

## Dr. Ayush Khare

Assistant Professor  
Department of Physics  
NIT, Raipur - 492 010  
094252-13445, (0771) 4052486 (Res.)

**Res.:** Warden Residence, Hostel-C  
NIT Campus, Raipur - 492 010

**E-mail:** akhare.phy@nitrr.ac.in  
ayush\_khare139@yahoo.co.in  
ayushkhare139@gmail.com



## Educational Qualifications

S. No.	Degree	University/Board	Year of passing	Division
1	High School	M.P. Board, Bhopal	1992	I
2	Higher Secondary	M.P. Board, Bhopal	1994	I
3	B. Sc. (PCM)	Dr. Hari Singh Gour University, Sagar (M. P.)	1997	I
4	M. Sc. (Physics)	Pt. R. S. University, Raipur (C.G.)	1999	I
5	Ph. D. (Solid State Physics)	Pt. R. S. University, Raipur (C.G.)	2006	-
	<b>Ph. D. title:</b> Electroluminescence In Some Chemically Deposited Films			

## Work and Research Experience

- ▶ Teaching experience - 12 years, Research experience - 07 years
- ▶ Worked as Reader and Head, Department of Physics at Raipur Institute of Technology (RITEE), Raipur during July 2000 - July 2008. Joined NITRR in July-2008.
- ▶ Pursued Ph. D. from Pt. Ravishankar Shukla University, Raipur (C.G.) under the supervision of **Dr. Shashi Bhushan**, Retd. Professor and Head, School of Studies in Physics and Dean, Faculty of Science. The title of thesis was "**Electroluminescence in Some Chemically Deposited Films**" (2002-2006).

- Areas of interest include electro-optical and structural studies of nano phosphors.

## Research Papers Published in International Journals

- (i) **Ayush Khare** and Shashi Bhushan, Electroluminescent Studies of Chemically Deposited (Zn-Cd)S:Cu, F Films; **Crystal Research and Technology** 41 (7) (2006) 689-697.
- (ii) **A. Khare** and S. Bhushan, Effects of KI/LiF/CdCl<sub>2</sub> on Photoluminescent and Electroluminescent Properties of Nanocrystalline (Zn-Cd)S: Cu Films; **Radiation Effects and Defects in Solids** 161 (11) (2006) 631-644.
- (iii) **Ayush Khare**, Characterization of Chemically Deposited (Zn-Cd)S: Cu Nano-Crystalline Films; **Journal of Optoelectronics and Advanced Materials** 11 (11) (2009) 1805-1809.
- (iv) **Ayush Khare**, Effects of the Zn Concentration on Electro-Optical Properties of Zn<sub>x</sub>Cd<sub>1-x</sub>S Films; **Chalcogenide Letters** 6 (12) (2009) 661-671.
- (v) **Ayush Khare**, Effects of Copper Concentration on Electro - optical and Structural Properties of Chemically Deposited Nanosized (Zn-Cd)S: Cu films; **Journal of Luminescence** 130 (7) (2010) 1268-1274.
- (vi) T. Abdul Kareem, A. Anu Kaliani and **Ayush Khare**, Characterization of Mn doped ZnS Nanocrystalline Powder Dispersed in Polyvinyl Alcohol, **Arabian Journal of Chemistry** (2010, in press).
- (vii) Smriti Agrawal and **Ayush Khare**, Effect of La on Optical and Structural of CdS- Se Films; **Arabian Journal of Chemistry** (2011, in press).
- (viii) **Ayush Khare**, D. S. Kshatri and R. B. Sahu, Structural and Optical Properties of Chemically Deposited Nanocrystalline CdS Films, **Journal of Ovonic Research** 7 (2) 2011 36-43.

**(ix) Ayush Khare**, R. B. Sahu and Suchinder K. Sharma, Effects of NaF on Optical and Structural Properties of  $Cd_xZn_{1-x}S$  Nano Crystalline Films, **Optik** (in press).

**(x) Ayush Khare** and R. B. Sahu, Optical and Structural Properties of Nanocrystalline CdS Thin Films Grown by Chemical Bath Deposition, **Advanced Materials Research** (in press).

**(xi) Ayush Khare**, Factors Affecting the Electro - optical and Structural Characteristics of Nanocrystalline  $Zn_{1-x}Cd_xS$  Films, **Journal of Physics and Chemistry of Solids** (under review).

### Research Papers Published in National/International Seminars/Conferences

(i) S. Bhushan and **Ayush Khare**, National Seminar on Luminescence and its Applications (NSLA-2003), NPL, New Delhi, Feb. 12-14, 2003 p.220.

(ii) **Ayush Khare** and S. Bhushan, International Conference on Luminescence and its Application (ICLA-2004), BARC, Mumbai, Feb. 09-12, 2004 p.362.

(iii) S. Bhushan, S. Shrivastava, T. Chandra, **A. Khare**, M. Mukherjee, Fourth International Conference on Inorganic Materials, Antwerp University, Belgium, Sept. 19-21, 2004 p.106.

(iv) **Ayush Khare** and S. Bhushan, National Seminar on Luminescence and its Applications (NSLA-2005), Bangalore University, Bangalore, Feb. 02-04, 2005 p.386.

(v) **Ayush Khare** and S. Bhushan, International Conference on Optics and Optoelectronics (**ICOL-2005**), IRDE, Dehradun, Dec. 12-15, 2005 p.452.

(vi) **Ayush Khare** and S. Bhushan, National Seminar on Luminescence and its Applications (**NSLA-2006**), Amravati University, Feb. 7-9, 2006 p.127.

(vii) **Ayush Khare** and S. Bhushan, International Workshop on Advances Materials and Technologies for Nano and Oxide Electronics (**AMTNOE-2007**), IIT, Delhi, Feb. 19-22, 2007 p.61.

(viii) **Ayush Khare** and S. Bhushan, National Conference on Physics of Nano Structured Functional Materials (**BITCON-2007**), **BIT, Durg**, March 16-17, 2007 p.37.

(ix) Shashi Bhushan and **Ayush Khare**, 2<sup>nd</sup> International Conference on Optics and Laser Applications (**ICOLA-2007**), University of Indonesia, September 5-7, 2007 p.60.

(x) **Ayush Khare**, 1<sup>st</sup> International Conference on Trends In Optics and Photonics (**IConTOP-2009**), University of Calcutta, March 1-4, 2009, p. 73.

(xi) **Ayush Khare** and S. K. Pandey, Photoluminescent Studies of Nano Crystalline Thin Films Prepared by Chemical Bath Deposition Technique; Proceedings Paper Vol. 7743 77430A (2010) **SPIE Digital Library**.

(xii) **Ayush Khare**, D. S. Kshatri and R. B. Sahu, International Conference Fundamentals and Applications of Nano Science and Technology (**ICFANT-2010**), Jadavpur University, Kolkata, December 9-11, 2010 p.145.

(xiii) **Ayush Khare** and D. S. Kshatri, Abstract Book of International Conference on Functional Polymers organized by NIT Calicut during January 28-30, 2011.

(xiv) **Ayush Khare** and R. B. Sahu, International Conference for Nano Materials Synthesis and Characterization (**INSC-2011**) organized by The X-ray Application Society of **Malaysia**, July 4-5, 2011 p.68.

## Research Papers Presented in National/International Seminars/Conferences

S. No	Month & Year	Name of Event	Organizer
.			

<b>1</b>	28 Feb.-01 March, 2005	3 <sup>rd</sup> Chhattisgarh Young Scientists Congress ( <b>CYSC-2005</b> )	Pt. R. S. University, Raipur, India
<b>2</b>	19 <sup>th</sup> April, 2005	National Science Day Celebration ( <b>NSD 05</b> )	SSCET, Bhilai
<b>3</b>	28 Feb.-01 March, 2006	4 <sup>th</sup> Chhattisgarh Young Scientists Congress ( <b>CYSC-2006</b> )	IGKV, Raipur
<b>4</b>	February 6- 7, 2009	National Conference on Need of Value Education in Engineering	SRI-Tech, Raipur
<b>5</b>	January 22- 24, 2010	All India Conference on Engineering and Sciences ( <b>AICON'10</b> )	CSIT, Durg
<b>6</b>	June 14-16, 2011	13 <sup>th</sup> Conference of International Academy of Physical Sciences ( <b>CONIAPS</b> )	University of Petroleum and Energy Studies, Dehradun

► Research paper entitled **“Opto-electronic Properties of Electroluminescent  $Zn_xCd_{1-x}S$  Nanocrystals in Polymers”** was accepted for presentation in 6<sup>th</sup> International ECNP Conference on Nanostructured Polymers and Nanocomposites held in **Madrid, Spain** during April 28-30, 2010.

► Research paper entitled **“Structural and Optical Properties of Chemically Deposited CdS Nanocrystalline Films”** was accepted for presentation in 7<sup>th</sup> International Conference on Inorganic Materials organized by **ELSEVIER** in **Biarritz, France** during September 12-14, 2010.

### [List of Training Programmes/Workshops/Schools Attended](#)

- (i) Faculty Development Programme on **“Innovation in Physics Practical”** held at IPS Academy, Indore in February - 2002.

- (ii) Workshop on **“Education Psychology”** organized by Chhatrapati Shivaji Institute of Technology (CSIT), Durg in July - 2005.
- (iii) National Workshop on **Physics and Applications of Luminescence to Nano-Science, Radiation Dosimetry and Geology (NWPAL-2009)**, organized by Shri Shankaracharya College of Engg. and Technology (SSCET), Bhilai in association with Luminescence Society of India in December - 2009.
- (iv) National Workshop of Utsahi Physics Teachers **(NWUPT-2010)** organized by National Academy of Science India (NASI) at **Department of Physics, IIT, Kanpur** during May 20-25, 2010.
- (v) National Workshop on Advanced Materials and Technology **(NWAMT-2011)** organized by Institute of Technology and Research **(ITER), Bhubneshwar** during April 22-23, 2011.
- (vi) International Workshop for Nano Materials Synthesis and Characterization organized by The **X-ray Application society of Malaysia** during July 6-7, 2011.

## Foreign Visits

1. Visited Yogyakarta, Indonesia in September 2007 to present research paper entitled “Electro-Optical Studies of Chemically Deposited  $Zn_xCd_{1-x}$  Nano Crystalline Films” in 2<sup>nd</sup> International Conference on Optics and Laser applications (ICOLA-2007) organized by **University of Indonesia**.
2. Visited Selangor, Malaysia in July 2011 to present research paper entitled “Optical and Structural Properties of Nanocrystalline CdS Thin Films Grown by Chemical Bath Deposition” in International Conference and Workshop for Nano Materials Synthesis and Characterization (INSC2011) organized by The **X-ray Application society of Malaysia**.

## Short Term Course organized

1. Worked as Co-coordinator in organizing **Short Term Course** on **RECENT TRENDS IN MATERIAL SCIENCE** during December 27 - 31, 2008 at NIT, Raipur (C.G.).

## Professional Affiliations

- (i) Life Member, Indian Physics Association (**IPA**), Mumbai
- (ii) Life Member, Indian Society for Technical Association (**ISTE**), New Delhi
- (iii) Life Member, Indian Association of Physics Teachers (**IAPT**), Kanpur  
Member of Executive Council of **IAPT** (Jan. 2010 - Dec. 2012)
- (iv) Life Member, Optical Society of India (**OSI**), Kolkata
- (v) Member, American Nano Society (**ANS**)
- (vi) Annual Member, Forum of Scientists and Technologists (**FOST**), Raipur

## Awards and Recognition

- (i) President of Post Graduate Physics Association at Govt. P.G. College, Jagdalpur during 1998-99.
- (ii) Secured 1<sup>st</sup> rank in M. Sc. (Physics) in 1999.
- (iii) Stood 2<sup>nd</sup> in "Physics and Electronic Science" section of 3<sup>rd</sup> Chhattisgarh Young Scientist Congress (CYSC-05) held Pt. Ravishankar Shukla University, Raipur
- (iv) Won 2<sup>nd</sup> runner-up prize in paper presentation in National Science Day celebrations held at **SSCET, Bilai** in April-2005.
- (v) Won 1<sup>st</sup> prize in Essay writing competition (in hindi) held during observation of "**Hindi Pakhwada-2010**" at NIT, Raipur.

## Journal Reviewer/ Board Member

(i) Member, Editorial Board, American Journal of Condensed Matter Physics

(ii) Reviewer, Advances in Applied Research, Coimbatore, India

(iii) Reviewer, International Journal of Physical Sciences, China

(iv) Reviewer, Science Journal of Physics

## **Ph. D. Supervision**

**Name of Research Scholar:** Mr. Dharendra Singh Kshatri,SSIPMT, Raipur (PT)

## **Visiting Lectureship**

Visited Faculty of Agricultural Engineering, Indira Gandhi Krishi Vishwavidyalaya, Raipur for teaching Physics-1 (EPH-111 & EPH-121) to B. Tech. (Agril. Engg.) students of BRSM College Agricultural Engineering and Technology in the academic session 2007-08.

## **Expert Lecture**

1. On **Analysis on value Education** at SRI-Tech, Raipur during February 6-7, 2009.

2. On **Electroluminescence-A Review** at CSIT, Durg during January 22-24, 2010.

## **Academic/ Administrative Responsibilities**

- a. Warden, Boys Hostel - C (Tirathgarh)
- b. In-charge, Dept. Library
- c. Member, Library Committee
- d. Founder Member, RAAGA-The Music Club
- e. Member, Literary Committee

## Others

- (i) **Subject Expert** in interviews conducted by Directorate, Technical Education, Govt. of Chhattisgarh
- (ii) **Member**, National Advisory Committee, National Conference on Laser and Optical Science held at Dibrugarh, Assam
- (iii) **Subject expert for CBSE**, New Delhi
- (iv) Worked as Coordinator in organizing **Blood Donation Camp by Red Cross Society**, Raipur in Raipur Institute of Technology, Raipur in the year 2007 and 2008.
- (iv) **Chief Editor**, Nanhi Duniya (the first nano science magazine for school students) For details visit: [www.nanhiduniyaa.blogspot.com](http://www.nanhiduniyaa.blogspot.com)
- (v) Visited many schools/institutes as **Judge** for Science Exhibition, Model competition, science talks etc.