

BIO-DATA

1. **Name** : Dr. Anup Thakur
2. **Official Address** : Associate Professor (Physics)
Department of Basic and Applied Sciences,
Punjabi University, Patiala-147 002, Punjab,
India.
Mobile: 94171-10095
Email: dranupthakur@gmail.com



3. **Area of Specialisation:** Chalcogenide Phase Change Materials and Nanomaterials

4. Academic Qualifications:

1. Ph.D. in Physics (2006) from Department of Physics, P.U. Chandigarh.
2. UGC-CSIR, JRF qualified in Physical Sciences.
3. M.Sc. (Hons. School) Physics (1999), with 1st division from Department of Physics, Panjab University, Chandigarh.
4. B.Sc. (N.M.) (1997) with 1st division from H.P. University, Shimla.

Additional Qualifications:

1. Course on "Writing in the Sciences" from Stanford University, U.S.A.
2. Course on "Introduction to Molecular Spectroscopy" from University of Manchester, U.K.
3. Course on "Foundations of Teaching for Learning: Introduction" from Commonwealth Education Trust.
4. Course on "Foundations of Teaching for Learning: Being a Teacher" from Commonwealth Education Trust.

5. Fellowships:

- i) **Post Doctorate Fellowship (PDF):** Worked as a Post Doctorate Fellow at Pohang Accelerator Laboratory (PAL), POSTECH, S. Korea from January 2010 to December 2011.
- ii) **Senior Research Fellow (CSIR, New Delhi):** Department of Physics, P.U. Chandigarh from July 2004 to June 2006.
- iii) **Junior Research Fellow (CSIR, New Delhi):** Department of Physics, P.U. Chandigarh from July 2002 to June 2004.

6. Details of Experience:

Working as an Associate Professor (Physics) in the Department of Basic and Applied Sciences, Punjabi University, Patiala, from 3rd July, 2018 to till date.

Worked as an Assistant Professor (Physics) in the Department of Basic and Applied Sciences, Punjabi University, Patiala from 3rd July 2006 to 2nd July, 2018.

7. Published Work:

1. (a) Research Papers in International Journal: 110
(b) Research Papers published in conference/symposia proceedings: **10**

2. R & D Projects:

Ongoing:

- I. A research project titled "**Phase transition studies of Ga doped Ge₂Sb₂Te₅ thin films for data storage applications**" worth of approx. **Rs. 26,75,332/-** awarded for three years (2019-2022) by Department of Science and Technology (DST), N. Delhi to me as Principal Investigator.
- II. A research project titled "**Luminescence studies of swift heavy ion irradiated rare earth doped MgO based nanophosphors**" worth of **Rs. 6,75,000/-** awarded for three years (2018-2021) by IUAC, New Delhi to me as Principal Investigator and Dr. Ankush Vij as Co-PI, from Amity University Haryana, Gurgaon.

Completed:

- I. A research project titled "**Phase Transition Studies of Ag doped Ge-Sb-Te Thin Films**" worth of **Rs. 26,77,408/-** awarded to me as Principal Investigator for three years (2014-2017) by the Department of Science and Technology (DST), N. Delhi was implemented at Department of Basic and Applied Sciences, Punjabi University, Patiala.
- II. I was one of the co-investigator of the project titled "**Preparation of Silicon Sheets by Capillary Action Shaping Technique (CAST) for solar cell Applications**" sanctioned by Department of Science and Technology, N. Delhi worth **Rs. 81,54,400/-** for three years and successfully completed (Principal Investigators: Dr. S.M.D. Rao & Prof. R.C. Verma).

8. Overseas visits related to research:

S. No.	Address of overseas institute/ Venue	Duration		Agency which sponsored the visit	Purpose of visit
		From	To		
1	Quebec, Canada	June 17, 2018	June 21, 2018	DST, New Delhi	To present research work in ISNOG 2018.
2	ICTP, Italy	April 4, 2016	April 15, 2016	ICTP	To attend School on Synchrotron and Free-Electron-Laser.
3	ICTP, Italy	November 17, 2014	November 28, 2014	ICTP-IAEA	To attend ICTP-IAEA School
4	DESY, Germany	October 7, 2013	October 9, 2013	DST, New Delhi	To present research work in GISAXS-2013.
5	NSRRC, Hsinchu, Taiwan	October 7, 2011	October 13, 2011	PAL, POSTECH, S. Korea	To perform XAS and XPS experiments.
6	Ningbo University, China	June 13, 2010	June 18, 2010	PAL, POSTECH, S. Korea	To present the research work in ISNOG-2010.
7	PAL, POSTECH, S. Korea	January, 2010	December, 2011	PAL, POSTECH, S. Korea	Post Doctorate Fellowship (PDF).

9. Ph.D. Students guided/under guidance:

Completed: 03, Ongoing: 06

10. Invited Talk/Expert Talk/Session Chair:

1. Delivered an invited talk in One Day Workshop on "Basics of Research Paper Writing" held on 8th June 2021, Sri Guru Gobind Singh College, Sector 26, Chandigarh.
2. Delivered series of invited talks in "Two days online National Workshop on Latex" held on March 1-2, 2021, Organized by Department of Physics, GSSDGS Khalsa College, Patiala, Punjab.
3. Delivered an expert lectures on "Superconductivity." In Refresher Course in Engineering Physics during October 12-23, 2020 organized by Department of Applied Sciences, National Institute of Technical Teachers Training & Research, Sector-26, Chandigarh.
4. Delivered an expert lecture on "Demonstration on research writing using LaTeX." In STC on "Research Pedagogy and Technical Writing" scheduled from 21/09/2020 to 25/09/2020 organized by Department of Computer Science and Engineering, National Institute of Technical Teachers Training & Research, Sector-26, Chandigarh.
5. Delivered an invited talk on "Writing research paper using LaTeX." In 84th Refresher Course in Information Communication Technology (ICT), held on from August 10, 2020 to August 24, 2020 organized by UGC-Human Resource Development Center, Punjabi University, Patiala, Punjab.
6. Delivered an invited talk on "How to write an article using LaTeX?" in 44th Faculty Induction Programme, Organized by UGC-Human Resource Development Center, Punjabi University, Patiala, Punjab from August 10, 2020 to September 08, 2020.
7. Delivered an expert talk on "UV-Vis-NIR Spectroscopy: Analytical Tool for Optical Analysis" in the One Week Short Term Course, Department of Physics, Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, from 30/12/19 to 03/01/2020.
8. Chaired a session in UGC Sponsored 10th National Conference on Recent Advances in Chemical and Environmental Sciences (RACES-2019), April 11-12, 2019, at Multani Mal Modi College, Patiala, Punjab, India.
9. Delivered an invited talk on "X-ray Diffraction and Rietveld Refinement" in the 2nd National Conference on 'Role of Mathematics and Computer Science in Advancement of Physics' Organized by Department of Physics, Govt. Degree College, Kathua (J & K) on 10th and 11th November 2017.
10. Delivered an expert talk on "Ge₂Sb₂Te₅ as Reversible NIR window" in National Conference on Recent Advances in Materials Science & Technology-2017 (RAMST-17) held on 21st April 2017, Amity University Haryana, Gurgaon.

11. Delivered an expert talk on "Brief introduction to Rietveld Refinement" in the short term course on "Recent advances in Nanostructured Materials" Department of Physics, Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, from September 19-23, 2016.
12. Chaired a session in two days National Seminar on "New Frontiers in Physics" March 02-03, 2016, at Gandhi Memorial National Postgraduate College Ambala Cantt, Haryana, India.
13. Expert Lectures on Latex Software in Refresher Course in Mathematics held during July 7-12, 2014, Chandigarh University, Gharuan, Punjab, India.

11. Conference/Workshop Organized:

1. As a Secretary, organized a Three Days National Workshop on LATEX and Technical Writing in the Department of Basic and Applied Sciences, Punjabi University, Patiala during 23–25 November, 2018.

12. List of Papers/Courses taught at P.G. and U.G. Level

S. No.	Paper	Class
1.	Material Science	Ph.D. Course Work
2.	Material Science	M.Phil.
3.	Condensed Matter Physics	M.Sc.
4.	Ceramic Materials and their Characterisations	M.Tech.
5.	Nanoelectronics Devices Engineering	M.Tech.
6.	Applied Physics-I	B.Tech.
7.	Applied Physics-II	B.Tech.

13. List of Papers Published in International Journals:

1. A review on GeTe thin film based phase change materials
K. Singh, S. Kumari, H. Singh, N. Bala, P. Singh, A. Kumar, **Anup Thakur**
Applied Nanoscience (2021) Accepted for publication. (Impact Factor: 2.880)
2. Probing the defects and trap distribution in MgAl₂O₄ nanocrystals through electron spin resonance and thermoluminescence
Savita, Sahil Dani, Sanjay Kumar, Fouran Singh, Ankush Vij, **Anup Thakur**
Journal of Physics D: Applied Physics (2021) Accepted for publication. (Impact Factor: 2.588)
3. Unravelling trapping defects distribution using thermoluminescence in gamma irradiated SrZnO₂:Dy nanophosphors
Manju, M. Jain, A. Kumar, A. Vij, **Anup Thakur**
Physica Status Solidi (a) - Applications and Materials Science (2021). (Impact Factor: 1.759)

4. Thermally induced cation ordering in $\text{ZnAl}_2\text{O}_4:\text{Mg}^{2+}$, Fe^{3+} for sensing thermal history through photoluminescence
M. Jain, Manju, M. Kumar, H. Lee, S. Won, K. Chae, G. Gupta, A. Vij, **Anup Thakur**
Journal of Material Science 56(21) (2021) 1-10. (Impact Factor: 3.553)
5. Modulation of radiative defects in MgAl_2O_4 nanocrystals probed using NMR, ESR, and PL spectroscopies
Savita, M. Jain, Manju, A.K. Sinha, F. Singh, A. Vij, **Anup Thakur**
Journal of Applied Physics 129 (2021) 125111. (Impact Factor: 2.286)
6. Fluorescent boron carbide quantum dots synthesized with a low-temperature solvothermal approach for boron neutron capture therapy
P. Singh, M. Kaur, K. Singh, R. Meena, M. Kumar, J. Yun, **Anup Thakur**, F. Nakagawa, M. Suzuki, H. Nakamura, A. Kumar
Physica E: Low-dimensional Systems and Nanostructures 132 (2021) 111766. (Impact Factor: 3.570)
7. Temperature-Dependent Ultrafast Charge Carrier Dynamics in Amorphous and Fluorescent Crystalline Sb_2Se_3 Thin Films
P. Singh, N. Ghorai, **Anup Thakur**, H. Ghosh
The Journal of Physical Chemistry C 125 (2021) 5197-5206. (Impact Factor: 4.189)
8. Low temperature carrier transport mechanism and photo-conductivity of WSe_2
M. Kaur, K. Singh, I. Chauhan, H. Singh, R.K. Sharma, A. Vij, **Anup Thakur**, A. Kumar
Journal of Alloys and Compounds 797 (2019) 148-151. (Impact Factor: 4.175)
9. Effect of ammonia gas on electrical properties of boron nitride/nickel oxide ($\text{BN}_{80}/\text{NiO}_{20}$) nanocomposite
K. Singh, M. Kaur, I. Chauhan, H. Singh, A. Awasthi, M. Kumar, **Anup Thakur**, A. Kumar
Journal of Materials Science: Materials in Electronics 32 (2021) 5556-5566. (Impact Factor: 2.195)
10. Galvanostatic deposition of manganese oxide films for super capacitive application and their fractal analysis
A. Singh, D. Singh, **Anup Thakur**, N. Gupta, V. Shinde, B. Singh, R. Kaur
Ionic 27(49) (2021) 1-10. (Impact Factor: 2.394).
11. Switchable cool and cold white emission from dysprosium doped SrZnO_2
Manju, M. Jain, P. Vashishtha, G. Gupta, A. Sharma, S. O. Won, A. Vij and **Anup Thakur**
J. Phys.: Condens. Matter 33 (2021) 035703. (Impact Factor: 2.707)
12. Photoconductivity of gold nanoparticles loaded boron nitride/nickel oxide nanocomposites
K. Singh, G. Kaur, M. Kaur, I. Chauhan, M. Kumar, **Anup Thakur**, A. Kumar

Chemical Physics Letters 762 (2021) 138153. (Impact Factor: 2.029)

13. Modification of structural and optical properties of Ag doped Ge₂Sb₂Te₅ thin films using swift heavy ion irradiation
N. Kanda, **Anup Thakur**, A.P. Singh
AIP Conference Proceedings 2265 (2020) 030230.
14. Annealing evolution to physical properties of CdCl₂ activated CdTe:Cu films for absorber layer functioning
Himanshu, S.L. Patel, D. Agrawal, S. Chander, **Anup Thakur**, M.S. Dhaka
AIP Conference Proceedings 2265 (2020) 030330.
15. Oxygen vacancies induced photoluminescence in SrZnO₂ nanophosphors probed by theoretical and experimental analysis
Manju, M. Jain, S. Madas, P. Vashishtha, P. Rajput, G. Gupta, M.U. Kahaly, K. Ozdogan, A. Vij and **Anup Thakur**
Sci. Rep. 10 Article number: 17364 (2020). (Impact Factor: 4.259)
16. Mechanistic insights into defect generation and tuning of optical properties in Zn_{1-x}Fe_xAl₂O₄ (0.01 ≤ x ≤ 0.40) nanocrystals
M. Jain, Manju, P. Vashishtha, G. Gupta, A. K. Sinha, M. Gupta, A. Vij and **Anup Thakur**
Acta Crystallographica Section B (2020) B76. (Impact Factor:2.048)
17. Enhanced performance of Fe-doped manganese oxide films as a supercapacitor electrode
A. Singh, D. Kumar, Anup Thakur, B.S. Saini, R. Kaur
Bulletin of Materials Science 43 (2020) Article No.: 165 (Impact Factor:1.392)
18. Thickness dependent structural, morphological and optical properties of molybdenum oxide thin films
S. Kumari, K. Singh, P. Singh, S. Kumar, **Anup Thakur**
SN Applied Sciences 2 (2020) 1439.
19. BN/NiO nanocomposites: Structural, defect chemistry and electrical properties in hydrogen gas atmosphere
K. Singh, M. Kaur, I. Chauhan, A. Awasthi, M. Kumar, **Anup Thakur**, A. Kumar
Ceramics International 46 (2020) 26233. (Impact Factor: 3.83)
20. Tailoring of Structural, Morphological and Optical Properties of Boron Nitride/Nickel Oxide (BN_{100-x}/NiO_x) Nanocomposites
K. Singh, M. Kaur, I. Chauhan, R. Meena, J. Singh, **Anup Thakur**, A. Kumar
Journal of Cluster Science (2020). (Impact Factor:2.125)
21. Structural, morphological and temperature-dependent electrical properties of BN/NiO nanocomposites
K. Singh, **Anup Thakur**, A. Awasthi, A. Kumar

Journal of Materials Science: Materials in Electronics 31 (2020) 13158-13166.
(Impact Factor: 2.195)

22. Activation of multiple defects in zinc aluminate through gamma and UV irradiation
M. Jain, Manju, Savita, A. Vij and **Anup Thakur**
Vacuum 180 (2020) 109600. (Impact Factor: 2.906)
23. Temperature-Dependent Trap-Assisted Ultrafast Carrier Dynamics in Amorphous and Crystalline In₂Se₃ Thin Films
P. Singh, G. Kaur, N. Ghorai, T. Goswami, **Anup Thakur**, H. Ghosh
Physical Review Applied 14 (2020) 014087. (Impact Factor: 4.194)
24. Color modulation by selective excitation activated defects and complex cation distribution in Zn_{1-x}Mg_xAl₂O₄ nanocrystals
M. Jain, Manju, M. Kumar, H.W. Lee, S.O. Won, A. Vij and **A. Thakur**
Dalton Transactions 49 (2020) 9336-9348. (Impact Factor: 4.174)
25. Pure and Al-doped SnO₂ thin films: Structural, morphological and electrical properties
K. Singh, A. Singh, M. Kumar, R. Bala, **Anup Thakur**, A. Kumar
AIP Conference Proceedings 2220 (2020) 020104.
26. Towards MgCl₂ passivation to Cu doped CdTe films: Optimization of structural and optoelectrical properties
Himanshu, S.L. Patel, R. Agarwal, S. Chander, **Anup Thakur**, M.S. Dhaka
AIP Conference Proceedings 2220 (2020) 090027.
27. Impact of Bi doping on CdTe thin films: Thermal annealing evolution of physical properties for solar cell absorber layer applications
Himanshu, S.L. Patel, **Anup Thakur**, M.D. Kannan, M.S. Dhaka
Thin Solid Films (2020). (Impact Factor: 1.888)
28. Analysis of different annealing conditions on physical properties of Bi doped CdTe thin films for potential absorber layer in solar cells
Himanshu, S.L. Patel, **Anup Thakur**, M.D. Kannan, M.S. Dhaka
Solar Energy 199 (2020) 772-781. (Impact Factor:4.674)
29. Tailoring structural and optical properties of ZrO₂ with nickel doping
D. Kumar, A. Singh, N. Kaur, Anup Thakur, R. Kaur
SN Applied Sciences 2 (2020) 644.
30. Effect of ion irradiation on the optical properties of Ag-doped Ge₂Sb₂Te₅ (GST) thin films
Neetu Kanda, Anup Thakur, Fouran Singh, Abhinav Pratap Singh
Nuclear Instruments and Methods in Physics Research Section B Beam Interactions with Materials and Atoms 467 (2020) 40-43. (Impact Factor:1.210)

31. Excitation energy dependent switchable emission in SrZnO₂ nanophosphors: XAS and luminescence studies
Manju, M. Jain, P. Vashishtha, S. Kumar, P. Rajput, G. Gupta, A. Vij and **A. Thakur**
J. Mater. Chem. C **8** (2020) 3147-3155. (Impact Factor:6.641)
32. Recent Progress on Pyrite FeS₂ Nanomaterials for Energy and Environment Applications: Synthesis, Properties and Future Prospects
G. Kaur, M. Kaur, **A. Thakur**, A. Kumar
Journal of Cluster Science (2020). (Impact Factor:2.125)
33. Defect states and kinetic parameter analysis of ZnAl₂O₄ nanocrystals by X-ray photoelectron spectroscopy and thermoluminescence
M. Jain, Manju, R. Kumar, S. O. Won, K. H. Chae, A. Vij and **A. Thakur**
Scientific Reports **10** (2020) 385. (Impact Factor: 4.259)
34. Estimating trap distribution and intertrap charge transfer in SrZnO₂ nanoparticles
Manju, Megha Jain, D. Sen, A. Vij, **Anup Thakur**
Journal of Physics and Chemistry of Solids **136**, (2020) 109052 (2020). (Impact Factor: 2.752)
35. Towards cost effective absorber layer to solar cells: Optimization of physical properties to Cu doped thin CdTe films
Himanshu, S.L. Patel, D. Agrawal, S. Chander, **Anup Thakur**, M.S. Dhaka
Materials Letters **254** (2019) 141-144. (Impact Factor: 3.019)
36. NiO nanostructures: Effect of iron doping on structural, defect chemistry and spectroscopic properties
K. Singh, M. Kumar, P. Singh, G. Kaur, B. Singh, **Anup Thakur**, J. Yun, A. Kumar
AIP Conference Proceedings **2115** (2019) 030121.
37. Composition dependent structural phase transition and optical band gap tuning in InSe thin films
H. Singh, P. Singh, R. Singh, J. Sharma, A. P. Singh, A. Kumar and **A. Thakur**
Heliyon, **5** (2019) e02933.
38. Effect of Ag doping on electrical properties Ge₂Sb₂Te₅ thin films
Neetu Kanda, **Anup Thakur**, A.P. Singh
AIP Conference Proceedings **2115** (2019) 030260.
39. Enhanced near-infrared luminescence in zinc aluminate bestowed by fuel-blended combustion approach
M. Jain, Manju, A. Gundimeda, A. Kumar, S. Kumar, G. Gupta, S. Won, K. Chae, A. Vij, **Anup Thakur**
Journal of Alloys and Compounds **797** (2019) 148-151. (Impact Factor: 4.175)
40. Impact of annealing on the structural properties of MgO nanoparticles by XRD analysis and Rietveld refinement
Savita Wadhwa, M. Jain, Manju, A. Vij, **Anup Thakur**
AIP Conference Proceedings **2093** (2019) 020024-4.

41. Bi-incorporated CdTe thin films for solar cells: Air annealing evolution to structural, optical, electrical and surface topographical properties
Himanshu, S.L. Patel, S. Chander, P. Singh, **Anup Thakur**, M.S. Dhaka
Materials Letters **249** (2019) 29-32. (Impact Factor: 3.019)
42. Defect induced broadband visible to near-infrared luminescence in ZnAl₂O₄ nanocrystals
M. Jain, Manju, A. Gundimeda, S. Kumar, G. Gupta, S. Won, K. Chae, A. Vij, **Anup Thakur**
Applied Surface Science **480** (2019) 945-950. (Impact Factor: 6.182)
43. Thermal stability improvement and crystallization behaviour of Ag doped Ge₂Sb₂Te₅ phase change materials
P. Singh, A.P. Singh, **Anup Thakur**
Journal of Materials Science: Materials in Electronics **30** (2019) 3604-3610. (Impact Factor: 2.195)
44. Composition dependence study of thermally evaporated nanocrystalline ZnTe thin films
T. Singh, J. Sharma, H. Singh, **Anup Thakur**, M. Singh, J. Singh, B. Bansod, W. Wani
Journal of Materials Science: Materials in Electronics **30** (2019) 3504-3510. (Impact Factor: 2.195)
45. Morphology controlled electrochemical capacitive behaviour of manganese oxide films
A. Singh, D. Kumar, **Anup Thakur**, R. Kaur
Functional Material Letters **12** (2019) 1850099. (Impact Factor: 1.388)
46. Reduction of rocksalt phase in Ag-doped Ge₂Sb₂Te₅: A potential material for reversible near-infrared window
P. Singh, A.P. Singh, J. Sharma, A. Kumar, M. Mishra, G. Gupta, and **Anup Thakur**
Physical Review Applied **10** (2018) 054070. (Impact Factor: 4.194)
47. Single step synthesis and characterization of ZnAl₂O₄ nanoparticles
M. Jain, Manju, K. Singh, A. Kumar, J. Sharma, K.H. Chae, A. Vij, **Anup Thakur**
AIP Conference Proceedings **1953** (2018) 030068-71.
48. Structural and photoluminescence study of bulk SrZnO₂
Manju, M. Jain, R. Kumar, S. Kumar, **Anup Thakur**, A. Vij
AIP Conference Proceedings **1953** (2018) 060013-16.
49. Role of Cu in engineering the optical properties of SnO₂ nanostructures: Structural, morphological and spectroscopic studies
V. Kumar, K. Singh, M. Jain, Manju, A. Kumar, J. Sharma, A. Vij, **Anup Thakur**
Applied Surface Science **444** (2018) 552-558. (Impact Factor: 6.182)
50. Size-controlled synthesis of nanocrystalline CdSe thin films by inert gas condensation
J. Sharma, R. Singh, A. Kumar, T. Singh, P. Agrawal, **Anup Thakur**

Applied Nanoscience 8 (2018) 359-367. (Impact Factor: 2.880)

51. Enhanced moisture sensing properties of nanostructured ZnO coated capacitive sensor
J. Sharma, H. Singh, T. Singh, T. Singh, A. Kumar, B.S. Bansod, **Anup Thakur**
RSC Advances 8 (2018) 3839-3845. (Impact Factor: 3.070)
52. Effect of vacuum annealing on structural and optical properties of nanocrystalline ZnTe thin films
H. Singh, N. Duklan, T. Singh, **Anup Thakur**, J. Sharma
Journal of Materials Science: Materials in Electronics 29 (2018) 4992-4998. (Impact Factor: 2.195)
53. Nanocrystalline Zn_xTe_{100-x} ($x = 0, 5, 20, 30, 40, 50$) thin films: Structural, optical and electrical properties
H. Singh, P. Singh, **Anup Thakur**, T. Singh, J. Sharma
Materials Science in Semiconductor Processing 75 (2018) 276-282. (Impact Factor: 3.085)
54. High transmittance contrast in amorphous to hexagonal phase of $Ge_2Sb_2Te_5$: Reversible NIR-window
P. Singh, A.P. Singh, N. Kanda, M. Mishra, G. Gupta, **Anup Thakur**
Applied Physics Letters 111 (2017) 261102. (Impact Factor: 3.597)
55. Electrochemical aspects of photocatalysis: Au@FeS₂ nanocomposite for removal of industrial pollutant
G. Kaur, D. Pooja, M. Kumar, **Anup Thakur**, R. Bala, A. Kumar
Physical Chemistry Chemical Physics 19 (2017) 32412-32420. (Impact Factor: 3.430)
56. Effect of visible light on the structural and optical properties of $(Ge_2Sb_2Te_5)_{100-x}Ag_x$ ($x = 0, 1$ and 3) thin films
P. Singh, R. Kaur, P. Sharma, V. Sharma, **Anup Thakur**.
Journal of Materials Science: Materials in Electronics 29 (2017) 1042-1047. (Impact Factor: 2.195)
57. Zn-doped SnO₂ nanostructures: structural, morphological and spectroscopic properties
V. Kumar, K. Singh, J. Sharma, A. Kumar, A. Vij, **Anup Thakur**
Journal of Materials Science: Materials in Electronics 28 (2017) 18849-18856. (Impact Factor: 2.195)
58. Structural and optical properties of Sb_xSe_{100-x} ($x = 0, 5$) thin films
P. Singh, R. Kaur, A. Kumar, **Anup Thakur**
Optical and Quantum Electronics 49 (9) (2017) 288. (Impact Factor: 1.842)
59. Synthesis of SnSe₂ thin films by thermally induced phase transition in SnSe
J. Sharma, R. Singh, H. Singh, T. Singh, P. Singh, **Anup Thakur**, S. K. Tripathi
Journal of Alloys and Compounds 724 (2017) 62-66. (Impact Factor: 4.175)

60. Optical Band Gap Tuning of Ag Doped $\text{Ge}_2\text{Sb}_2\text{Te}_5$ Thin Film
P. Singh, P. Sharma, V. Sharma, M. Mishra, G. Gupta, **Anup Thakur**
Journal of Materials Science: Materials in Electronics 28 (2017) 11300-11305.
(Impact Factor: 2.195)
61. Iron Disulfide (FeS_2): A Promising Material for Removal of Industrial Pollutants
G. Kaur, B. Singh, P. Singh, M. Kaur, **Anup Thakur**, M. Kumar, R. Bala, A. Kumar
Chemistry Select 2(6) (2017) 1-9. (Impact Factor: 1.811)
62. Effect of Varying Reactant Precursors on Synthesis of Nanostructured Iron Disulphide (FeS_2)
G. Kaur, B. Singh, P. Singh, M. Kaur, **Anup Thakur**, M. Kumar, R. Bala, A. Kumar
Advanced Materials Proceedings 2(2) (2017) 117-118.
63. Linear and Non-Linear Optical Properties of Ag Doped $\text{Ge}_2\text{Sb}_2\text{Te}_5$ Thin Films Estimated by Single Transmission Spectra
P. Singh, P. Sharma, V. Sharma, **Anup Thakur**
Semiconductor Science and Technology 32 (2017) 045015. (Impact Factor: 2.361)
64. Effect of Solvent on Crystallographic, Morphological and Optical Properties of SnO_2 Nanoparticles
V. Kumar, K. Singh, A. Kumar, M. Singh, K. Singh, A. Vij, **Anup Thakur**
Materials Research Bulletin 85 (2017) 202-208. (Impact Factor: 4.019)
65. Gap state Related Blue Light Emitting Boron-Carbon Core Shell Structures
P. Singh, M. Kaur, B. Singh, G. Kaur, K. Singh, M. Kumar, R. Bala, **Anup Thakur**,
and A. Kumar
AIP Conference Proceedings 1728 (2016) 020690-94.
66. Nanostructured Boron Nitride with High Water Dispersibility for Boron Neutron Capture Therapy
B. Singh, G. Kaur, P. Singh, K. Singh, B. Kumar, A. Vij, M. Kumar, R. Bala, R. Meena, A. Singh, **Anup Thakur** and A. Kumar
Scientific Reports 6 Article No: 35535 (2016) 1-10. (Impact Factor: 4.259)
67. Effect of Solvent on the Synthesis of SnO_2 Nanoparticles
V. Kumar, K. Singh, K. Singh, S. Kumari, A. Kumar and **Anup Thakur**
AIP Conference Proceedings 1728 (2016) 020532-35.
68. Preferentially Grown Nanostructured Iron Disulfide (FeS_2) for Removal of Industrial Pollutants
G. Kaur, B. Singh, P. Singh, M. Kaur, K. K. Buttar, K. Singh, **Anup Thakur**, R. Bala, M. Kumar and A. Kumar
RSC Advances 6 (2016) 99120-99128. (Impact Factor: 3.070)
69. Effect of Annealing on the Structure of Chemically Synthesized SnO_2 Nanoparticles
K. Singh, V. Kumar, A. Vij, S. Kumari, A. Kumar, and **Anup Thakur**

AIP Conference Proceedings 1728 (2016) 020536-39.

70. Fabrication of Multilayer Nanowires

J. Kaur, A. Singh, D. Kumar, **Anup Thakur**, R. Kaur
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110. Photoelectrical Properties in Thin Films of $(\text{Ge}_{20}\text{Se}_{80})_{0.98}\text{Sn}_{0.02}$ Glassy Alloy
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14. Conference/Workshop/Symposium attended:

1. 21st International Symposium on Non-Oxide and New Optical Glasses (ISNOG 2018), held at the Quebec, Canada, from 17-21 June, 2018.
2. National Conference on 'Recent Advances in Experimental and Theoretical Physics (RAETP-2018) held on April 17-18, 2018, Central University of Jammu, J&K, India.
3. 9th National Conference on 'Recent advances in Chemical, Biological & Environmental Sciences (RACES-2018) held on February 09-10, 2018, Modi College, Patiala, Punjab, India.
4. National Conference on Recent Advances in Materials Science & Technology-2017 (RAMST-17) on 21st April 2017, Amity University Haryana, Gurgaon.
5. Short Term Course for Asstt. Prof. Grade III on "Quality Management in Higher Education" organized by the Human Resource Development Centre, Panjab University, Chandigarh w.e.f. 17-01-2017 to 23-01-2017.
6. 61st Accelerator Users Workshop held on December 16-18, 2016 at Inter-University Accelerator Centre, New Delhi.
7. One Day National Workshop on IPR awareness and Plagiarism Detection for India Languages, May 13, 2016 at Department of Computer Science, Punjabi University, Patiala, Punjab, India.
8. School on Synchrotron and Free-Electron-Laser Based Methods: Multidisciplinary Applications and Perspectives, 04-15 April, 2016 at ICTP, Trieste, Italy.
9. International conference on Recent Advances in Emerging Technologies (ICRAET-2016) from February 23-24, 2016 at Shri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab.
10. International Conference on Emerging Areas of Mathematics for Science and Technology from 30th January to 1st February, 2015 at Patiala, Punjab, India.
11. Joint ICTP-IAEA School on Novel Experimental Methodologies for Synchrotron Radiation Applications in Nano-Science and Environmental Monitoring, 17-28 November, 2014 at ICTP, Trieste, Italy.
12. International Conference on Condensed Matter Physics 2014 (ICOMP-2014), November 4-6, 2014, at Department of Physics, H.P. University, Shimla, India.
13. NRC-M Workshop on Phase Field Modeling, held at the Department of Materials Engineering, Indian Institute of Science, Bangalore, from 08-12 June 2014.
14. NRC-M Winter Workshop on Integrated Computational Materials Engineering, held at the Department of Materials Engineering, Indian Institute of Science, Bangalore, from 23-27 December 2013.

15. International Workshop on Grazing Incidence Small Angle X-ray Scattering (GISAXS-2013), held at the DESY, Germany, from 7-9 October 2013.
16. National Workshop on Latex, from 8-10 July, 2013 organized by School of Applied Sciences, Chitkara University, Punjab.
17. National Workshop on Nano Science and Technology (NST-2013) held at the NIT, Hamirpur, from 3-7 June 2013.
18. UGC-Sponsored Refresher Course from 6th May to 25th May 2013 at Academic Staff College, Panjabi University, Patiala.
19. International Conference on Recent Trends in Applied Physics & Material Science (RAM 2013), February 01-02, 2013, at Govt. College of Engineering & Technology, Bikaner.
20. International Conference on Emerging Trends in Physics for Environmental Monitoring & Management (ETPEMM-2012), 17-19, December 2012, at Department of Physics, Punjabi University, Patiala, Punjab, India.
21. International Conference on Materials Science and Technology (ICMST 2012), 10-14 June 2012, at St. Thomas College, Pala, Kerala, India.
22. UGC-Sponsored Refresher Course from 23th April to 15th May 2012 at Academic Staff College, Himachal Pradesh University, Shimla.
23. International Conference on Recent Trends in Physics (ICRTP 2012), 4–5 February 2012, School of Physics, Devi Ahilya University, Indore, India.
24. National Conference on Recent Advances in Material Science [NCRAMS-2012], 25–26 February 2012, Dyal Singh College, Karnal, Haryana, India.
25. The 24th Workshop on Nanoscale and Mesoscopic Systems “Topological Insulators: Recent Developments” November 24-25, 2011, at Posco International Center, POSTECH, Pohang, S. Korea.
26. Korean Physical Society Meeting, 19-21 October 2011, at Busan, South Korea.
27. 2011 International Forum on Functional Materials (IFFM2011) and the 2nd Special Symposium on Advances in Functional Materials (AFM-2), July 28-31, 2011, at Jeju Grand Hotel, Jeju, S. Korea.
28. Korean Physical Society Meeting, 13-15 April 2011, at Daejeon, South Korea.
29. 55th DAE Solid State Symposium, 26-30 December 2010 at Manipal, India.
30. Workshop for ab initio powder structure determination for chemists and material scientists & 3rd powder crystallography tutorial course at Postech, South Korea from 27-29 October 2010.
31. Korean Physical Society Meeting, 20-22 October 2010, at Pyongsong, South Korea.
32. 17th International Symposium on Non-Oxide and New Optical Glasses (ISNOG-2010), June 13th-18th, 2010 at Ningbo, China.
33. International Convention on Solar Photovoltaic Technologies, 5th October 2009, at Guru Gobind Singh Indraprastha University, New Delhi.
34. Workshop on Structural Characterization of Materials, 29th June to 17th July 2009, at Department of Materials Engineering, Indian Institute of Science, Bangalore, India.
35. UGC-Sponsored Orientation Program from 2nd December to 29th December 2008 at Academic Staff College, Panjab University, Chandigarh.
36. Contact meeting for popularizing the national Fusion Programme CMPNFP-08 (Northern Region) organized by the Department of Applied Science & Humanities in association with Board for Research in Fusion Science & Technology (BRFST) India, held at NIT Hamirpur (H.P.) on 29th November 2008.
37. National Seminar on Radiation and Materials (NSRM08) from 10-11, March, 2008 at Physics Department, Punjabi University, Patiala.

38. National Symposium on Nanomaterials Design, Bridging Nanolength scale (NSNMD-2007) held on 17th November 2007 at NIT Hamirpur, H.P. India.
39. Symposium on Radiation Sources, Detection and Applications (SRSDA07), held at Physics Department, Punjabi University, Patiala, during Feb. 5-6, 2007.
40. XV International Symposium on Non-Oxide and New Optical Glasses from April 10-14, 2006 at IISc. Bangalore, India.
41. XXXI Symposium of the Optical Society of India, Dec. 2005, IRDE, Dehradun, India.
42. DAE Solid State Physics Symposium from Dec. 26-30, 2004 at GNDU Amritsar, India.
43. 91st Indian Science Congress from January 3-7, 2004 at Panjab Univ., Chandigarh, India.
44. National Conference on Materials and their Applications (NCMA-2004) from March 11-13, 2004 at Department of Physics, Kurukshetra University, Kurukshetra, India.
45. 45th DAE Solid State Physics Symposium from Dec. 26-30, 2002 at Panjab University, Chandigarh, India.
46. Second National Conference on Thermo-Physical Properties from September 19-21, 2002 at Department of Physics, University of Rajasthan, Jaipur, India.
47. National Seminar on Materials and Devices (MD-2002) from March 9-10, 2002 at M.J.P. Rohilkhand University, Bareilly, India.
48. Seminar on “Computational Techniques in Physics” from March 6-7, 2002 at Panjab University, Chandigarh.

Date: 08/06/2021

Anup Thakur
(Signature of the Teacher)