishankar Shukla University, Raipur on March 28-30, 2017.
5. K. K. Pathak, Goverdhan Yadu, Mimi Akash Pateria, **Kusumanjali Deshmukh**, and Piyush Jha, Comparative studies on optical properties of CdSe, CdSe:Ag and CdSe:Mn nanocrystalline thin film, 'National Seminar on Value and Importance of Mathematical Physics', held at Govt. Rajeev Lochan College, Rajim on Dec 5, 2015.
6. K. K. Pathak, Goverdhan Yadu, Mimi Akash Pateria, **Kusumanjali Deshmukh**, and Piyush Jha, Optical properties of CdSe nanocrystalline thin film, 'National Conference on Recent Advances in Physics (NCRAP-2015)', held at Sant Guru Ghasidas Government Post Graduate College Kurud Dist-Dhamtari (C.G.) October 28-29, 2015.
7. K. K. Pathak, Goverdhan Yadu , Mimi Akash Pateria, **Kusumanjali Deshmukh**, and Piyush Jha, Optical properties of CdSe nanocrystalline thin film by chemical deposition method, 'National Seminar on emerging Trends in Physics (ETP-2015)', held at Sant Guru Ghasidas Government Post Graduate College Kurud Dist-Dhamtari (C.G.) 07 Sep 2015.
8. **K. Deshmukh\***, M.Mukherjee, S. Bhushan and R. C. Agrawal: Optical and characterization studies of nanocrystalline (Cd-Pb)S films prepared by chemical bath deposition method. NCLA 2011, RSU, Raipur,(C.G.),India
9. **Kusumanjali Deshmukh\***, M. Mukherjee and S.Bhushan: Synthesis and Optical Property Characterization of Nanocrystalline CdS Films Prepared By Chemical Bath Deposition Method. Recent Advances in Nanoscience and Nanotechnology, 2009, SSCET, Bhilai,(C.G.),India
10. **Kusumanjali Deshmukh\***, M. Mukherjee and S.Bhushan: Characterization of Chemically Synthesised Nanocrystalline Cadmium Sulphide films. ISRS 08, IIT Madras, (T.N.), India.
11. **Kusumanjali Deshmukh**; "Modeling of [0.75AgI:0.25AgCl] by Space Charge Depolarisation Technique"; 5th Chhatisgarh Young Scientist Congress; Chhatisgarh

Swami Vivekanand Technical University, Bhilai; 28Feb-01March' 07); received young scientist award.

12. Mohan L. Verma, **Kusumanjali Deshmukh**, Anil Choubey; "Modeling and Determination of Drift Mobility in Quenched [0.75AgI:0.25AgCl] at room temperature"; National Conference BITCON-2007 B.I.T,Durg (16-17 March 2007)
13. Mohan L. Verma, **Kusumanjali Deshmukh**, M.Mukherjee; A review article:Recent Trends in composite Materials; Recent Trends in Electronic Materials & Physical Sciences"; ST. Thomas College, Bhilai(16-17 Sep. 2007).
14. Mohan L. Verma, **Kusumanjali Deshmukh**, Anil Choubey; "Evaluation of TMM in [0.75AgI:0.25AgCl]: A mathematical modeling"; Recent Trends in Physics; Deptt. of Physics, Bhilai Mahila Mahavidyalaya, Bhilai;(25-27 Feb. 2007)

### **Training Programmes/Workshops Attended:**

1. **Two-week Online Faculty Development Programme** on "Managing Online Classes & Co-creating MOOCS 6.0" organized by Teaching Learning Centre, Ramanujan College, University of Delhi under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, 5th – 19<sup>th</sup> July 2021.
2. **Two-week Online Faculty Development Programme** on "ICT Tools for Teaching, Learning Process and Institute" jointly organized by Electronics and ICT Academies under the "Scheme of financial assistance for setting up of Electronics and ICT Academies" of the Ministry of Electronics and Information Technology (MeitY), Government of India, 10th - 21st August, 2020
3. **Two days Workshop** on "Computer Interfaced science Experiments using ExpEYES jointly" organized by SoS in Electronics & Photonics, Institute of Renewable Energy Technology & Management at Pt. RSU, Raipur, CG and Inter University Accelerator Center, New Delhi, 30th to 31st March 2019.
4. **One week workshop** on "*Materials Modeling for Device Applications*" sponsored by CSVTU, Bhilai under TEQIP-III at Shri Shankaracharya Technical Campus, Bhilai, 18<sup>th</sup>-23<sup>rd</sup> Feb., 2019.
5. **Two week workshop** on "Engineering Physics" organized by NME through ICT at the Remote Center, BIT, Durg, 8-18 December, 2015
6. **4 days** International workshop "IWMMS-2013" at Shri Shankaracharya Technical Campus-Shri Shankaracharya Group of Institutions, Bhilai, 24-27 Feb, 2013
7. **One week workshop** on "Laboratory workshop for PG teachers" at ISLE, IPS academy Indore, 4 - 8 Feb, 2013.
8. **Two days' National workshop** "NWPAL-09" at Shri Shankaracharya College of Engineering & Technology, Bhilai, in association with LSI, India, 3-4 Dec, 2009
9. **One week short term course** on "Recent Trends in Material Science" at NIT , Raipur (C.G.), during 27- 31, 2008
10. **Two days' workshop** on "Teacher training program WIPT-08" at Shri Shankaracharya College of Engineering & Technology, Bhilai, 30-31st Dec 2008
11. **Richard Feynman Lecture Series** organized by CSVTU, Bhilai, 1,6,11,22,23 Dec 2006



**Personal Details:**

Husband's Name : Shri S.N. Deshmukh  
Date of Birth : 25<sup>th</sup> Jan. 1975  
Nationality : Indian  
Address for correspondence : Flat No. 145, CHPL Shikhar Apartments  
Junwani Main Road , Smriti Nagar,  
BHILAI, Chhattisgarh-490020

**Declaration:**

I hereby declare that all the aforesaid information is true and correct to the best of my knowledge and belief.

**(Dr. Kusumanjali Deshmukh, Ph.D.)**