

CURRICULUM VITAE & PUBLICATIONS



Surname: Ahlawat
Name: Dr. Dharamvir Singh
Affiliation: Deptt. of Physics, Chaudhary Devi Lal University, Sirsa-125055(Hry.)India.
Country: India, Citizenship: India,
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Keywords from area of expertise:

i) Laser physics, Nanomaterials, Plasmaphysics, High energy physics, Laser enhanced electron mobility, DFT. (ii) Multiphoton photoconductivity, Quantum theory, Photoacoustic spectroscopy, PbI_2 , ZnS . (iii) Dye, $XeCl$ & Semiconductor lasers, Optical materials, Laser spectroscopy methods.

Research Articles Published in Journals/Proceedings: 61+20

SCOPUS Indexed Research Publications: 47, Research Citations= 220 (approx.)

Research Guidance: Ph.D. Scholars Supervised: 08, M.Phil. Supervised: 35

Ph.D. Scholars Registered/ Under Progress: 06+ 01

Ph.D. Thesis Examined/Evaluated: 03

Patent under consideration: 01

M.Tech. (Opto-electronics) Dissertation Evaluated & Viva-Voce Conducted: 14

Elsevier/Wiley/Springer/IOP/AIP/WorldScientific Reviews Contributed: 38 (approx.)

Research articles/papers presented in Int./Nat. conferences/seminars/symposia: 35

MOOCS/ Refresher/Orientation Course/FDP/Workshops Attended : 07

Radio Talk Given in 1998 'Pokhran Nuclear Test' All India Radio Station, Rohtak, India.

Number of Books Published: 02 & Invited Lecture Delivered in FDP: 02

Research & Teaching Experience: more than 25 Years

Invited Lecture/Talk Delivered in National/International Conferences: 03

International /National Conference Technical Session Chaired: 04

International Conference OPAL Program Committee Member & Reviewer: 04

Invited Extension Lecture Delivered for PG/UG Physics Students in College/University: 10

Significant Research Contribution: *First Time in Physics Literature in the World;*

(i) Formula for experimental calculation of laser enhanced electron mobility was contributed for the first time in physics literature, Two-photon photoconductivity of ZnS using $XeCl$ laser.*

(ii) Laser enhanced electron mobility for multiphoton transitions was experimentally reported for the first time in wide band gap semiconductor crystal.*

(iii) With $h\nu > E_g$ (band gap) two photon absorption has been reported for the first time in ZnS crystal using XeCl laser. Two-photon photoconductivity of ZnS using XeCl laser*. ***Dharamvir Singh Ahlawat**, Mod. Phys. Lett B, vol. 26, no. 29, (2012)1250194. & R.D.Singh, **D.S.Ahlawat** and Arun Gaur, Modern Physics Letters B, vol. 17, no. 24, (2003)1265.

(iv) Thermal effusivity is reported for the first time in semiconductor materials (PbI_2) using photoacoustics technique. ***D.S.Ahlawat**, D.Mohan, S.K.Goshal, R.D.Singh and Meenakshi Sharma, Study of thermal transport parameters in PbI_2 single crystal using a photoacoustic technique, Modern Physics Letters B, vol. 20, no. 20, (2006) 1253-1260.

(v) Appropriate interpretation of two different band gap values reported for PbI_2 , **D.S.Ahlawat** and R.D.Singh, Band gap energy comparison of lead iodide excited by an Nd:YAG laser, Solid State Communications, vol. 152 (2012) 38-40.

Title of Ph.D. Thesis: Study of Laser Induced Photoconductivity, Optical Gain and Photoacoustics.

Date of Ph.D. Degree Award: 20.01.2003

Life Member: (i) Indian Laser Association (LM-479), RRCAT, Indore, India. (ii) Indian Physics Association (GEN/LM/12840), BARC, Mumbai, India.

Titles of Ph.D. Thesis Supervised: (i) Electronic Structure and Optical Properties of Some Technologically Important Semiconducting Materials, (ii) Influence of Dopants on the Performance of Dye Sensitized Solar Cells, (iii) Growth & Characterization of Semi-Organic Non-Linear Optical Crystals, (iv) Coherent Control of Atomic & Molecular Processes in Intense Laser Fields, (v) Effect of Process Parameters on Synthesis and Characterization of Nickel Zinc Ferrites, (vi) Synthesis, Structural and Optical Characterization of Some II-VI Semiconducting Nanomaterials, (vii) Study of Structural and Magnetic Properties of Some Metal Nanocomposites: Synthesized by Wet Chemical Route, (viii) Study of Electronic and Optical Properties of Some Wide Band Gap Semiconductors.

Awards & Honours: *Awarded by Hon'ble Vice Chancellor, CDLUSirsa for putting on record the distinctive contribution for creation of new knowledge and enrichment of academics and research on 05.09.2019 & 26.01.2019.

***Won the award for best paper presentation in the symposium on "Nanotechnology: Interdisciplinary Aspect (SON:IA-2012)"**, 12/12/2012, YMCA University of Science & Technology, Faridabad (Hry.) India for article "study of sol-gel prepared silver nano-particles".

***Certificates of outstanding contribution in reviewing were awarded in Nov, 2016 & Sept, 2017** in recognition of the contributions made to the quality of the journals (Elsevier) respectively; (i) Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy and (ii) Journal of Alloys and Compounds.

***Certificates of appreciation given by Prof. Sergey Y. Yurish, OPAL'2019 & OPAL'2018** Conference Chairman for participation as a Member & Reviewer in the International Program Committee of the 2nd International Conference on Optics, Photonics and Lasers (OPAL'2019) Amsterdam, 24-26 April, 2019 & 1st Int. Conf. (OPAL'2018) Barcelona, 9-11 May, 2018. <http://www.opal-coference.com> **OPAL'2020 conference is included into the UNESCO_IDL_Laser anniversary celebrations to celebrate the UNESCO international day of light and 60th Anniversary of first laser** operation by Ted Maiman in 1960 to promote awareness of light science and technology in the world. **IPC Member & Reviewer** of the 3rd International Conference OPAL'2020, Tenerife (Canary Islands), **Spain**;

Significant Teaching Contribution: Nuclear and Particle Physics, Quantum Mechanics Laser Physics, Superconductivity and Band Theory of Solids, Electrodynamics and Plasma Physics. I got a golden chance to develop a new Post Graduate Department of Physics at Chaudhary Devi Lal

University, Sirsa(Hry.)India as an **Incharge Deptt. of Physics (Founder I/C from Nov, 2004 to Nov.2007,PGBOS Member)& Additional Charge Boys Hostel Warden (one month,2005)**.As I have worked very-very hard over here for laboratories development since 14th September, 2004 and the Department was successfully runned/developed by me from 14th September, 2004 to 10th October, 2007 with the able guidance of Prof. R.K..Singh. The Department was developed very well with best results in M.Sc Physics and M.Phil Physics courses. Furthermore, syllabi of the subjects for M.Phil Physics course with examination scheme were designed and prepared by me under the able guidance of Prof. R.K. Singh, external Chairperson for the session 2006-07.Ph.D. in Physics program was also started. In addition to that around fifteen M.Phil.dissertations and more than fifteen M.Sc. (Physics) projects supervised by me during the above said period for three years. In the meantime, **ten days intensive PCP lectures for M.Phil. Physics (distance mode) conducted as a PCP-course Coordinator** and courses like research methodology, laser physics and condensed matter physics were taught by me to 190 students under two different sections during the session 2006-2007. From 2007 onwards to till date I am working in the same Department of Physics at CDLU, Sirsa for further development of the Department with other regular/temporary faculties. Plasma Physics, CED, QM, Laser and Particle Physics are my teaching subjects to the students of M.Sc.Physics&Ph.D.course work. Additional Charge, Warden of Boys Hostel-I, CDLU, Sirsa.w.e.f.Oct, 2017 to Jan, 2022.

I have been made **In charge**(1997 to 13.09.2004)of the **Research Laser Lab** having high power lasers make GmbH Germany Ruby/ Nd:YAG lasers and Raman Spectrometer with Double Monochromator, Molectron Nitrogen laser, Deptt.of Physics M.D.University, Rohtak, India.Now currently working at Deptt.of Physics Chaudhary Devi Lal University ,Sirsa,India. I have teaching and research experience of 25 years (approx.)in laser physics, nanomaterials,plasmaphysics,particle physics and electrodynamics at post graduate and research level. **My all Publications, Research Citations, Curriculum Vitae may be seen at Researchgate, Google Scholar and SCOPUS site. As 47 research publications are SCOPUS indexed.** I did Ph.D.in Laser Physics(1996 to 2003) under the able guidance of Prof.(Dr.) R.D.Singh& Prof. Devendra Mohan Nassa from the **Laser Lab. started by Prof T.S.Jaseja,Deptt. of Physics, M.D. University,Rohtak-124101(Hry.) India.** As **Prof.T.S.Jaseja** had worked with **Prof.CharlesH.Townes, USA, Nobel Laureate in Laser Physics** both having joint research publications.

Dr.Dharamvir Singh Ahlawat

Research Articles in Journals

1. "Optical, morphological and thermal investigation of Cu doped ternary semiconducting (Cd_{1-x} Zn_x:Cu) nanomaterials",**Dharamvir Singh Ahlawat**, InduYadav,Optical Materials119(2021)111377, Elsevier, Published online, 24 July 2021
2. "Ce doping induced modifications in structural,electrical and magnetic behaviour of hematite nanoparticles", Vijay Kumar, **Dharamvir S. Ahlawat**, Shah AarifUIIslam, AmrikSingh. Materials Science & Engineering B272 (2021)115327, Elsevier,Published online,27 June 2021.
3. "Effect of heat treatment on the microstructural properties of silica embedded cobalt ferrite nanocomposites", Meenakshi Bansal , **Dharamvir Singh Ahlawat** , Amrik Singh , Vijay Kumar & Shish Pal Rathee Nanocomposites, 6(4),(2020) 158-164. Taylor & Francis. Published online 30 Dec.2020.
4. "Investigation on Key Properties of Solution Grown L-Leucine Hydrobromide Single Crystal: A semi-organic NLO material" ,Shish Pal Rathee, **Dharamvir Singh Ahlawat**,S.A. Martin BrittoDhas, K.K. Maurya, Budhendra Singh and Igor BdikinMaterials Science & Engineering B,264 (2021) 114927, Elsevier, Published online 9 Nov.2020.
5. "Investigations on key aspects of solution growth L-Alanine strontium chloride trihydrate single crystal for non-linear optical and photonic applications", Shish Pal Rathee,

- Dharamvir Singh Ahlawat** , S.A. Martin Britto Dhas , K.K. Mauray , Budhendra Singh , Igor Bdikin Solid State Communications, 319 (2020) 114010. Elsevier
6. "Effect of dopant concentration on structural and optical properties of $Cd_{0.7}Zn_{0.3}S$ semiconducting nanocrystals, Indu Yadav and **Dharamvir Singh Ahlawat**. Materials Science & Engineering B 252(2020) 114450(1-9). Elsevier
 7. "Electronic, mechanical, thermodynamic and optical properties of CdS under pressure, P.K.Saini, **D.S. Ahlawat**, S.Daoud and D.Singh, Indian J. of Pure & Applied Physics, 57 (2019) p.793-802. CSIR-NISCAIR Pub. New Delhi.
 8. Structural, thermal and magnetic investigations of cobalt ferrite doped with Zn^{2+} and Cd^{2+} synthesized by auto combustion method, Harpreet Kaur, Amrik Singh, Vijay Kumar and **Dharamvir Singh Ahlawat**, Journal of Magnetism and Magnetic Materials, 474(2019)505-511. Elsevier.
 9. Estimation of lattice constants and band gaps of group-III nitrides using local and semi local functional, Sandeep Arora, **Dharamvir Singh Ahlawat** and Dharambir Singh, Oriental J. of Chem. (Int.J. of pur&appl.chem.since 1985) www.orientjchem.org, 34 no. 4 (2018) 2137-2143. Oriental Scientific Pub. Co. Bhopal, India.
 10. Structural and magnetic investigations of silica coated cobalt- ferrite nanocomposites, Meenakshi Bansal, Praveen Aghamkar and **Dharamvir Singh Ahlawat**, Oriental J. of Chem. (Int.J. of pur&appl.chem.since 1985) www.orientjchem.org, 34 no.4 (2018)2060-2067. Oriental Scientific Pub. Co. Bhopal, India.
 11. Investigation of optical and dielectric properties of Ni Zn ferrite nanoparticles synthesized at different pH values, Richa, Anand K. Tyagi, **Dharamvir Singh Ahlawat** and Amrik Singh Int. Journal of Scientific Research and Review, 7 issue 02(2019) 40-47. DOI:10.32968/2279-543X.
 12. Density functional investigation for electronic properties of zinc blende GaN and AlN, Sandeep Arora, **D.S. Ahlawat** and D.Singh Int. J. of Chemical and Physical Sciences, vol.7, no.3 (2018), p. 43-50. <http://www.ijcps.org>.
 13. Synthesis and structural investigations of Cu, Mn doped $Cd_{1-x}Zn_x S$ quantum dots, Indu Yadav, **Dharamvir Singh Ahlawat** and Rachna Ahlawat, Int. J. of Chemical and Physical Sciences, vol.7, no.3(2018)p.1-9 <http://www.ijcps.org>.
 14. Effect of chromium (II) doping on structural, optical and mechanical properties of L-alanine strontium chloride single crystal, Shish Pal Rathee and **Dharamvir Singh Ahlawat**, Int. J. of Advance Research in Science and Engg., vol.07, issue 03 (2018) p.625-631.
 15. Structural and optical properties of $Cd_{0.3}Zn_{0.7}S$ ternary semiconducting alloy, Indu Yadav and **Dharamvir Singh Ahlawat**, Int. J. of Advance Research in Science and Engg., vol.07, issue 03(2018)p.667-671.
 16. Investigation on crystal perfection, mechanical and thermo-electric properties of L-ornithine monohydrochloride single crystal: a promising material for nonlinear optical applications, Shish Pal Rathee, S.A. Martin Britto Dhas, Budhendra Singh, Igor Bdikin, **Dharamvir Singh Ahlawat**, Materials Chemistry and Physics, vol.200(2017)p.376-383. Elsevier
 17. Influence of heat treatment conditions on structural and magnetic properties of nickel zinc ferrite nanoparticles synthesized (pH=8) by solution autocombustion method, Richa, A. K. Tyagi, **D. S. Ahlawat**, A. Singh J. of Materials and Environmental Sciences, vol.8, issue S(2017)p.4650-4656. Publisher: University of Mohammed Premier Oujda, Morocco.
 18. Calculation of electronic band structure and optical properties of HgTe under pressure, P.K.Saini, D.Singh and **D.S. Ahlawat**, Indian J. of Pure & Applied Physics, vol.55 (2017) p.649-654. CSIR-NISCAIR Pub. New Delhi.
 19. Study of electronic structure and optical properties of zinc-blende and rocksalt structures of HgSe: a DFT study, P.K.Saini, **D.S. Ahlawat** and D.Singh, Journal of Metallurgy and Materials Science, vol.59 no.1(2017)p.29-37. National Metallurgical Laboratory- CSIR, Jamshedpur.

20. Growth, structural, optical and mechanical properties of L- Leucine hydrobromide: a NLO crystal, Shishpal Rathee and **Dharamvir Singh Ahlawat**, Int. J. Engg.. Techno. Science and Research vol.5, issue 4 (2018) p.494-498.
21. Performances of spin coated silver doped ZnO photoanode based dye sensitized solar cell, Amrik Singh, Devendra Mohan, **Dharamvir Singh Ahlawat**, Richa, Processing and Application of Ceramics vol .11[3] (2017) p.213-219. Publisher: University of Novi Sad, Serbia.
22. FTIR studies of temperature dependent nickel zinc ferrites synthesized by solution auto combustion method, Richa, Anand K. Tyagi, **Dharamvir S. Ahlawat** and Amrik Singh, Global J. of Engg. Science and Researches, vol.4(8), (2017) p.42-46.
23. Acoustical parameters of binary mixture of pyridine and carbon tetrachloride, **Dharamvir Singh Ahlawat**, Mahipal Singh Gill J. Pure and Appl. Ultrason. 39 (2017) 23-26. Publisher: Ultrasonic Society of India.
24. Non-adiabatic effects in near-adiabatic mixed-field orientation and alignment, Anjali Maan, **Dharamvir Singh Ahlawat** and Vinod Prasad, Chemical Physics vol. 479, (2016) p. 63-71. Elsevier.
25. Influence of pH variation on structural and magnetic properties of Ni-Zn ferrite nanoparticles synthesized by auto combustion method, Richa, Anand K. Tyagi and **Dharamvir S. Ahlawat**, Oriental J. of Chem. vol. 33, no. 1, (2017) p. 296-303. Oriental Scientific Pub. Co. Bhopal, India.
26. Effect of aligning pulse train on the orientation and alignment of a molecule in presence of orienting pulse, Ashish Tyagi, Anjali Maan, **Dharamvir Singh Ahlawat** and Vinod Prasad Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, vol.173, (2017) 13-18. Elsevier.
27. Spectroscopic and thermo- electrical investigation of Single crystals of L-ornithine monohydrochloride grown by SEST, Shish Pal Rathee and **Dharamvir Singh Ahlawat**, Optik, vol. 136, (2017) 249-258. Elsevier.
28. Influence of oxygen ions irradiation on the optical properties of photoanodes for dye sensitized solar cell, Amrik Singh, Devendra Mohan, **Dharamvir Singh Ahlawat** and Sandeep Chopra Advanced Materials Letters, vol.8 (4), (2017) 565-571. Publisher: VBRI Press, India.
29. Cu-doped $Cd_{1-x}Zn_xS$ alloy: synthesis and structural investigations, Indu Yadav, **Dharamvir Singh Ahlawat**, Rachna Ahlawat, Applied Physics A: Material Science and Processing, vol. 122 (2016) 245(1-6). Springer.
30. Influence of annealing temperature of platinum counter electrode on the photon to electron conversion efficiency of dye sensitized solar cells, Amrik Singh, **Dharamvir Singh Ahlawat**, Devendra Mohan, Richa, International Journal of Advanced Technology in Engineering and Science, vol.-4 Issue-08 (2016) 622-629.
31. Effect of heating rate on the magnetic properties of nickel zinc ferrite powder synthesized by solution auto combustion method, **Dharamvir Singh Ahlawat**, International Journal of Innovative Research in Science and Engineering, vol. 2(8), (2016) 501-507.
32. Influence of dye loading time and electrolytes constituents ratio on the performance of spin coated ZnO photoanode based dye sensitized solar cells, Amrik Singh, Devendra Mohan, **Dharamvir S. Ahlawat** and Richa, Oriental J. of Chem. (Int. J. of pure & appl. chem. since 1985) www.orientjchem.org, vol. 32, no. (2): (2016), p. 1049-1054.
33. Pulse shape effect on rotational excitation and 2-D alignment alternation by elliptic laser pulse, Anjali Maan, **Dharamvir Singh Ahlawat**, Vinod Prasad, Chemical Physics Letters, 650 (2016) 29- Elsevier.

34. Characteristics and quality of grown potassium thiourea iodide crystal for second harmonic generation, **D.S. Ahlawat**, Krishan Kumar, Rachna Ahlawat and Sandeep Kumar, *J. Material Science: Material in Electronics*, vol. 26, no. 4, (2015) p.2215-2221. Springer.
35. Synthesis and characterization of L-glutamic doped KDP non linear optical crystal. **D.S. Ahlawat**, S.Rani, A. Maan, I.J. Dhingra and B.Kumar, *J. of Opto Electronics and Advanced Materials*, vol. 17, no. 3-4, (2015)451-455. INOE, Romania.
36. Concentration dependent structural behavior of Gd_2O_3 nanocomposites dispersed in silica matrix, Rachna, Nidhi, Indu Yadav, **D.S. Ahlawat** and P.Aghamkar, *J. of Opto Electronics and Advanced Materials*, vol. 17, no. 5-6, (2015)640-645. INOE, Romania.
37. Structural properties of $CoFe_2O_4: SiO_2$ nanocomposites prepared by sol-gel method and coprecipitation method: a comparative study, Meenakshi Bansal, Parveen Aghamkar and **D.S. Ahlawat**. *Int. J. of Sc., Tech. and Mgt.*, vol. 04, Special issue no. 1, (2015) p. 871-877, www.ijstm.com
38. Calculations of the structural, elastic and optical properties of ZnSe at ambient and high pressure, P.K. Saini, D. Singh, and **D.S. Ahlawat**, *Chalcogenide Letters*, vol. 11, no. 9, (2014), 405-414. INOE, Romania.
39. 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)1450004-1(8 pages). World Scientific.
40. Effect of material parameters on the optical properties of dye-sensitized solar cell photoanode, Amrik Singh, Devendra Mohan, **Dharamvir Singh Ahlawat** and Divya Jyoti, *Materials Science Forum*, vol.771, (2014)115-119, Trans Tech Pub Scientific Net, Switzerland.
41. A Critical Review on Mesoporous photoanodes for dye-sensitized solar cells, Divya Jyoti, Devendra Mohan, Amrik Singh and **Dharamvir Singh Ahlawat**, *Materials Science Forum*, vol.771, (2014) 53-69, Trans Tech Pub Scientific Net, Switzerland.
42. Electronic band structure and elastic properties of CdSe by DFT, P.K. Saini, D. Singh and **D. S. Ahlawat**, *Int. Journal of Engg. Research & Techn.*, vol.1, issue 01(2013)69-71.
43. Electrical and semiconducting properties of ZnTe at ambient and high pressure, D.Singh, P.K.Saini and **D.S.Ahlawat**, *Int. Journal of Computing Science and Communication Techn.*, 6, no.1(2013)904-908.
44. Laser enhanced mobility in wide band gap semiconductor crystals, **Dharamvir Singh Ahlawat**, *Mod. Phys. Lett B*, 26, no. 29(2012)1250194(9 pages) World Scientific.

45. Study of band gap energy and thermal properties of PbI_2 by photoacoustic spectroscopy, **Dharamvir Singh Ahlawat**, Mod. Physics Letters B, 26, no. 16 (2012) 1250098 (8 pages). World Scientific.
46. Optical Fiber Characterization by optical time domain reflectometer, **Dharamvir Singh Ahlawat**, Vipin Gupta, Rachna and Mahipal Singh Gill, International Journal of Applied Engg. Research, 7, no. 11 (2012) 1818-1822.
47. Band gap energy comparison of lead iodide excited by an Nd:YAG laser," **D.S. Ahlawat** and R.D.Singh, Solid State Communications, 152 (2012) 38-40. Elsevier Journal.
48. Electronic band structure calculations and semiconducting properties of ZnS at ambient and high pressure, D.Singh, P.Saini and **D.S. Ahlawat**, Int. Journal of Applied Engg. Research, vol. 6, 18 (2011) 3059-3062.
49. Time resolved spectroscopy in laser Grade organic dyes, **D.S. Ahlawat**, A.K.Sharma, L.Taneja, Rachna and R.D.Singh, Optics Comm., vol. 282, issue 21, (2009) page 4256-4258. Wiley, presently Elsevier.
50. Energy Transfer Studies in Stilbene-420(donor) + Coumarin-540(acceptor) Binary Mixture", A.K.Sharma and **D.S.Ahlawat**, National Academy Science Letter, Allahabad, vol. 32, no. 5 & 6 (2009) 191-193.
51. Concentration dependent energy transfer studies in ternary dye mixture of stilbene-420, coumarin-540 and Nile blue, A.K.Sharma, **D.S.Ahlawat**, D.Mohan and R.D.Singh Spectrochimica Acta- Part-A, vol. 71, (2009) 1631- 1633. Elsevier.
52. Multiphoton photoconductivity and optical nonlinearities in ZnSe and CdSe direct band gap crystals, Arun Gaur, D.K.Sharma, **D.S.Ahlawat** and Nageshwar Singh J. Opt. A: Pure and Applied Opt., vol. 9, (2007) 1-5. IOP Journal Pub. Bristol, UK.
53. Optical nonlinearities in direct and indirect band gap crystals on Z-Scan technique with nanosecond laser, Arun Gaur, D.K.Sharma, **D.S.Ahlawat** and Nageshwar Singh Solid State Communications, vol. 141, issue 8, (2007) 445- 448.
54. Study of thermal transport parameters in PbI_2 single crystal using a photoacoustic technique, **D.S.Ahlawat**, D.Mohan, S.K.Goshal, R.D.Singh and Meenakshi Sharma, Modern Physics Letters B, vol. 20, no. 20, (2006) 1253-1260. World Scientific Pub. Elsevier.
55. Novel fabrication of CA membrane Bound Carbon Electrode for bioenzymatic determination of lactate, Vikash, Harish and **D.S.Ahlawat** Sensors & Transducers Journal, , Vol. 73(11) (2006) 804-809. IFSA Pub, Spain.
56. Study of laser induced photoconductivity, optical gain and photoacoustics, **Dharamvir Singh Ahlawat** International Archives of Science and Technology, vol. 3(1), (2003) 1-6. Integ.Sci.Pub.N. Delhi.
57. Two-photon photoconductivity of ZnS using XeCl laser, R.D.Singh, **D.S.Ahlawat** and Arun Gaur, Modern Physics Letters B, vol. 17, no. 24, (2003) 1265-1270.
58. Study of substituents in coumarin 450 by nitrogen laser, A.K. Sharma, **D.S.Ahlawat** and R.D.Singh, Bulletin of Pure and Applied Sciences, (Int. Research Journal of Sciences, since 1982), Sec.-D Physics, vol. 22 D, (1) (2003) 45-49.
59. Photobleaching of Nile blue dye by photoacoustic , **D.S.Ahlawat**, A.K.Sharma, D.Mohan and R.D.Singh, Bulletin of Pure and Applied Sciences (Int. Research Journal of Sciences, since 1982) Sec.-D Physics, vol. 22 D (2) (2003) 137-140.
60. Pulsed laser induced multiphoton photoconductivity in an indirect band gap crystal: PbI_2 , **D.S.Ahlawat**, Arun Gaur, Nageshwar Singh and R.D.Singh, Physica Status Solidi (b), vol. 219 (2000) 421-424. Wiley-VC.

61. A report on laser laboratory physics department, M.D.University,Rohtak,(Hry.)India, **D.S.Ahlawat** , A.K. Sharma and R.D. Singh, Laser News, vol.8(2)(April 1997)9-12.Publisher:Indian Laser Association ,RRCAT, Indore.

Research Articles in Proceedings

1. "Effect of Cd²⁺ and Zn²⁺ Substitution on the Structural and Magnetic Properties of Cobalt Ferrites, Harpreet Kaur, Anand Kumar Tyagi, **Dharamvir Singh Ahlawat**, Amrik Singh, **AIP Conf. Proc.** (AMRP-2020), 2352, 020030-6; <http://doi.org/10.1063/5.0052463>.
2. "CuMn Doped Cd_{1-x}Zn_xS Quantum Dots: Review on Structural and Optical Parameters",**Dharamvir Singh Ahlawat**,Indu Yadav, Sonia, Rajkumar.Proceedings of Online Conference on Advances in Functionalized Materials (NCAFM-2020)pp.11-14,**ISBN**:978-93-5419-177-0, Department of Physics, TPGIT, Vellore-632002(TN) held on Oct 8-9, (2020).
3. Structural and Electronic Properties of Boron Nitride Using Density Functional Theory, Shyam Lal Phutela,Sandeep Arora,**Dharamvir Singh Ahlawat** and Sandeep Kansal, **AIP Conference Proceedings**, 15 April, (2019), 2093, page no.020043(14);<https://doi.org/10.1063/1.5097112>.
4. Annealing Effect on the Structural and Dielectric Properties of Hematite Nanoparticles,VijayKumar,SurjeetChahal,**DharamvirSingh**,AshokKumar,Parmod Kumar and K.Ashokan **AIP Conference Proceedings**, May(2018), 1953, page no.030245-1-030245-4;<https://doi.org/10.1063/1.5032580>.
5. Study of Acoustical Parameters and Molecular Interactions in Liquid Mixtures by Ultrasonic Technique,**D.S.Ahlawat**,Jitender Singh,Rachna and M.S.Gill,Proceedings of DHE Sponsored National Seminar on Recent Developments in Advanced Materials and Photonics,pp.43-53,**ISBN**:978-93-82391-91-3,Hindu College Sonipat (Hry.)India,March 05,(2016).
6. Effect of Annealing Temperature on Structural Properties of CoFe₂O₄:SiO₂ Nanocomposites, Meenakshi Bansal, ParveenAghamkar and **Dharamvir Singh Ahlawat**, Proceedings of National Conference TEQIP-II Sponsored on Latest Development in Materials, Manufacturing and Quality Control, 19-20 Feb., 2015, MRSSTU (Formerly IKGZSPTU Campus), India, Bathinda.pp 1-4(2015).
7. Effect of Heat Treatment on the Structural and Optical Properties of Nickel Zinc Ferrite, Richa, Anand K. Tyagi, **Dharamvir Singh Ahlawat** and Amrik Singh,International Conference Proceedings, **ISBN**:978-93-83842-92-6, SBS Technical Campus,Firozpur(Pb.) pp. 118-119,Oct. 30-31(2014).
8. Influence of Different Parameters of Ions Beam Parameters on its Range and Energy Losses, Amrik Singh, **Dharamvir Singh Ahlawat**, Devendra Mohan and Anand K. Tyagi. International Conference Proceedings, **ISBN**:978-93-83842-92-6, SBS Technical Campus,Firozpur(Pb.)pp.158-159,Oct. 30-31(2014).
9. Swift Heavy Ions Irradiated ZnO and TiO₂ Films: A Review, Amrik Singh, **Dharamvir Singh Ahlawat**, Devendra Mohan and Richa. International Conference Proceedings, pp.160-163,**ISBN**:978-93-83842-92-6,SBSTechnical Campus, Firozpur(Pb.),Oct. 30-31(2014).
10. Structural Characterization of Cu Doped ZnS Nanomaterial Synthesized by Co-Precipitation Method, Indu Yadav and **Dharamvir Singh Ahlawat**,International Conference Proceedings, **ISBN**:978-93-83842-92-6, SBS Technical Campus,Firozpur(Pb.) pp. 169-171, Oct. 30-31 (2014).
11. Photobleaching Study of Rhodamine-B Doped Polymer Samples,**Dharamvir Singh Ahlawat**,Neelam Godara,D.Mohan and R.D.Singh,Proceedings of First National Conference on Trends and Applications in Laser Technology and Opto-

electronics(TALTOP-1)pp.30-31, **ISBN:9-788184-248265**,AMITY University Haryana, Gurgaon, April 4(2013).

12. A Review on the Different Film Deposition Techniques and their Effect on the Performance of Dye Sensitized Solar Cells, Amrik Singh, Devendra Mohan and **Dharamvir Singh Ahlawat**,Conference Proceedings,pp.78-82,Dec.27-28,(2013).
13. Study of Electronic Properties of Binary Semiconductor CdSe by GGA,P.K. Saini, D.Singh and **D.S. Ahlawat**,Conference Proceeding, pp. 480-482,March 3-4, (2013).
14. Study of Attenuation in Plastic Optical Fibers, **Dharamvir Singh Ahlawat**, National Conference Proceedings,pp.28-32,**ISBN:978-93-81583-40-1**,GZS Campus, PTU, Bathinda, April13-14(2012).
15. Advancement in Communication System By Nano Technology, **Dharamvir Singh** ,International Conference Proceedings,**ISBN:978-81-923446-0-7**,vol.-II,pp.467-469,Om Institute of Technology,Juglan,Hisar,Feb.25-26(2012).
16. Adboot Carbon Aproop :Fullerenes, **Dharamvir Singh Ahlawat**, Rachna and Sunil Kumari, National Conference Proceedings,pp.267-269,**ISBN:978-81-86514-27-6**,Metcafe House DRDO, New Delhi,Feb.12-13(2009).
17. Optical Non Linear Absorption and Refraction in Direct and Indirect Band Gap Crystals on the Z-Scan Techniques, D.K. Sharma, **D. S. Ahlawat**, Nageshwar Singh and Arun Gaur,Conference Proceedings,pp.124, Deptt.of Physics & Astro-Physics, University of Delhi, N. Delhi,March 21-23(2006).
18. Absorption and Flourosense of CsI(Tl) and CsI(Tl & In) Crystals, D.K. Sharma, **D. S. Ahlawat**,Nageshwar Singh and H.S. Vohra,Conference Proceedings,pp.185-186, Vellore Institute of Technology (Deemed University), Vellore, TN,Dec.7-10(2005).
19. Opto-Electronic Studies on PbI₂ Embedded in Sol-Gel Hosts, Meenakshi Sharma, Devendra Mohan, R.D.Singh and **D. S. Ahlawat**, Conference Proceedings,pp.304-305, Vellore Institute of Technology (Deemed University), Vellore, TN- Dec.7-10(2005).
20. Nonlinear Photoconductivity of ZnS Using XeCl Laser,D.S.Ahlawat,Arun Gaur and R.D.Singh,Proceedings of DAE-BRNS National Laser Symposium,pp.555-556,**ISBN:81-7764-378-9**,University of Kerla,Trivandrum,Nov.14-16(2002).

Book Publications

1.	Subject Book by National Publishers	Dr. Dharamvir Singh Ahlawat	Basic Concepts of Laser Physics, Mittal Publications, New Delhi (India), 2017,p.1-104	ISBN 81-8324-510-2
2.	Subject Book by National Publishers	Dr. DharamvirSinghAhlawat	Basics of Nanomaterial Research, DBH Publisher, New Delhi.2015,p.1-66	ISBN: 978-81-927056-3-7

Research Publications(Chapter in Books other than refereed journal articles)

(i)	26 th chapter	Raman studies of Ni-Zn ferrite nanoparticles synthesized at different fuel to oxidant values, Ms.Richa, Mr. AnandK.Tyagi, Dr .Dharamvir Singh	Paradigms of Multidisciplinary Research	National Publishers: DBH Publishers and Distributors,4378/4B, Ansari Road, Daryaganj, New Delhi -110002,	ISBN: 978-93-84871-15-4
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		Ahlawat and Dr. Amrik Singh		ISBN:978-93-84871-15-4	
(ii)	29 th chapter	Energy loss in nickel ion irradiated (SHI) ITO and TiO ₂ photoanode based dye sensitized solar cell ,Dr. Amrik Singh, Dr. Dharamvir SinghAhlawat and Ms. Richa,	Paradigms of Multidisciplinary Research	National Publishers: DBH Publishers and Distributors,4378/4B, Ansari Road, Daryaganj, New Delhi -110002, ISBN:978-93-84871-15-4	ISBN: 978-93-84 871-15-4
(iii)	118 th page	A Review: Dye Sensitized Solar Cells Based on Different Photosensitizes, Amrik Singh, Dharamvir ,Devendra Mohan, Anand K. Tyagi and Richa	Nanochemistry, Dr.VijayTomar& Mrs. Anshu Uppal, First Published 2018, Page No.118 -127, AnuBooks,N.Delhi,	National Publishers: Anu Books, NewDelhi ; Glasgow, U.K. , ISBN:978-93-82166-87-0:	ISBN:978-93-82166-87-0:

Refresher Course, Methodology Workshops, Training, Teaching Learning Evaluation Technology Programmes, Soft Skills Development Programs, Faculty Development Programmes etc.

S. No.	Programme	Duration	Organized by
1.	Participated in the Six Days International Workshop on “Smart Materials Sensor and Energy Devices(SMSSED-2020)”	25-30,May 2020	SSN College of Engineering,Kalavakkam-603110,Chennai,India Department of Electronics and Communication Engineering
1.	Participated in the RUSA Sponsored “One Week Workshop on MOOCs & Open Education Resources, HRDC ,GuruJambeshwar University of Science & Technology, Hisar-125001(Hry.)	22.07.2019 to 27.07.2019	UGC-Human Resources Development Center(HRDC),Guru Jambeshwar University of Science & Technology,Hisar-125001(Hry.) India
2.	UGC Sponsored Interdisciplinary Refresher Course on “Information & Communication Technology”, HRDC,GuruJambeshwar University of Science & Technology,Hisar-125001 (Hry.)	21.06.2018 to 11.07.2018	UGC-Human Resources Development Center(HRDC),Guru Jambeshwar University of Science & Technology,Hisar-125001(Hry.) India
3.	National Workshop on Research Methodology	01-09-2016 to 07-09-2016	Chaudhary Devi Lal University, Sirsa (Hry.)

			India
4.	Refresher Course in Physics	01.05.2013 to 21.05.2013	UGC-Academic Staff College, G.J.U.S.& T., Hisar, India
5.	Refresher Course in Physics	29.11.2010 to 18.12.2010	UGC-Academic Staff College, G.J.U.S.& T., Hisar, India
6.	Orientation Programme for Faculty Development	05.08.2008 to 02.09.2008	UGC-Academic Staff College, JamiaMilliaIslamia, New Delhi
7.	Two Weeks Winter School on Nonlinear Optics: Theory and Applications	01.12.2003 to 13.12.2003	Department of Physics & Centre for Nonlinear Dynamics, Bharathidasan University, Trichurapalli, TN., India

Participation/Paper Presented in Conferences/Seminars/Symposia

Sr. No.	Title of paper presented	Presented by	Title of Conference/Seminar etc. and organizer	Date(s) if the event	Whether International / National/ State/Regional/ University or College Level
1.	Pressure effect on structural and electronic properties of CdTe', ,Pawan Kumar Saini , Dharamvir Singh Ahlawat and Salah Daoud	Dharamvir Singh Ahlawat	International Web Conference on Advanced Materials Science & Nanotechnology(NANOMAT -2020), Organized by Department of Physics, Vinayak Vidnyan Mahavidyalaya, Nandgaon Khandeshwar, Amrawati (MS), India	20-21 June, 2020	International
2.	Dye sensitized solar cells: recent advances and future prospects	Dharamvir Singh Ahlawat	National Conference on Emerging Trends in Physics and Materials Science (ETPMS-2016) Deptt. of Physics, Chaudhary Devi Lal University, Sirsa (Hry.) India	March 19-20, 2016	National
3.	Effect of Working temperature on the open circuit voltage of TiO ₂ photoelectrode based dye sensitized solar cells.	Dharamvir Singh Ahlawat	National Conference on Recent Advancements in Science & Technology (RAST-2016), Arya P. G. College, Panipat (Haryana) India	February, 27-28, 2016.	National
4.	Laser Line Width Broadening By Hole Burning Effects in Laser Materials.	Dharamvir Singh Ahlawat	National Conference on Emerging Trends in Physics & Material Science (ETPMS-2015), Deptt. of Physics, Chaudhary Devi Lal University, Sirsa (Hry.), India	March 9-10, 2015	National
5.	Growth characterization of L-	Dharamvir Singh	3rd National Conference on Photonics & Materials	Nov. 18-19, 2015	National

	ornithine hydrogen bromide single crystal	Ahlawat	Science (NCPMS-2015) Deptt. of Applied Physics, GJUS&T, Hisar, India		
6.	Electron Mobility Based High Sensitivity of Lead Iodide Crystal	Dharamvir Singh Ahlawat	National Conference on Applied Physics and Material Science, Deptt. of Physics, M.D.University, Rohtak(Hry.) India	Feb. 5-6, 2015	National
7.	Growth and Characterization of KDP Crystals	D.S.Ahlawat	International Conference on Frontiers in Material Research & Applications, (FMRA-2014), Shaheed Bhagat Singh State Technical Campus, Moga Road, Ferozepur(Pb.) India	Oct. 30-31, 2014	International
8.	Study of Non-Linear Optical Crystal: L-Glutamic Doped KDP	Dharamvir Singh Ahlawat	National Conference on Recent Developments in Physics S.D. (P.G.) College, Panipat, India	March 29-30, 2014.	National
9.	Study of Strange Properties of Lead Iodide Crystals	D.S. Ahlawat	National Conference on Photonics & Materials Science (NCPMS-2014) Deptt. of Applied Physics, GJUS&T, Hisar, India	March 20-21, 2014	National
10.	Optical Fiber Loss Comparison Studies at Four Different Laser Frequencies	D.S. Ahlawat	Instruments Research & Development International Conference on Optics & Optoelectronics (xxxviii Symposium of Optical Society of India, IRDE, Dehradun India,	March 5-8, 2014.	International
11.	Study of Crystal Defects and Impurities in Potassium Thiourea Iodide	D.S. Ahlawat	National Symposium on Electroceramics- Materials and Devices (NSE-MD-2014), Deptt. of Physics, GVM PG Girls Co India Ilege, Sonipat,	Feb. 21-22, 2014	National
12.	Structural and Morphological Study of Grown KDP Crystal	D.S. Ahlawat	National Symposium on Emerging Trends in Physics for Ionizing Radiations, Aerosols and Material Science (ETPRAM-13) Department of Physics, Punjabi University, Patiala, India	Dec. 13-14, 2013	National
13.	Photobleaching	D.S.	National Conference on	April 4,	

	Study of Rhodamine-B Doped Polymer Samples	Ahlawat	Trend and Applications in Laser Technology and Opto Electronics (TALTO-1), Amity Institute of Laser Technology & Opto Electronics (AILTO), Amity University, Manesar (Gurgaon) India	2013	National
14.	Study of Spectral Properties of Some Coumarin Dyes	D.S. Ahlawat	National Conference on Physics of Engineering Materials, Deenbandhu Chhotu Ram University of Science & Technology, Murthal, Sonapat, (Haryana) India	March 15-17, 2013	National
15.	Characterization of Magnetic Material : Fe_3O_4	D.S. Ahlawat	Conference on Advanced Materials & Devices, Deptt. of Physics, Hindu P.G. College, Sonapat (Hry.) and MRSI Delhi Chapter, India	Feb 27-28, 2013.	National
16.	Fiber Optics Reflection Measurement	D.S. Ahlawat	International Conference on Recent Trends in Applied Physics & Material Science, Govt. College of Engineering & Technology, Bikaner (Raj.) India	Feb. 01-02, 2013.	International
17.	Lasers in Environmental Research	D.S. Ahlawat	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.	International
18.	Study of Sol-Gel Prepared Silver Nano-Particles	D.S. Ahlawat	National Symposium on Nanotechnology: Interdisciplinary Aspects, YMCA University of Science & Technology, Faridabad (Haryana) India	Dec. 12, 2012.	National
19.	Optical Fiber Characterization by Optical Time Domain Reflectometer	D.S. Ahlawat	3 rd International Conference on Emerging Trends in Engineering and Technology, Geeta Institute of Management and Technology (GIMT), Kanipla, Kurukshetra (Haryana) India	Nov. 9-11, 2012	International
20.	Transfer Mechanisms in a Mixture of Fullerene C_{60}	D.S. Ahlawat	National Conference on Functional Materials, Deptt. of Physics, GVM Girls PG College, Sonapat (Haryana)	Sept. 24-25, 2012	National

	and Coumarin C-440		& MRSI, Delhi Chapter, India		
21.	Thermal Properties of Solid State Laser Systems	D.S. Ahlawat	National Conference on Recent Trends in Design, Manufacturing & Thermal Science, Department of Mechanical Engineering, SRM University, NCR Campus, Ghaziabad(UP) India	March 22-23, 2012	National
22.	Study of Lead Iodide by Photoacoustic Technique	D.S. Ahlawat	National Conference on Material Science Applications in Energy & Environment(UGC, DST and DBT Sponsored) , Post Graduate Department of Chemistry and Physics, D.A.V College Jalandhar (Punjab) India	March 02-03, 2012	National
23.	Optical Fibre Based Communication Network	D.S. Ahlawat	International Conference on Recent Trends in Computing , Mechatronics and Communication, OM Institute of Technology and Management, Juglan, Hisar(Haryana),India	Feb. 25-26, 2012	International
24.	Study of Photo Detector in the Communication Network	D.S. Ahlawat	International Conference on Advancements in Computing and Communication, Deptt. of Computer Science & Engineering/Information Technology, Baba Banda Bahadur Engineering College, Fatehgarh Sahib, Punjab(India)	Feb. 23-25,2012	International
25.	Laser Induced Ultrafast Processes in Nanostructured Materials	D.S. Ahlawat	National Conference on Modern Development in Engineering & Sciences, Ambala College of Engineering & Applied Research, Devsathli, Ambala, India	Feb. 27-28, 2009	National
26.	Photophysical Properties of Laser Grade Coumarins	D.S. Ahlawat	National Conference on Photonics & Material Science, Department of Applied Physics, Guru Jambheshwar University of Science & Technology, Hisar(Haryana) India	Oct. 24-25, 2008	National \
27.	Science and	D.S.	Seminar on Science and	March2	

	Humanities	Ahlawat	Humanities, Govt. College, Baund Kalan, Bhiwani, India	1, 2006	State Level
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Invited for Conference/ Seminars/ Workshops/Symposia Lectures Dilivered/ Chair Sessions

Sr. No.	Whether lecture delivered/Academic session chaired	Title of the Lecture delivered	Title of the conference /Seminar etc.	Date(s) of the event	Organizer
1.	Academic Session Chaired	Construction Materials and Technologies	International Conference on Frontiers in Material Research & Applications, (FMRA-2014), Shaheed Bhagat Singh State Technical Campus, Ferozepur(Pb.)India	Oct. 30-31, 2014	Shaheed Bhagat Singh State Technical Campus, Moga Road, Ferozepur(Pb.) India
2.	Invited Talk	Growth and Characterization of KDP Crystals	International Conference on Frontiers in Material Research & Applications, (FMRA-2014), Shaheed Bhagat Singh State Technical Campus, Ferozepur(Pb.) India	Oct. 30-31, 2014	Shaheed Bhagat Singh State Technical Campus, Moga Road, Ferozepur(Pb.) India
3.	Academic Session Chaired	Applied Sciences	National Conference on Modern Development in Engineering & Sciences, Ambala College of Engineering & Applied Research, Devsathli, Ambala, India	Feb. 27-28, Feb. 2009	Ambala College of Engineering & Applied Research, Devsathli, Ambala, India
4	Invited Resource Person	Synthesis and Structural Investigation of Cu, Mn Doped Quantum Dots of $Cd_{1-x}ZnS_x$	DGHE Sponsored National Seminar on Nanochemistry, 19 th January, 2018, CMK National PG Girl's College, Sirsa (Hry.) India	19 th January, 2018	CMK National PG Girl's College, Sirsa(Hry.) India
5	chairperson Technical Session-I	Physical Sciences	One Day National Seminar on "Exploring the new era of humanities, commerce, science & technology: issues and challenges-2020 (HNEHCST-2020)"	20 th Feb. 2020	Jan Nayak Ch. Devi Lal Memorial (PG) College, Sirsa

Academic through organizing conferences/ seminars/workshops/symposia

S.No.	Convener/Secretary/Member of Organizing Committee etc.	Date/Duration of Event
1.	<p>IPC Member,InternationalProgramm Committee of the 3rd International Conference on Optics, Photonics and Lasers (OPAL'2020) Tenerife (Canary Islands), Spain ;</p> <p>http://www.opal-coference.com</p> <p>I have been working in this prestigious Int. Conf.(OPAL) from last 3 years since Ist,2nd Conf. as an IPC Member and Reviewer in the organizing committee at Int. level.(every year record was being submitted in Self Appraisal Reports).</p>	<p>13-15 May, 2020</p> <p>OPAL'2020 conference is included into the UNESCO_IDL_Laser anniversary celebrations to celebrate the UNESCO international day of light and 60th Anniversary of first laser operation by Ted Maiman in 1960 to promote awareness of light science and technology in the world</p> <p>Postpond due to COVID-2019</p>
2.	<p>IPC Member and Reviewer in the International Programm Committee of the 2nd International Conference on Optics, Photonics and Lasers(OPAL'2019), Amsterdam, The Netherlands.</p>	24-26 April,2019
3.	<p>IPC Member and Reviewer in the International Programme Committee of the First International Conference on Optics, Photonics and Lasers(OPAL'2018), Barcelona,Castelldefers,Spain.</p>	09-11 May,2018
S.No.	Award of Honour/Prize	
1.	<p>Award of Honour, The University takes pride in felicitating DrDharamvir Singh, for his sterling achievements in academics/research activities for the period from 26.01.2019 to 31.08.2019conferred bythe Hon'ble Vice-Chancellor, CDLU, Sirsa dated on 05 Sept,2019.</p>	
2.	<p>Award of Honour, The University takes pride in putting on record the distinctive contribution of Dr. Dharamvir Singh to the creation of new knowledge and enrichment of Academics and Research. In acknowledgement of the same an Award of Honour is being conferred on him by the Hon'ble Vice-Chancellor, CDLU, Sirsa dated on 26 January,2019.</p>	

Dr. D S Ahlawat

Place: CDLU, Sirsa (Hry.) India.