Curriculum Vitae

Dr. Rachna Ahlawat
Assistant Professor
Department of Physics
Chaudhary DeviLal University,
Sirsa-125055(Haryana) India.
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SKILLS PROFILE:

Educational Qualifications	**Ph.D., M.Sc., B.Sc., B. Ed., CSIR-UGC (NET- JRF).**

Classes	Boards/Universities	Year of Passing	Division/ Grade	%age of Marks
10th	B.S.E.H. (Bhiwani) India	1999	Excellent (Merit)	77.16 %
12th	- do-	2001	Good (Second)	52.5 %
B.Sc. (Non-Medical)	M.D.U. Rohtak (India)	2004	Very Good (First)	69.58 %
M.Sc. (Physics)	Ch. Devi Lal University, Sirsa (India)	2006	Excellent (Merit)	78.66 %
B.Ed. (Science)	M.D.U. Rohtak (India)	2007	Very Good (First)	73.7 %
Ph.D.	Ch. Devi Lal University, Sirsa (India).	March- 2014	Excellent Grade A+	-
CSIR-UGC (JRF-NET) Exam	CSIR-UGC Govt. of India	June -2007	Passed with Fellowship	-

Teaching Experience: *Approximately Eight years*

Assistant Professor (Senior Scale)	From 22 Aug. 2013 to till date in Deptt. of Physics (C.D.L.U., SIRSA) Haryana, INDIA.
Assistant Professor	From 22 Aug. 2008 to 21 Aug. 2013 in Deptt. of Physics (C.D.L.U., SIRSA) Haryana, INDIA.

Research Experiences: More than eight years

Ph.D. Topic: **"SYNTHESIS OF SOME OPTICAL MATERIALS BY SOL-GEL TECHNIQUE AND THEIR STRUCTURAL CHARACTERIZATION".**

M.Sc. Project Guidance Experience: Project of twenty students has been completed for M.Sc. and under my guidance.

Published Research Papers in Journals/Books/Proceeding of Conferences

A. Research Papers Published in International Research Journals

[1] "Time resolved spectroscopy in laser grade organic dyes", D.S. Ahlawat, A. K. Sharma, L. Taneja, **Rachna**, R.D. Singh, Optics Communications, 282 (2009) 4256-4258. Journal Abbreviation: *Opt Commun*, ISSN: 0030-4018, **Impact Factor: 1. 542**.

[2] "Optical Fiber Characterization by Optical Time Domain Reflectometer", Dharamvir Singh Ahlawat**,** Vipin Gupta, **Rachna** and Mahipal Singh Gill, International Journal of Applied Engineering Research, Vol 7, No. 11, (2012) 1818-1822. Print ISSN 0973-4562, Online ISSN 1087-1090.

[3] "Y_2O_3:SiO_2 Binary Oxide: Synthesis and Structural Characterization", **Rachna** and P. Aghamkar, JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, Vol. 15, No. 9-10 (**2013)** 1032-1036. Journal Abbreviation: OPTOELECTRON ADV MAT, Journal ISSN: 1842-6573. **Impact Factor: 0.563**.

[4] "Morphological and Optical Investigation of Y_2O_3:SiO_2 Powder by Wet Chemical Process", **Rachna** and P. Aghamkar, Optical Materials, 36 (2013) 337-341. ISSN: 0925-3467, **Impact Factor: 2.075**.

[5] "Synthesis and Characterization of Sol–Gel Prepared Silver Nanoparticles", Dharamvir Singh Ahlawat, Rekha Kumari, **Rachna** and Indu Yadav, International Journal of Nanoscience, Vol. 13, No. 1 (2014) 1450004 (8 pages). Journal Abbreviation: *Int. J. Nanosci.* ISSN: 0219-581X (print) 1793-535.

[6] "Synthesis of some optical materials by sol-gel technique and their structural characterization, Rachna Ahlawat, Int. Arch. Sci. Technol., 2014, 14 (1), 9-15. Journal Abbreviation: *Int. Arch. Sci. Technol*, ISSN 2347 – 8853, **Impact Factor (GS): 1.5**.

[7] "Influence of Annealing Temperature on Y2O3:SiO2 Nanocomposite Prepared by Sol-Gel Process," R. Ahlawat and P. Aghamkar, ACTA PHYSICA POLONICA A, Vol. 126, No. 3 (2014) 736-739. Journal Abbreviation: *Acta. Phys. Pol. A,* **Impact Factor: 0.604**, ISSN: 0587-4246 (print) 1898-794X (web).

[8] "Effect of Concentration and Temperature on the Surface morphology of Gd_2O_3 Nanocrystallites in Silica", Rachna Ahlawat, accepted in Int. J. Appl. Ceram. Technol., 1–9 (2014), DOI:10.1111/ijac.12343, Online ISSN: 1744-7402, **Impact Factor: 1.215**.

[9] "Characteristics and quality of grown potassium thiourea iodide crystal for second harmonic generation", D. S. Ahlawat, Krishan Kumar, Rachna Ahlawat and Sandeep Kumar, Journal of Materials Science Materials in Electronics 01/2015; 26 (4). DOI: 10.1007/s10854-015-2671-6, **Impact Factor: 1.97.**

[10] "Preparation and Effect of Thermal Treatment on Gd_2O_3:SiO_2 Nanocomposite"

Rachna Ahlawat, Mod. Phys. Lett. B, 29, 1550046 (2015) [7 pages] DOI: 10.1142/S0217984915500463, Volume 29, Issue 11, published on 30 April 2015 **Impact Factor: 0.687.**

[11] "Effect of Temperature on Densification of Y_2O_3:SiO_2 powder", Rachna Ahlawat, published in International Journal of Advanced Technology in Engineering and Science (ISSN 2348-7550) vol. 03, Issue S.I.(02), Feb. 2015. **Impact Factor (GS): 1.012.**

[12] "Influence of multi-step annealing on nanostructure and surface morphology of Y_2O_3:SiO_2 powder" Rachna Ahlawat, in Ceramics International 41(2015)7345–7351 **Impact Factor: 2.086.**

[13] "Influence of annealing temperature on structural and optical properties of SiO_2:RE_2O_3 [RE = Y, Gd] powder", Rachna Ahlawat, Journal of Alloys and Compounds 638 (2015) 356–363, on 09.03.2015, **Impact factor: 2.726**.

[14] "Gd_2O_3:SiO_2 Nanocomposite: Study on Structural and Optical Behavior", Rachna Ahlawat, published in Int. J. Appl. Ceram. Technol., 1–5 (2015) DOI:10.1111/ijac.12405, Online ISSN: 1744-7402, **Impact Factor: 1.215**.

[15] "Concentration dependent structural behavior of Gd2O3 nanocrystallites dispersed in silica matrix" RACHNA, NIDHI, INDU YADAV, D.S. AHLAWAT, P. AGHAMKAR, JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS Vol. 17, No. 5-6, May – June 2015, p. 640 – 645. **Impact Factor: 0.563**.

[16] "SYNTHESIS AND STRUCTURAL BEHAVIOR OF NANOSIZED RARE EARTH SESQUIOXIDES IN SILICA MATRIX", Rachna Ahlawat, International Journal of Science, Technology & Management , Volume No 04, Special Issue No. 01, May 2015 ISSN (online): 2394-1537.

B. <u>Research Publications (Chapter in Books/Monograph other than refereed journal articles)</u>

[1] "Structural and Surface Morphology of Gd_2O_3:SiO_2 powder**" Rachna Ahlawat**, *in Proceeding of International conference with* ISBN No: 978-93-83842-92-6 *on* Frontiers in Material Research & Applications (FMRA 2014), held from 30-31 October 2014 at Shaheed Bhagat Singh State Technical Campus, Monga Road, Ferozepur-152004, Punjab (India).

[2] "Growth and Characterization of KDP Crystal" Dharamvir Singh Ahlawat, Monika Poonia and **Rachna Ahlawat**, *in Proceeding of International conference with* ISBN No: 978-93-83842-92-6 on Frontiers in Material Research & Applications (FMRA 2014), held from 30-31 October 2014 at Shaheed Bhagat Singh State Technical Campus, Monga Road, Ferozepur-152004, Punjab (India).

[3] "Gd_2O_3:SiO_2 Nanocomposite: Synthesis and Structural Characterization" **<u>Rachna</u>** and P. Aghamkar in the book "Nanotechnology: Novel Perspectives and Prospects" edited by Bhupinder Singh, Anupma Kaushik, S. K. Mehta, S. K. Tripathi (Associate editors: Sonia Kapoor, Satym K. Aggarwal), McGraw Hill Education (India) Private Limited, ISBN No: 13: 978-93-392-2109-6, ISBN 10:93-392-2109-5.

C. <u>Full Papers in Conference proceedings</u>

[1] "Photophysical Properties of Laser Grade Coumarins", **Rachna**, D. S. Ahlawat and R. D. Singh, *in Proceedings of National Conference on Photonics & Materials Science (NCPMS-2008)*, Deptt. of Applied Physics, G.J.U.S.&T.,Hisar-125001, Haryana, India, 24-25 Oct., 2008.

[2] "Adbhut Carbon Aproop: Fullrenes", Dharamvir Singh Ahlawat, Rachna, Sunil Kumari, Proceeding of Akhil Bhartia Rajbhasa Vaganic / Takniki Sangostthi on

Anusandhan tathha Vikas me Gann Parbandhan ki Bhumika, Raksha Vaganic Suchna tathha Parlekhan Kender, New Delhi, 12-13 February, 2009.

[3] "Laser Induced Ultra Fast Processes in Nanostructured Materials", D.S. Ahlawat, **Rachna** and Neelam Godara, *Proceeding of National Conference* on *Modern Development in Engg. & Sciences*, Ambala College of Engg. & Applied Research, Devsthali, Ambala (Haryana), 27-28 Feb, 2009.

[4] "Formation and Technological Applications of Yttria Nanoparticles", **Rachna**, *Proceeding of International Conference on Evolution in Science & Technology & Eyne on Educational Mathodologies (ESTEEM-2013)*, Prannath Parnami Institute of Management & Technology (PPIMT), 20 K.M. Stone, N.H.-65, Choudharywas, Rajgarh Road, Hisar-125001 (Haryana), March 3-4, 2013.

[5] "Photobleaching Study of Rhodamine-B Doped Polymer samples" Dharamvir Singh Ahlawat, Neelam Godara, **Rachna**, D. Mohan, and R.D. Singh, *first National Conference on trends And applications in Laser technology and Optoelectronics (TALTO-1)*, Amity Institute of Laser technology and Optoelectronics (AILTO), Amity Education Valley, Gurgaon, (Haryana), India, 4th April, 2013.

[6] "Optical Fiber Loss Comparison Studied At Four Different Laser Frequencies" Dharamvir Singh Ahlawat, **Rachna** and Vipin Gupta, *in Proceeding of International Conference on Optics and Optoelectronics (ICOL)-2014*, Instruments Research & Development Establishment Dehradun, Uttrakhand (India), 5-8 March 2014.

List of Conference/Seminars attended and Papers Presented

[1] "Photophysical Properties of Laser Grade Coumarins", **Rachna**, D. S. Ahlawat and R. D. Singh, *National Conference on Photonics & Materials Science (NCPMS-2008)*, Deptt. of Applied Physics, G.J.U.S.&T.,Hisar-125001, Haryana, India, 24-25 Oct., 2008.

[2] "Characterization of Binary Oxide- Prepared by Sol-Gel Technique", **Rachna** and P. Aghamkar, *International Conference on Nonomaterials & Nanotechnology*, University of Delhi, Delhi, December 18-21, 2011.

[3] Attended only *International Conference on Energy-Water-Waste Nexus for Environment Management organized* by Department of Energy and Environmental Sciences, Ch. Devi Lal University, Sirsa, India during January 28-30, 2012.

[4] "Synthesis and structural characterization of Y2O3:SiO2 nanocomposite" **Rachna** and P. Aghamkar, National Conference on 'Materials Science: Applications in Energy & Environment', held on March 02-03, 2012 at DAV College Jalandhar, Punjab.

[5] Workshop on Nanostructured Ceramics and other Nanomaterials held on March 13, 2012 at the Department of Physics & Astrophysics, University of Delhi, Delhi, India.

[6] "Influence of annealing temperature on Y2O3:SiO2 nanocomposites prepared by sol gel process" **Rachna** and P. Aghamkar, 'ICWNCN-2012' held on March 14-16, 2012 at the Department of Physics & Astrophysics, University of Delhi, Delhi, India.

[7] "Optical Fiber Characterization by Optical Time Domain Reflectometer", Dharamvir Singh Ahlawat, Vipin Gupta, **Rachna** and Mahipal Singh Gill, Proceedings of the 3rd International Conference on Emerging Trends in Engineering and Technology, Geeta Institute of Management and Technology (GIMT), Kanipla, Kurukshetra (Haryana), India, Nov. 9-11, 2012.

[8] "Study of Sol-Gel Prepared Silver Nano-Particals", Abstracts Book & Souvenir, Dharamvir Singh Ahlawat, Rekha Kumari, Indu Yadav and **Rachna,** National Symposium on Nanotechnology: Interdisciplinary Aspects, YMCA University of Science & Technology, Faridabad (Haryana), Dec. 12, 2012.

[9] "Detection of Water Pollution by Laser Spectroscopy", **Rachna**, Abstract Book, International Conference on Emerging Trends in Physics for Environmental Monitoring and Management (ETPEMM-12), Department of Physics, Punjabi University, Patiala (Punjab), India, Dec. 17-19, 2012.

[10] "Embedded Rare Earth Oxide Nanoclustures in SiO_2 Matrix", **Rachna**, Indu and Minakshi, *National Conference* on Advanced Materials & Devices (NCAMD-2013), Hindu College, Sonipat (Haryana), Feb 27-28, 2013.

[11] "Preparation and XRD Study of Yttria Doped in SiO_2 by Chemical Process", **Rachna Ahlawat**, *National Conference* on Advances in Chemical Sciences (ASC-2013), Department of Chemistry, M. D. University, Rohtak (Haryana), March 1-2, 2013.

[12] "Formation and Technological Applications of Yttria Nanoparticles", **Rachna Ahlawat**, *Proceeding of International Conference* on Evolution in Science & Technology & Eyne on Educational Mathodologies (ESTEEM-2013), Prannath Parnami Institute of Management & Technology (PPIMT), 20 K.M. Stone, N.H.-65, Choudharywas, Rajgarh Road, Hisar-125001 (Haryana), March 3-4, 2013.

[13] "Sol-Gel Technique: Chemical Route to Synthesize New Generation Materials", **Rachna** and Indu Yadav, *National Conference* on New Frontiers in Physics, D. N. College, Hisar (Haryana), March 12-13, 2013

[14] "Synthesis of Cu Doped $Cd_{1-x}ZnS$ Nanomaterial Using Co-precipitation Method", Indu Yadav, Dharamvir Singh Ahlawat and **Rachna**, *National Conference* on Physics of Engineering Materials, Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Haryana), March 15-17, 2013.

[15] "Preparation and Surface Morphology of Yttrium Oxide Doped Silica Nanoparticles", **Rachna** and P. Aghamkar, *National Conference* on Nanoscience and Instrumentation Technology (*NCNIT-2013*), Department of Physics, National Institute of Technology, Kurukshetra (Harayana), March 28-29, 2013.

[16] "Synthesis and Structural study of Gadolinium Oxide in SiO2 Matrix by Sol Gel Process", **Mrs. Rachna Ahlawat**, National Symposium on Emerging Trends in Physics for Ionizing Radiations, Aerogels and Materials Science (ETPRAM- 13), Department of Physics, Punjabi University, Patiala (Punjab), Dec. 13-14, 2013.

[17] "SYNTHESIS AND CHARACTERIZATION OF GDOLINIUM OXIDE NANOCRYSTALLITES IN SILICA MATRIX", Rachna and P. Aghamkar, *International Conference on Science and Engineering of Materials* by School of Basic Sciences and Research, Sharda University, India, 6-8 January, 2014.

[18] "Photoluminescence Study of Gd_2O_3:SiO_2 Nanocomposites", Rachna, *1st Indo-UK Conference on Recent Advances in Chemical Sensors (UGC-UKIERI IUCRACS-2014)* by Gargi College, Siri Fort Road, New Delhi-110049, 10-11 Feb, 2014.

[19] "Gd_2O_3:SiO_2 Nanocomposites: Synthesis and Structural Characterization", Rachna and P. Aghamkar, *International Conference on Nanotechnology in the Service of Health, Environment & Society* by Panjab University, Chandigarh, India, 13-15 Feb, 2014.

[20] Attended Pre-Conference Workshop organized by Panjab University, Chandigarh, India, 12 Feb, 2014.

[21] "Synthesis of Gadolinium Oxide Oxide in SiO_2 Matrix and Its Structural Characterization", Rachna, *National Conference on Recent developments in Chemical Sciences (NRDCS-14)* by Deptt. of Chemistry, G.J.U. S. & T. Hisar , 25-26 Feb, 2014.

[22] "Role of Concentration and Heat Treatment in Gadolinium Doped Silica Nanocomposite", Rachna and P. Aghamkar, 2nd National conference on Photonics & Material Science (NCPMS-2014), by Deptt. of Applied Physics, G.J.U. S. & T. Hisar, March 20-21, 2014.

[23] "Structural and Surface Morphology of Gd_2O_3:SiO_2 powder" Rachna Ahlawat, *in International conference on* Frontiers in Material Research & Applications (FMRA 2014), held from 30-31 October 2014 at Shaheed Bhagat Singh State Technical Campus, Monga Road, Ferozepur-152004, Punjab (India).

[24] "Gd_2O_3:SiO_2 Composites: Gate material for electronic devices", Rachna Ahlawat and Indu Yadav in National Seminar on RAMCEEO-2015 (recent Advancement in Management, Commerce, Education and Engineering Outlook-2015) held during 21-22 Jan, 2015 at JCD Institute of Business Management, Sirsa (Haryana) India.

[25] "Influence of multi step annealing on structural behavior of rare earth oxides doped in silica" Rachna Ahlawat, in National Conference on Applied Physics and Material Science on February 5-6, 2015, organized by Department of Physics, M. D. U. Rohtak, Haryana.

[26] "Effect of Temperature on Densification of Y_2O_3:SiO_2 powder", Rachna Ahlawat, *in International conference* on Science, technology and Management (ICSTM-2015) on 1st February 2015 organized by AR Research Publication.

[27] "Study on Structural and Optical Properties of Some Binary Oxides" Rachna Ahlawat in National Conference ETPMS-2015 (Emerging Trends in Physics and Materials Science) held on March 9-10, 2015, Organized by Department of Physics, Ch. Devi Lal University, Sirsa-125055, Haryana (India).

[28] "Effects of Four Steps Sintering on Y2O3:SiO2 Nanocomposite", Rachna Ahlawat, in 4th INTERNATIONAL CONFERENCE ON CURRENT DEVELOPMENTS IN ATOMIC, MOLECULAR OPTICAL AND NANO PHYSICS WITH APPLICATIONS (CDAMOP-2015) held during MARCH 11th - 14th, 2015 by Department of Physics and Astrophysics, University of Delhi, India-110007.

Conferences/Seminars/Workshop organized:

Year (From – To)	Title	Position	Organized by
March 9-10, 2015	Emerging Trends in Physics and Materials Science (ETPMS-2015).	As an Organizing Secretary	Ch. Devi Lal University, Sirsa (Haryana) (India)

Achievements

1. **Award for CSIR-UGC Junior Research Fellowship (JRF) in the subject Physics by the CSIR, New Delhi, India**
2. **Gold medalist (Topper) of M.Sc. Physics in Ch. DeviLal University, Sirsa (Haryana) India.**
3. **Best Girl student award for the year 2005-06 in Ch. DeviLal University, Sirsa (Haryana) India.**
4. **Has served as referee for papers submitted to repute Journals namely**: Optoelectronics and Advance Materials.

Personal Details:

Date of Birth	16 Feb., 1985
Sex	Female
Permanent Address	Dr. Rachna Ahlawat, Assistant Professor, Department of Physics, C.D.L.U., Sirsa-125055(Haryana) India.
Contact No.	+91- 9466349170 (Mobile)
Nationality	Indian
Language Proficiency	English, Hindi
Marital Status	Married
Father Name	Sh. Subhash Chander
Mother Name	Smt. Sneh Lata

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Dr. Rachna Ahlawat