

## Curriculum Vitae

**Name: Dr. UMESH KUMAR**

### **University Education:**

- Ph.D. Ph.D. Department of Chemistry, **University of Delhi** and **National Physical Laboratory**, Delhi under the supervision of Prof. Rita Kakkar, thesis entitled -"Synthesis and Characterization of Nanostructured Semiconducting Materials and Composites"
- M.Sc. Masters in science in Chemistry (Specialization in Physical Chemistry, at Kirori mal college, **University of Delhi** (India)
- C. Course Certificate course in forensic science, Department of Anthropology, **University of Delhi**, (India)
- B.Sc. Bachelors in science (Hons) in Chemistry at Zakir Husain College, **University of Delhi**, (India)

### **Teaching- Experience:** (Teaching since 2009)

- ❖ Assistant Professor in Chemistry at Dyal Singh College, University of Delhi, India (2009 Aug. – 27 April 2011)
- ❖ Assistant Professor in Chemistry at Kirori Mal College, University of Delhi, India (7 Feb. 2011 – May 2015)
- ❖ Assistant Professor in Chemistry at Shyam Lal College, University of Delhi, India (2015 Aug.)
- ❖ Assistant Professor in Chemistry at Bhaskaracharya College of applied Sciences, University of Delhi, India (2017 July –present)

### **Research Publications:**

#### **List of significant publications in International Journals:**

1. Role of surface modification of colloidal CdSe quantum dots on the properties of hybrid organic-inorganic nanocomposites. *Colloid Polym. Sci.* (2010) **288: 841-849.**
2. Surface modification of CdSe quantum dots for biosensing applications: role of ligands. *Thin Solid Films*, 519(3), 1202-1212
3. Size- and shape-controlled synthesis and properties of colloidal PbSe Nanocrystals *Materials Chem. Phys.* (2009) **113: 107-114.**
4. Hybrid organic-inorganic (MEH-PPV/P3HT: CdSe) nanocomposites: Linking film morphology to photostability. *Eur. Phys. J. Appl. Phys.* **50(2) 20602.**
5. Formation of water-soluble and biocompatible TOPO-capped CdSe quantum dots with efficient photoluminescence. *J. Mater. Sci.: Mater. Med.* **20: S123-S130.**
6. Effect of surface passivating ligand on structural and optoelectronic properties of polymer: CdSe quantum dot composites. *J. Phys. D: Appl. Phys.* **41: 235409 (9pp).**

7. Role of surface texturization on the gas-sensing properties of nanostructured porous silicon films. **Physica E (2007) 36: 65–67.**
8. A novel non-TOPO route for the synthesis of colloidal CdSe quantum dots with high luminescence and stability. *Physics of Semiconductor Devices*, 2007843 - 846.

**Conference proceedings:**

1. “Novel advancement: reference to Nano chemistry, polymer and biochemistry” (**Invited talk**) in National Conference on Novel Advancement in Applied Chemical Science held in SS Jain Subodh (autonomous) P.G. College, Jaipur, January 27-28, 2020.
2. Towards Greener Nanosynthesis Of Core-Shell CdSe-ZnSe Quantum Dots, Abstracts of ICONTOX 2008, Lucknow, India, February 5-7, 2008, S63 (**Invited Paper**).
3. Role Of Surface Modification On The Properties Of Colloidal CdSe And Hybrid Organic- Inorganic Quantum Dots, Proceedings of International Conference of Nanomaterials held at AIT, Gurgaon, Dec. 18-22, 2007 (**Best Poster Award**).
4. Synthesis And Characterization Of Lead Selenide Quantum Dots For Organic Solar Cells Application, Proceeding of 18th International Photovoltaic Science and Engineering Conference (PVSEC-18) held at kolkata, January 19-23, 2009 (**Oral Presentation**).
5. A novel non- TOPO route for the synthesis of colloidal CdSe quantum dots with high luminescence and stability, Proceedings of the XIVth International Workshop on Physics of Semiconductor Devices (IWPSD), held at IIT Mumbai during 16-20<sup>th</sup> Dec., 2007, page (**Oral Presentation**).
6. Hybrid Organic-Inorganic Nanocomposites: Linking Film Morphology to Photostability, Proceeding of 18<sup>th</sup> International Photovoltaic Science and Engineering Conference (PVSEC-18) held at Kolkata, January 19-23, 2009 (**Oral Presentation**).
7. Role of Ligands on the Photophysics of Colloidal CdSe Quantum Dots, **Umesh** Proceedings of the APAM held at NPL, New Delhi, December 18-21, 2008, (**Poster presentation**).

8. Band Gap Engineering of Alloyed Semiconductor Quantum Dots (CdSeTe) using CdO precursor one-pot synthesis approach,  
Proceedings of the International Conference on Materials for Advanced Technologies, ICMAT held in Singapore during 1<sup>st</sup>-6<sup>th</sup> July, 2007, **(Oral Presentation)**.
9. Role of capping agents and growth temperature on the structural and morphological properties of colloidal PbSe quantum dots,  
Proceedings of the MRSI (Materials Society of India) held at NPL, New Delhi, on March 12-14, 2007, **(Poster presentation)**.
10. Role Of Ligands On The Photophysics And Photochemistry Of Colloidal CdSe Quantum Dots,  
Paper presented at the 8th Workshop on Biosensors and Bioanalytical  $\mu$  - techniques in environmental and clinical analysis, held at Goa, Oct. 3-6, 2007 **(Oral Presentation)**.
11. Hybrid Organic-Inorganic Nanocomposites: Size Dependence and Stability Studies,  
Paper presented at (Symp. M) at IUMRS-ICAM, 2007 held at Bangalore during 8-13<sup>th</sup> October 2007 **(Oral presentation)**.

**Note: Participated in and coordinated various webinars and conferences in the year 2017-2022.**

**Awards:**

1. CSIR-UGC JRF(2004)
2. Best Poster award (International Conference of Nanomaterials held at AIT, Gurgaon)
3. Second Prize, Interdepartmental General Quiz Competition (Zakir Husain College)

**Administrative Experience**

1. Worked as **Convener** of Kirori Mal College Gym committee from 2012-May 2015.
2. Worked as **Deputy Coordinator** of **Antardhvani** Program of the University of Delhi in February 2013 represented Kirori mal college.
3. **Hosted the Annual Day function of the Kirori Mal College** in March 2013.
4. **Organized the Founder's Day** function of the **Kirori Mal College** in February 2013.
5. Worked as **Deputy Superintendent** of **College Semester Examination** April-May 2013 in **Kirori Mal College** .
6. Worked as **Deputy Superintendent** of **SOL Examination** May-June 2013, **Kirori Mal College**.

7. As **Deputy Superintendent of Examination**, Conducted Various Entrance examinations (M.A. Economics, M.A. English, M.A. Mathematics, LLB, LLM, B.Ed., FMS-Management Examination) of Delhi University from 2012 to 2015, in **Kirori Mal College**.
8. As **Deputy Superintendent** Of examination conducted Entrance examinations of Tejpur University and Gautam Buddha University in Kirori Mal College in May-June 2013.
9. Worked as **Deputy Coordinator of Evaluation Center** of the University of Delhi for Political Science Paper in May-June 2013 in K M College.
10. Worked as **Deputy Coordinator of Evaluation Center** of **FYUP-foundation** courses in Nov./ Dec. 2013 in K M College.
11. Worked as **Deputy Superintendent of College Examination** Nov-Dec. 2013.
12. Worked as **Deputy Coordinator of Evaluation Center** for Political Science and Mathematics in Nov. /Dec. 2013 in College.
13. **Member of** Founder's day committee **and Hosted** Founder's day, February 2014.
14. Worked as **Deputy Coordinator** of **Antardhvani Programme of the University of Delhi**, February 2014.
15. Worked as **Co-Convener** of Eco-club in the year 2014.
16. Worked as **Deputy Superintendent of College Examination**, Nov-Dec.2014.
17. Worked as **Deputy Coordinator of Evaluation Center** of the University of Delhi for Political Science in Nov. /Dec. 2014 in College.
18. Worked for the department of Chemistry in organizing conferences/Seminars/ Lectures/ Cultural festivals.
19. Worked as a member of the **e-library** of Kirori mal college.
20. Worked as an active member of the committee for organizing the student Union festival in various years from 2011 to 2013.
21. Convenor of the Photography club, BCAS, University of Delhi from 2018-2022.
22. Member of the various staff council committees and clubs of the BCAS, DU from 2017-2022.

### **Personal Details**

**Name: UMESH KUMAR**

**Father's Name: Shri Subhash Chand Sharma**

**Marital Status: Married**

**Sex: Male**

**Nationality: Indian**

**Date of Birth: 20 May 1978**

**Category: General**

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