

Curriculum vitae

Dr. Pawan Heera

Personal Details

Address: Associate Professor ,Department of Physics and Astronomical Science
Central University of Himachal Pradesh
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Citizenship India

Professional Qualifications

M.Sc., M.Phil., Ph.D., GATE, NET

Specialisation/Research interest

Material Science, Condensed Matter Physics, Material configuration studies by Diffraction methods and Vibrational, UV-VIS & Impedance spectroscopy. Nonlinear optics. Nanoscience. Remote sensing and its applications.

Employment History

Worked as Assistant Professor for more than 12 years in the Department of Higher Education, Government of Himachal Pradesh.

Personal Distinctions

Gold medallist in M.Sc. Himachal Pradesh University, Shimla (2003).

Invited Seminars and Invited Conference Presentations (last 5 years)

Invited speaker at Two days workshop held at Himachal Pradesh University, Shimla(2017).

Teaching

Teaching experience of more than 12 years in the Department of Higher Education, Government of Himachal Pradesh.

Mechanics, Electricity & Magnetism, Statistical and Thermal Physics, Vibrations and Waves, Waves & Optics, Elements of Modern Physics.

Membership of Learned Societies/Professional bodies

MRSI, VIBHA (HP), IAPT.

Doctoral Thesis Supervision

University Administration

Research Projects and Income

Publications

Refereed Journal Articles:

- 1) “Crystallization kinetics of tellurium rich Se-Te-Sn glassy alloys” **Pawan Heera**, Anup Kumar, and Raman Sharma, *Journal of thermal analysis and calorimetry*, 130(2) 661-669, 2017.
- 2) “Spectroscopic analysis of Sn doped Se-Te glassy alloy”, **Pawan Heera et. al**, *Journal of Non-Crystalline Solids*, 437(2016) 87-92.
- 3) “Optical Response of Sn doped Se-Te thin films” **P. Heera**, A. Kumar and R. Sharma, *Chalcogenide Letters*. 12(12), (2015) 665-676.
- 4) “Physical and Dielectric Properties of Sn Doped Se-Te glassy system”, **Pawan Heera et. al**, *Journal of Ovonic Research* 8(2), (2012) 29 - 40.
- 5) “A.C. conductivity of Ag incorporated Se-Te-Bi glassy alloy” Anup Kumar, **Pawan Heera**, and Raman Sharma, *J. Nano and Electronic Physics*, 5(2) (2013) 02020-5.
- 6) “Compositional dependence of optical parameters of Se-Bi-Te-Ag thin films”, Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *J. Non-Cryst. Solids*, 358 (2012) 3223-3228.
- 7) “Optical Properties of Bi Doped Se-Te Thin Films”, Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *J. Ovonic Research*, 8 (2012) 135 - 146.
- 8) “Investigative study of optical parameters of $Se_{80.5}Bi_{1.5}Te_{18-y}Ag_y$ thin films” Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *J. Materials Science Forum*, 710, (2012) 739-744.

Refereed Conference Publications:

- 1) “*Optical band gap of thermally deposited Ge-S-Ga thin films*” Anjali Rana, **Pawan Heera**, Bhanu Pratap Singh and Raman Sharma *AIP Conf. Proc.* 1953, (2018) 090039 doi: 10.1063/1.5032886.
- 2) “*Calorimetric study of tellurium rich Se-Te-Sn glasses*” **Pawan Heera**, Anup Kumar, Manish Jharwal, and Raman Sharma, *AIP Conf. Proc.* 1731, (2016) 070046 doi:10.1063/1.4947878.
- 3) “*Effect of Sn on the optical band gap determined using absorption spectrum fitting method*”, **Pawan Heera**, Anup Kumar and Raman Sharma, *AIP Conf. Proc.* 1661,(2015) 090005-1–090005-5; doi: 10.1063/1.4915429.
- 4) “*Effect of Sn on the Dielectric Properties of Te rich Se-Te Glassy Alloys*”, **Pawan Heera et. al**, *AIP Conference Proceedings* **1591**, (2014)810.
- 5) “*Effect of Compositional Variation on the Electrical Properties of Se-Te-Bi-Ag Glassy Alloy*” Anup Kumar, **Pawan Heera** and Raman Sharma, *AIP Conf. Proc.* 1661,(2015) 090007-1–090007-4; doi: 10.1063/1.4915431.
- 6) “*Nonlinear Optical Properties of Quaternary Amorphous $Se_{80.5}Bi_{1.5}Te_{18-y}A_y$ (A= Sb, Ag) Thin Films.*” Anup Kumar, **Pawan Heera** and Raman Sharma, *AIP Conf. Proc.* 1591, (2014) 790-792.
- 7) “*Frequency Dependence of Dielectric Constants of Ag Doped Se-Bi-Te system*” Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *AIP Conf. Proc.* 1536, (2013) 697-698.
- 8) “*Dispersion Parameters and Optical Band Gap in $Se_{80.5}Bi_{1.5}Te_{18-y}Sb_y$ Amorphous Thin Films*” Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *AIP Conf. Proc.* 1512, (2013) 636-637.
- 9) “*Optical Properties of Bi Doped Amorphous Se-Te Thin Films*” Anup Kumar, **Pawan Heera**, P. B. Barman and Raman Sharma, *AIP Conf. Proc.* 1393, (2011) 329-330.
- 10) “*Study of Some Physical Properties of $Se_{30}Te_{70-x}Sn_x$ Glasses*”, **Pawan Heera et. al**, *AIP Conf. Proc.* **1393**(2011)111.

Book Chapters:

Title	ISBN	Year of Publication
Electricity and magnetism	978-93-87959-17-0	2018
Mechanics	978-93-88976-26-8	2019
Waves and Optics	978-88976-27-5	2019
Statistical and Thermal Physics	978-93-89800-51-7	2020
Elements of Modern Physics	978-93-88976-20-6	2021

Participations in Conferences/ seminars/workshops/trainings:**International Conferences:-**

- 1) “55th DAE Solid State Physics Symposium 2010 (SSPS 2010)” w.e.f. 26-30th December, 2010 at Manipal University Manipal and presented paper.
- 2) International Conference (ICACNM-2011) organized from February 22, 23-26, 2011 by the Department of Physics Punjab University Chandigarh and presented paper.
- 3) International Conference on Advances in Metallic Materials and Manufacturing Processes for Strategic Sectors(ICAMPS) organized from 19-21st January, 2012 by IIM Trivandrum Chapter Thiruvananthapuram and presented paper.
- 4) “57th DAE Solid State Physics Symposium 2012 (SSPS 2012)” w.e.f. 3rd December, 2012 to 7th December, 2012 at IIT Bombay University Mumbai and presented paper.
- 5) 2nd International Symposium on Semiconductor Materials and Devices (ISSMD-2) w.e.f. 31st January 2013 to 2nd February 2013 organized by Department of physics and Electronics, University of Jammu and presented paper.
- 6) “58th DAE Solid State Physics Symposium 2013 (SSPS 2013)” w.e.f. 3rd December, 2013 to 7th December, 2013 at Thaper University Patiala and presented paper.
- 7) International Conference (ICCM-2014) organized from November 4-6, 2014 by the Department of Physics Himachal Pradesh University Shimla and presented paper.
- 8) “60th DAE Solid State Physics Symposium 2015 (DAE-SSPS 2015) Diamond Jubilee year” w.e.f. 21st December, 2015 to 25th December, 2015 at Amity University Noida, UP and presented paper.
- 9) International symposium “ Role of Science in the post Covid 19 Era “ held between

28-29th May 2020 by Faculty of Science Gujranwala Guru Nanak Khalsa College
Civil lines Ludhiana Punjab.

National Conferences:-

- 1). National conference on “*Recent advances in material science & engineering : A Multidisciplinary Approach (RAMSE 2010)*” organized by JayPee University of Engineering and Technology Guna MP India in association with MRSI (Lucknow Chapter), 23-24th October 2010.
- 2). National conference on “*Recent trends in Materials Science (RTMS-2011)*” organised by Department of Physics JUIT Solan HP India, 08-10th October 2011.
- 3). National conference on “*Role of Science & Technology in Disaster Management*” organised by Department of Physics, Govt. College Kullu HP, 14-15th December 2018.
- 4). National Conference on “*Reimagining and redefining Higher Education in Light of National Education Policy: Vision to Action(HEI-NEP 2021)*” organised by Department of Physics & Education, Dr. YSPGPG College Nahan HP, 3-4th December 2021.

National Seminar/Webinars:-

- 1). National seminar on “*Re-Surging India*” on March 6th 2019 organised by Department of Commerce, Govt. College Dhaliara.
- 2). National level webinar on “*Weather and Climate*” held on 17th May 2020 conducted by Department of Physics MES College Nedumkandam, Kerala, India.
- 3). National level webinar on “*National Education Policy 2020: Implications on Higher Education*” organised by St. Mary’s College Bathery & St. Xavier’s College Vaikom, Kerala, 20-21st October 2020.
- 4). National level webinar on “*Physics of Lightning*” organised by Department of Physics, Dr. MGR Educational and Research Institute Chennai, 31st May 2021.

Workshops Attended:-

- 1). Two days workshop “*A WORKSHOP ON FRONTIERS IN PHYSICS(AWFP-2017)*” at Himachal Pradesh University Shimla as **Invited speaker** held between 17-18th March 2017.

- 2). Six days e-workshop on “*Materials & their Characterization*” at Maharaja Agrasen University, Baddi, Solan HP held between 14-19th June 2021.
- 3). International workshop on “*Advanced Characterization Techniques for materials*” ACTM-2021 by School of Physics and Material Science Shoolini University of Biotechnology and Management Sciences, Solan HP held between 16-18th February 2021.

Trainings Undergone:

- 1). One week Short term training “*Training of Trainers (TOT) for Teachers* (Under TLC Project) “ attended at Govt. College Dhaliara held between 03-07th June 2019.

Participation in Refresher courses/ Orientation/ Faculty development Programmes and others:-

- 1). 117th Orientation from UGC-HRDC, Punjab University Chandigarh 15.12.2017 to 11.01.2018.
- 2). Summer School (Inter Disciplinary) UGC-HRDC, GNDU Amritsar from 18.06.2019 to 08.07.2019.
- 3). One week FDP on “*Apps on Physics*” organised by Govt. College Una in association with IIT Bombay from 15-20th May 2020.
- 4). Two week FDP conducted by HIMCON and sponsored by National Science & Technology entrepreneurship Development board (NSTEDB) Department of Science and Technology Govt. of India from 02-15th February 2021.
- 5). One week FDP on “*Multimedia tools for Teaching and learning*” conducted by TLC Ramanujan College University of Delhi from 22-28th July 2021 and obtained ‘A+’ grade.
- 6). Two week refresher course on “*Managing online classes & co-creating MOOCS 7.0*” conducted by TLC Ramanujan College University of Delhi from 05-19th August 2021 and obtained ‘A+’ grade.
- 7). Two week online refresher course in *Physics* (SRC) conducted by CPDHE University of Delhi from 04-18th October 2021 and obtained ‘A+’ grade.