

## Bio-data

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Name	:	Dr. P. Arun
Father's Name	:	Mr. K. C. Raghavan
E-mail id	:	arunp92@sgtbkhalsa.du.ac.in arunp92@yahoo.co.in
Nationality/Category	:	Indian (General)
Employment/ Employer	:	Professor (Since July 2018) Departemnt of Electronics S.G.T.B. Khalsa College University of Delhi, Delhi 110 007
Educational Qualification*	:	Ph.D, M.Sc (Physics) <i>Spl Electronics</i>
Field of Research	:	Material Science

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\* **Title of Thesis** : *"Potential of Sb<sub>2</sub>C<sub>3</sub> (C=S, Se, Te) films for Photo-thermal Phase Change Optical Storage."*<sup>1</sup>

## *Academic Record (from Secondary School onwards)*

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S.No	Exam Passed	University/ Board	Year of passing	Subjects
1.	X	C.B.S.E.	1985	
2.	XII	C.B.S.E.	1987	Science
3.	Graduation	D.U.	1990	Physics
4.	Post-Grad.	D.U.	1992	Physics
5.	Doctorate	D.U.	1999	

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<sup>1</sup> Worked for Doctorate between Oct '93 - Jan '98 under the supervision of Dr. A. G. Vedeshwar, Deptt. of Physics & Astrophys., University of Delhi, Delhi.

## *Award/Fellowships*

- \* Cleared **CSIR-UGC** joint examination **June '92** and declared eligible for lecturer-ship (**NET**).
- \* Cleared **CSIR-UGC** joint examination **Dec '92** and declared eligible for lecturer-ship (**JRF & NET**).
- \* Cleared **GATE '93** with **94.3** percentile.
- \* Selected for **SRF (Ext.)** on the basis of interview held by **CSIR** in **Feb '99** (Declined offer).

## *Educational Institutes Attended*

Primary and Junior School : Old Field School, London.  
 Sec. and Senior Sec. School : New Greenfield Public School, Saket (Delhi).  
 Graduation, B.Sc(Hons.) : A.R.S.D. College, Univ. of Delhi.  
 Post-Graduation and Doctorate : Deptt. of Physics & Astrophysics, Univ. of Delhi.

## **Work Experience**

**Total Teaching Experience 26 years.**

1. Worked in Hansraj College (D.U.) as *Guest lect. (95-96)*; as *Adhoc lect. (96-97)*.
2. Joined S.G.T.B. Khalsa College (D.U.) in Aug 97.
3. Taught Post-Grad level, Department of Electronic Science, University of Delhi (South Campus) as Visiting Faculty (2011-12, 2012-13 & 2019-20).
4. Designed and taught Course-work (PhD), Department of Electronics Science, University of Delhi (South Campus) (2018-21).

## *Details of Research Guidance*

4. Dr.Yashika Gupta (submitted March 2018)  
 PhD Thesis Titled  
*“Development, Characterization And Optimization of p-SnS Thin Films For Photovoltaic Applications”*  
 (University of Delhi, Delhi)
3. Dr.Priyal Jain (submitted Oct 2015)  
 PhD Thesis Titled  
*“Surface Plasmon Resonance in Tin Sulphide Thin Films: Application in Solar Cells”*  
 (University of Delhi, Delhi)
2. Dr.Kuldeep Kumar (submitted Dec 2013)  
 PhD Thesis Titled  
*“A Study of Optical Properties of Cesium Halide, CsX (X=Cl, Br, I) Thin Films Deposited by Thermal Evaporation Method”*  
 (Co-supervision with Dr.Chhaya Ravikant, Guru Gobind Indraprasta Univ, Delhi)
1. Dr.Shabnam (submitted July 2011)  
 PhD Thesis Titled  
*“Studies on Semiconductor-Semiconductor (ZnO:Si) Nanocomposites and their various properties”*  
 (Co-supervision with Dr.Chhaya Ravikant, Guru Gobind Indraprasta Univ, Delhi)

## *Details of Research Assistance Given*

3. Mounika Tirukoti  
(University of Mysore, Karnataka)
2. Dr. Lovkush (submitted June 2021)  
PhD Thesis Titled  
*“Study of Optical Properties of Cesium Halide-Silver Complex Nanostructure Thin Films”*  
(I.P. University, Delhi)
1. Dr. Vadiraj K. T. (submitted June 2017)  
PhD Thesis Titled  
*“Synthesis of Nanomaterials, Characterization and Development of Hybrid Photovoltaic Cells”*  
(University of Mysore, Karnataka)

## *List of Under Graduate Research/ Dissertations Supervised*

17. Kunsh Bhagat and Harshit Mittal (2023)  
*“Study the velocity of sound”*
16. Ravneet Kaur (2023)  
*“Numerical study of wave equation solutions”*
15. Suhas Adiga (2023)  
*“Formation of Cooper Pairs- A Pedagogical Approach”*
14. Varun Srivastava (2023)  
*“An over view of Reinforcement Learning with Tic-Tac-Toe and Python”*
13. Sehaj Gambhir (2023)  
*“Study of Aluminium Air Battery”*
12. Sanskriti Grover (2022)  
*“Electronic Writing Pad using Arduino Uno”*
11. Rashmeet Kaur Khurana (2019)  
*“Study of Scintillation behaviour in Cadmium Halide films doped with silver”*
10. Tarun Thakur (2019)  
*“Design and Development of a mini-CNC machine using Arduino”*
9. Rekha (2019)  
*“An overview of autonomous car navigation using GPS”*
8. Anubhav Sethi (2019)  
*“Quantum Physics of Nano-particles”*
7. Smriti Kaur Arora (2019)  
*“Fabrication of Stable  $\text{C}_{60}\text{PbI}_3$  Perovskite Thin Films by thermal evaporation”*
6. Saurav Dagar, Damanpreet and Goresh Sharma (2018)  
*“Designing of a wheel tester for motor characterisation and an investigation of power regeneration”*
5. Amit Singhal (2009)  
*“Develop a single board 8085 computer”*
4. Akhil Arora, Rahul Rawat, Sampreet Kaur (2008)  
*“A Circuit for Studying the Damping Motion of a Simple Pendulum”*
3. Charu Saxena and Rini Kaur (2008)  
*“Reaction Time of a Group of Physics Students”*
2. Madhur Garg and Kalimullaha (2007)  
*“Accurate measurement of the position and velocity of a falling object”*
1. Arti Dwivedi and Sumit Ghambir (2003)  
*“Developing Parallel Port I/O Cards for Conducting Simple Physics Experiments”*

## List of Publications

Total Work Published in International Journals = 55

From 2016-2025 (23)

55. *“Change in Refractive Index of p-SnS Thin Film due to Molecular Polarizability”*  
Vinita, **P.Arun**, Chandra Kumar, Richa Rai and Bharatendu Kumar Singh  
**J. Photon. Energy**, **14** 034002 (2024)
54. *“Optimizing Spin-Coat Speed for Fabrication of P3HT:PCBM Solar Cells”*  
Tirukoti Mounika, Shiddappa L. Belagali, Inderpreet Singh, Nimmi Singh, Kuldeep Kumar and **P.Arun**  
**J Mater Sci Manufac Res**, **5** 2-6 (2024)
53. *“An Experimental Insight into the Reasons for Deterioration of P3HT:PCBM Bulk Heterojunction Solar Cells”*  
Tirukoti Mounika, Shiddappa L. Belagali, Inderpreet Singh, Kuldeep Kumar and **P.Arun**  
**Applied Solar Energy**, **59** 410 (2023)
52. *“Surface Plasmon Resonance in Metal Nano-spheres Explained with LCR Circuits”*  
Shivangi Dubey, Kuldeep Kumar and **P.Arun**  
**Physical Chemistry Chemical Physics**, **25** 13708-13715 (2023)
51. *“Luminescence Behavior of CsI:Ag Thin Films”*  
Rashmeet Khurana, Inderpreet Singh, Kuldeep Kumar, **P.Arun** and Devinder Madhwal  
**Materials Science in Semiconductor Processing**, **110** 104881 (2020)
50. *“Tunability of Surface Plasmon Resonance Peaks in CsI:Ag Films by Growth Conditions”*  
Lovkush, Chhaya Ravikant and **P.Arun**  
**Plasmonics**, **15** 735 (2020)
49. *“An Novel Route for Fabrication of Stable CsPbI<sub>3</sub> Perovskite Thin Film by Thermal Evaporation”*  
Yashika Gupta, **P.Arun**, S.V.Syrotyuk, Kuldeep Kumar and Smriti Arora  
**Chemistry Select**, **4** 5091 (2019)
48. *“Plasmon coupling and aging effect in CsCl-Ag thin films”*  
Lovkush, Chhaya Ravi Kant and **P.Arun**  
**Mater. Res. Exp.**, **5** 096405 (2018)
47. *“SPR in Cesium Halide Thin Films due to Embedded Elliptical Cesium Metal Nanoparticles”*  
Kuldeep Kumar and **P.Arun**  
**Ukranian J. Phys.**, **63** 824 (2018)
46. *“Ab Initio Calculation of stressed Cesium Iodide lattices and resulting Surface Plasmon Resonance Peak shifts”*  
Kuldeep Kumar, **P.Arun** and S.V.Syrotyuk  
**Inter. J. Mod. Phys. B**, **32** 1850205 (2018)
45. *“Mitigating Reasons for the Poor Performance of n-CdS/p-SnS Solar Cells”*  
Yashika Gupta, Chhaya Ravikant and **P.Arun**  
**Global Challenges**, **1800017** (2018)
44. *“Zener Behaviour of p-SnS/ZnO and p-SnS/ZnS Heterojunctions”*  
Yashika Gupta and **P.Arun**  
**Mater. Res. Express**, **5** 036409 (2018)
43. *“Contribution of Lattice Parameter and Vacancies on Anisotropic Optical Properties of Tin Sulphide”*  
C.I.Zandalazini, J.Navarro Sanchez, E.A.Albanesi, Yashika Gupta and **P.Arun**  
**J Alloys Compd**, **746** 9 (2018)
42. *“Photoluminescence and Applications of Ni:ZnS in Photovoltaic Cells”*  
K.T. Vadiraj, Shiddappa L. Belagali, **P.Arun** and Kuldeep Kumar  
**Jap. J. Appl. Phys.**, **57** 052303 (2018)
41. *“Analysing The Diode With A Shunt Resistance In The Piecewise Model”*  
Yashika Gupta and **P.Arun**  
**Journal of Active and Passive Electronic Devices**, **14** 1-7 (2019)
40. *“Optimization of SnS active layer thickness for solar cell application”*  
Yashika Gupta and **P.Arun**  
**Journal of Semiconductors**, **38** 113001 (2017)

39. *"Influence of strain on the sensitivity of tin sulphide films"*  
Yashika Gupta and **P.Arun**  
**Materials Chemistry and Physics**, **191** 86 (2017)
38. *"Influence Of Urbach Tail On The Refractive Index Of p-SnS Thin Films"*  
Yashika Gupta and **P.Arun**  
**Physics Status Solidi-C**, **14** 1600207 (2016)
37. *"Defect diffusion assisted formation of cesium metal clusters in cesium halide thin films"*  
Kuldeep Kumar and **P.Arun**  
**Journal of Taibah University for Science**, **11** 1238 (2017)
36. *"SPR sensitivity of silver nanorods in CsBr-Ag nanocomposite thin films"*  
Lovkush, Chhaya Ravi Kant, **P.Arun** and Kuldeep Kumar  
**Materials Research Express**, **3** 076403 (2016)
35. *"Grain Size and Lattice Parameter's Influence on Band-gap of SnS thin nano-crystalline films"*  
Yashika Gupta, **P.Arun**, A.A. Naudi, M.V. Walz, E.A. Albanesi  
**Thin Solid Films**, **612** 310 (2016)
34. *"Improved Efficiency of Plasmonic Tin Sulfide Solar Cells"*  
Priyal Jain, Poonam Shokeen and **P.Arun**  
**J Mater. Sci.: Mater Electron**, **10** 1418 (2016)
33. *"Suitability of SnS thin films for photo-voltaic application due to the existence of persistent photo current"*  
Yashika Gupta and **P.Arun**  
**Phys. Status Solidi B**, **253** 509 (2016)

#### From 2006-2015 (16)

32. *"Surface Plasmon Resonance of Dumb-bell Nanostructure"*  
R Ajith, Vincent Mathew and **P. Arun**  
**Phys. Scr.**, **89** 085501 (2014)
31. *"Localized Surface Plasmon Resonance in SnS:Ag Nano-composite Films"*  
Priyal Jain and **P. Arun**  
**J. Appl. Phys.**, **115** 204512 (2014)
30. *"Influence of grain size on the band-gap of annealed SnS thin films"*  
Priyal Jain and **P. Arun**  
**Thin Solid Films**, **548** 241-246 (2013)
29. *"Refractive Index of SnS Thin Nano-crystalline Films"*  
Amit Jakhar, Ashu Jamdagni, Ayushi Bakshi, Taruna Verma, Vibhav Shukla, Priyal Jain, Nidhi Sinha and **P. Arun**  
**Solid State Communications**, **168** 31-35 (2013)
28. *"Parameters Influencing the Optical Properties of SnS Thin Films"*  
Priyal Jain and **P. Arun**  
**Journal of Semiconductors**, **34** 093004-1:093004-6 (2013)
27. *"Surface Plasmon Near Field Effects in Silver Nano-cylinders Arranged in Triangular Geometry"*  
Jesly Jacob, Ajith R, **P. Arun** and Vincent Mathew  
**Journal of Computational and Theoretical Nanoscience**, **10** 1-7 (2013)
26. *"Film Thickness Controlled Photoluminescence Emission in ZnO:Si Nanocomposite Films"*  
Shabnam, Chhaya Ravi Kant and **P. Arun**  
**Opt. Mater.**, **35** 314-316 (2012)
25. *"Metal Cluster's Effect on the Optical Properties of Cesium Bromide Thin Films"*  
Kuldeep Kumar, Chhaya Ravi Kant, **P. Arun** and Bala Krishna Julari  
**Appl. Phys. Lett.**, **100** 243106-243109 (2012)
24. *"White-Light Emission from Annealed ZnO:Si Nanocomposite Thin Films"*  
Shabnam, Chhaya Ravi Kant and **P. Arun**  
**J. Luminescence**, **132** 1744-1749 (2012)
23. *"Size and Defect Broadening of Photoluminescence Spectra in ZnO:Si Nanocomposite Films"*  
Shabnam, Chhaya Ravi Kant and **P. Arun**  
**Mater. Res. Bull.**, **47** 901-906 (2012)
22. *"Controlling Photoluminescence of ZnO:Si Nanocomposite Films by Heat-treatment"*  
Shabnam, Chhaya Ravi Kant and **P. Arun**  
**Mater. Res. Bull.**, **45** 1368-1374 (2010)

21. *"The Effect of Cesium Metal Clusters on the Optical Properties of Cesium Iodide Thin Films"*  
Kuldeep Kumar, **P. Arun**, Chhaya Ravi Kant, N.C. Mehra, Vincent Mathew  
**Appl. Phys. A**, **99** 305-310 (2010)
20. *"Effect of Residual Stress on the Optical Properties of CsCl Thin Films"*  
Kuldeep Kumar, **P. Arun**, Chhaya Ravi Kant, N.C. Mehra, L. Makinistian and E.A. Albanesi  
**J. Phys. Chem. Solids**, **71**, 163-169 (2010)
19. *"Characterization of ZnO:Si Nanocomposite Films Grown by Thermal Evaporation"*  
Shabnam Siddiqui, Chhaya Ravi Kant, **P. Arun** and N.C. Mehra  
**Phys. Lett. A**, **372**, 7068-7072 (2008)
18. *"Two Level Single Chain Pointer Forwarding Strategy: A new scheme for Location Management in Mobile Communication"*  
Chhaya Ravi Kant, **P. Arun** and Nupur Prakash  
**IET Communications**, (UK), **1**, 1224-1228 (2007)
17. *"Study of CdI<sub>2</sub> nanocrystals dispersed in amorphous Sb<sub>2</sub>S<sub>3</sub> matrix."*  
**P. Arun**  
**Phys. Lett. A**, **364**, 157-162 (2007)

### Between 1996-2005 (16)

#### Works after Doctorate

16. *"On the Structure of ZnI<sub>2</sub>."*  
**P. Arun**  
**J. Mat. Sci. Letters**, **40**, 4141-4143 (2005)
15. *"Occurrence of Hysteresis like behavior of resistance of Sb<sub>2</sub>Te<sub>3</sub> film in heating-cooling cycle."*  
**P. Arun**, Pankaj Tyagi and A. G. Vedeshwar  
**Physica B**, **362** 158-166 (2005)
14. *"Effect of energetic ion irradiation on CdI<sub>2</sub> films."*  
R. S. Rawat, **P. Arun**, A. G. Vedeshwar, P. Lee and S. Lee  
**J. Appl. Phys.**, **95**, 7725-30 (2004)
13. *"Influence of grain size on the Electrical Properties of Sb<sub>2</sub>Te<sub>3</sub> polycrystalline films."*  
**P. Arun** and A. G. Vedeshwar  
**Mater. Res. Bull.**, **38**, 1929-38 (2003)
12. *"Hysteresis like behavior of resistivity of Thin Films in heating-cooling cycle."*  
**P. Arun** and A. G. Vedeshwar  
**Phys. Lett. A**, **313**, 126-131 (2003)
11. *"Large Grain Size Dependence of Resistance of Polycrystalline films."*  
**P. Arun**, Pankaj Tyagi and A. G. Vedeshwar  
**Physica B**, **322**, 289-296 (2002)
10. *"Ageing Effect in Sb<sub>2</sub>Te<sub>3</sub> films."*  
**P. Arun**, Pankaj Tyagi, A. G. Vedeshwar and Vinod K. Paliwal  
**Physica B**, **307**, 105-110 (2001)
9. *"Effect of Argon ion irradiation on Sb<sub>2</sub>Te<sub>3</sub> films in dense plasma focus device."*  
R. S. Rawat, **P. Arun**, A. G. Vedeshwar, Y. L. Lam, P. Lee, M. H. Liu, S. Lee and Alfred Cheng Hon Huan  
**Mater. Res. Bull.**, **35**, 477-486 (2000)

#### Works related to PhD

8. *"Laser-induced crystallization in amorphous films of Sb<sub>2</sub>C<sub>3</sub> (C=S, Se, Te), potential optical storage media."*  
**P. Arun** and A. G. Vedeshwar  
**J. Appl. Phys. D. (UK)**, **32**, 183-190, (1999)
7. *"Large Potential of Sb<sub>x</sub>Te<sub>1-x</sub> films for Optical Storage."*  
**P. Arun** and A. G. Vedeshwar  
**Mater. Res. Bull.**, **34**, 203-216 (1999)
6. *"Potential of Sb<sub>2</sub>Se<sub>3</sub> films for photo-thermal phase change optical storage."*  
**P. Arun** and A. G. Vedeshwar  
**Thin Solid Films (UK)**, **335**, 270-278 (1998)

5. "Effect of heat-treatment on the optical properties of amorphous  $Sb_2S_3$  films: The possibility of optical storage."  
P. Arun and A. G. Vedeshwar  
**J. Non-Cryst. Solids**, **220**, 63-68 (1997)
4. "Laser induced crystallization in  $Sb_2S_3$  films."  
P. Arun, A. G. Vedeshwar and N. C. Mehra  
**Mater. Res. Bull. (USA)** **32**, 907-13 (1997)
3. "Temperature rise at laser irradiated spot in a low thermal conducting film."  
P. Arun and A. G. Vedeshwar  
**Physica B**, **229**, 409-15 (1997)
2. "On the structure of stibnite ( $Sb_2S_3$ )."  
P. Arun and A. G. Vedeshwar  
**J. Mater. Sci.**, **31**, 6507-10 (1996)
1. "Phase modification by instantaneous heat-treatment of  $Sb_2S_3$  films and their potential for photo-thermal optical recording."  
P. Arun and A. G. Vedeshwar  
**J. Appl. Phys.**, **79**, 4029-37 (1996)

## Publications on Physics Education (Total=20)

### International Journals

17. "Velocity of Sound in Evaluated Medium"  
Nimmi Singh, Harshit Mittal, Kunsh Bhagat, Inderpreet Singh and Arun Palakkandy  
accepted for publication in **The Physics Educator** (2024) **The Physics Educator**, **7** 2450018 (2025)
16. "Simple Experiment to Show Gravity Doesn't Affect the Velocity of Sound"  
Nimmi Singh, Harshit Mittal, Kunsh Bhagat, Inderpreet Singh and Arun Palakkandy  
**The Physics Educator**, **5** 2350019 (2023)
15. "A Comment on the dependence of LED's Efficiency on Junction Ideality Factor"  
Anubhav Sethi, Yashika Gupta and P. Arun  
**Physics Education (IOP)**, **53** 035024 (2018)
14. "Fourier Analysis of non-linear pendulum oscillations"  
Inderpreet Singh, P. Arun and F. Lima  
**Revista Brasileira de Ensino de Fisica** **40** e1305-1 (2018)
13. "Extracting the Boltzmann Constant from a Hot Diode"  
P. Arun  
**Physics Education (IOP)**, **52** 043008 (2017)
12. "The Skin effect: A Fresh Look"  
Vincent Mathew and P. Arun  
**Physics Education (IOP)**, **52** 043007 (2017)
11. "First Step To Ellipsometry"  
Yashika Gupta and P. Arun  
**International Journal of Physics**, **3** 8-11 (2015)
10. "Wither to Science in India."  
Kuldeep Kapil, Mamta, P. Arun and Jaswinder Singh  
**Current Science (India)**, **99** 1196-1207 (2010)
9. "The moving center of mass of a leaking bob."  
P. Arun  
**European Journal of Physics**, **31** 811-818 (2010)
8. "Optimization of the Anderson-Bridge Experiment."  
P. Arun, Kuldeep Kumar and Mamta  
**Resonance**, **15** 244-256 (2010)
7. "Studying Three Phase Supply in School"  
Amit Singhal and P. Arun  
**Physics Education (IOP)**, **44**, 415 (2009)
6. "Developing Parallel Port I/O Cards for Conducting Simple Physics Experiments"  
Arti Dwivedi, Sumit Ghambir and P. Arun  
**J. Phys. Stu.**, **2**, 90-98 (2008) (arXiv:0708.3487)
5. "A Circuit for Studying the Damping Motion of a Simple Pendulum."  
A. Arora, R. Rawat, S. Kaur and P. Arun  
**J. Phys. Stu.**, **2**, L6-L9 (2008)

4. *"Reaction Time of a Group of Physics Students."*  
Charu Saxena, Rini Kaur and **P. Arun**  
**Physics Education (IOP)**, **43**, 309-313 (2008)
3. *"Accurate measurement of the position and velocity of a falling object."*  
Madhur Garg, Kalimullah, **P. Arun** and F.M.S. Lima  
**American Journal of Physics**, **75** 254-258 (2007)
2. *"An accurate formula for the period of a simple pendulum oscillating beyond the small-angle regime."*  
F.M.S. Lima and **P. Arun**  
**American Journal of Physics**, **74** 892-895 (2006)
1. *"Simple pendulum revisited."*  
Neha Agarwal, Nitin Verma and **P. Arun**  
**European Journal of Physics**, **26** 517-523 (2005)

#### National Journals

1. *"Trisection of an angle."*  
**P. Arun**  
**Mathematical Education (India)**, **31**, 163-165 (1997)
2. *"How simple is simple pendulum."*  
**P. Arun** and Naveen Gaur  
**Physics Education, India**, 185, Oct-Dec (2002)
3. *"Using FET as a programmable resistance."*  
Ashima Katiyal, Parul Gupta and **P. Arun**  
**Physics Education (India)**, **24** 49-51 (2007)

#### Works only on the ArXiv

2. *"Deposition of Diamond-like Carbon films using Dense Plasma Focus"*  
Chhaya Ravikant, **P. Arun**, Savita Roy, M.P.Srivastava  
(arXiv:0811.0162)
1. *"Linearisation of simple pendulum."*  
**P. Arun** and Naveen Gaur  
(arXiv:physics/0112056)

## *Inter-disciplinary (Total=5)*

5. *"Modeling Per Capita Income and its Dependence on Literacy Rate"*  
Jasneet Kaur Wadhwa and **P.Arun**  
Arab Economic and Business Journal, **16** 79-92 (2024).
4. *"Modeling And Class-Room Study Of Demographic Projections"*  
**P.Arun** and Jasneet Kaur Wadhwa  
IOSR Journal of Research & Method in Education, **13** 18-23 (2023)
3. *"Expected Effect of 2021 Indian Decision to Increase Legal Age of Marriage for Girls: A Demographic Projection"*  
Jasneet Kaur Wadhwa and **P.Arun**  
J Soc Sci, **74** 1-7 (2023).
2. *"Effect of Life Expectancy on Technological Development"*  
Amandeep Singh, Kuldeep Kumar, Jasneet Kaur Wadhwa and **P.Arun**  
Technium Social Sciences Journal, **5** 225-237 (2020).
1. *"Customer Sentiments Driven Loyalty Helps Maggi's Revival"*  
Jasneet Kaur Wadhwa, Amandeep Singh and **P.Arun**  
Research Journal of Commerce and Behavioural Science, **7** 14-20 (2018).

## *Popular Articles*

1. *"Why did India give Football a Skip?"*  
**P.Arun**  
SportsKreeda, **3(4)** Dec 2014, pg 8.



## *Works in Conferences*

1. “*Laser induced phase transformation in Sb<sub>2</sub>S<sub>3</sub> films.*”  
N.C. Mehra, **P. Arun** and A. G. Vedeshwar  
XXII Annual Conference of Electron Microscopy Society of India, Hyderabad, Nov 9-11 (1998).
2. “*Argon ion induced changes on Antimony Telluride thin films using dense plasma focus device.*”  
Y. L. Lam, P. Lee, M. H. Liu, S. Lee, R. S. Rawat, **P. Arun**, A. G. Vedeshwar and Alfred Cheng Hon Huan  
Proc. Int. Conf. on Plasma Physics, Prague, Czech Republic, edited by P. Pavlo, 22C-2793 (1998).
3. “*Argon ion induced changes on Cadmium Iodide thin films using dense plasma focus device.*”  
R. S. Rawat, P. Lee, S. Lee, **P. Arun**, and A. G. Vedeshwar  
11<sup>th</sup> International Congress on Plasma Physics, 15-19 July (2002) Sydney, Australia.
4. “*Faster optical data storage in Sb<sub>2</sub>S<sub>3</sub> films.*”  
**P. Arun**, Pankaj Tyagi, A. G. Vedeshwar, V. K. Paliwal, N. C. Mehra  
XXVI Annual Conference as Electron Microscopy and Allied fields, April 16-18 (2003), Shimla (page 135 of proceeding).

## *Workshops/Symposium & Conferences Participated*

1. Workshop titled, “*New Directions in Physics Education Research: Implications for Teaching in College Physics*”,  
Delhi, May 3-8 (1999).
2. National Symposium on “*Emerging Areas of Forensic Science*”,  
Delhi, Dec 4-6 (2004).<sup>2</sup>
3. International Conference on Physics Education, “*World View on Physics Education in 2005: Focusing on Change*”,  
Delhi, Aug 21-26 (2005).
4. Completed Refresher course in Astronomy & Astrophysics,  
IUCAA (Pune), 14 May-15 June (2007).
5. 5-Day workshop for “*Development of Exemplar Problems in Physics for Class XII based on NCF-2005*”,  
organised by NCERT, Delhi (29 Aug-2 Sept 2008).
6. Member of Review Committee of “*Development of Exemplar Problems in Physics for Class XII*”,  
organised by NCERT, Delhi (15-19 Dec 2008).
7. 2-Day workshop on “*Introduction to Robotics*”,  
organised by Cluster Innovation Centre (University of Delhi) and Department of CSE, Indian Institute of Technology-Bombay (24-25 Sept 2013).

## *Talks and Lectures*

1. Presented talk, “*Interfacing*”.  
In Orientation course on “*Information Technology*” held by CPDHE, Delhi University (5-04-04 to 03-05-04).
2. Presented talk, “*Identifying existence of nanoparticles using Surface Plasmon Resonance*”.  
In Refresher course on “*New Directions in Physics and Electronics*” held by CPDHE, Delhi University (12-03-07 to 31-03-07).

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<sup>2</sup> Was also a member of the organizing committee.

## *Contributions as Resource Person*

1. Presented lecture, “*Principle of Communication and Modulation waves*”, May 18, 2005. As resource person during In-service Master Training Program for PGTs, held under the auspices of Science Education Center (SEC), DAV Public School, Dayanand Vihar in collaboration with DPPI DAVCMC, Delhi.
2. Training in Experimental Techniques. Resource person at IAPT-CSEC training camp for students representing India at the APhO (Asian Physics Olympiad). Camps were held in S.G.T.B. Khalsa College (13-20 April 2007), (9-19 April 2008)
3. Presented talk, “*Research Methodology: An experimentalist Approach*”. As resource person in Seminar on Research Methodology (Held for SC/ST and OBC Teachers and Research Scholars, Delhi University) (05-03-2010).

## *Work as Editor/Referee*

### **Was on Editorial Board of**

1. “European Journal of Physics Education”, available at <https://eu-journal.org/index.php/EJPE/about/editorialTeam>

### **Refereed papers for:**

1. “Solar Energy Materials and Solar Cells”, (Elsevier)
2. “American Journal of Physics”
3. “Electronics Letters”, (IET, UK).
4. “Educational Research Journal”.
5. “International Journal of Science and Technology Education Research”.
6. “Global Journal of Educational Research”.
7. “Journal of Luminescence”
8. “Journal of Nanoparticle Research”
9. “Mater. Res. Bull.”
10. Conference submissions for “American Rock Mechanics Association Conference”.
11. “Material Science in Semiconductor Processing”
12. “Nanoscale Research Letters”
13. “International Journal of Minerals, Metallurgy and Materials”
14. For Organizing Committee of International Conference on Material Technology and Environmental Engineering (MTEE 2015)
15. “Emerging Materials Research”
16. “Photonics and Nanostructures- Fundamentals and Applications”
17. “Journal of Physics Communication”
18. “Computational Materials Science”
19. “Physica Scripta”
20. “Surface and Coating”
21. “eTransportation”
22. “Combinatorial Chemistry & High Throughput Screening”
23. “Inorganic Chemistry”
24. “Journal of Scientific Research”
25. “Plasmonics”
26. “Optical and Quantum Electronics”

### **Refereed PhD Thesis for**

1. Mahatma Gandhi Univ. (Cochin) 2013.
2. Bharathiar Univ. (Coimbatore) 2014.
3. Indira Gandhi Delhi Technical University for Women (Delhi) 2023
4. Mahatma Gandhi University (Kottayam, Kerala) 2024

## *Fundings Recieved (Total Rs 51,28,000/-)*

10. [S.G.T.B. Khalsa College's Science & Research Development Cell Project](#)  
SGTBKC/S&RDC/P/2023-24/013  
For Project titled, "*Fabrication of SnS channel device and its Characterization.*"  
Principal Investigator: Dr. P.Arun  
(Rs 30,000/- for One years, Status: Completed)
9. [S.G.T.B. Khalsa College's Science Center Project](#)  
SGTBKC/SC/P/2018-19/03  
For Project titled, "*To Fabricate CsPbI<sub>3</sub> perovskite thin films by thermal evaporation.*"  
Principal Investigator: Dr. P.Arun  
(Rs 38,000/- for One years, Status: Completed)
8. [Delhi University's Innovation Project for Colleges](#)  
SGTB-304 (2015)  
For Project titled, "*To Fabricate and study Solar Cells with SnS nano-crystalline and ZnO nano-rod thin films.*"  
Principal Investigator: Dr. P.Arun  
Co-investigators: Dr. Inderpreet Singh and Mr. Kuldeep Kumar  
(Rs 5,00,000/- for One years, Status: Completed)
7. [Delhi University's Innovation Project for Colleges](#)  
SGTB-203 (2013)  
For Project titled, "*Role of Nano-Crystals in Energy Harvesting Using SnS thin films.*"  
Principal Investigator: Dr. P.Arun  
Co-investigators: Dr. Inderpreet Singh and Mr. Kuldeep Kumar  
(Rs 6,00,000/- for One years, Status: Completed)
6. [Delhi University's Innovation Project for Colleges](#)  
SGTB-101 (2011)  
For Project titled, "*Role of nano-crystal in energy harvesting and biomedical applications.*"  
Principal Investigator: Dr. P.Arun  
Co-investigators: Dr. Nidhi Sinha and Dr. P. S. Jassal  
(Rs 10,00,000/- for One years, Status: Completed)
5. [U.G.C. Major Research Project](#)  
F.No. (39-531)/2010(SR)  
For Project titled, "*Study of surface plasmons in metal -insulator -metal nanocrystalline thin films.*"  
(Principal/Single Investigator)  
(Rs 4,05,500/- for three years, Status: Completed)
4. [D.S.T. Research Project Under Nano-Mission](#)  
SR/NM/NS-28/2010  
For Project titled, "*Study of Surface Plasmon in Nano-composite Thin Films.*"  
Principal Investigator: Dr. P.Arun  
Co-investigators: Mr. Kuldeep Kapil and Dr. Chhaya Ravi Kant  
(Rs 15,00,000/- for three years, Status: Completed)
3. [U.G.C. Minor Research Project](#)  
No.F.6-1(222)/2008(MRP/NRCB)  
For Project titled, "*Characterization of Some Alkali Halide Thin Films.*"  
Principal Investigator: Mr. Kuldeep Kapil  
Co-investigators: Dr. P.Arun  
(Rs 90,000/- for two years, Status: Completed)
2. [U.G.C. Major Research Project](#)  
F.No. (33-27)/2007(SR)  
For Project titled, "*Study of the optical properties of Si:ZnO nanocomposites.*"  
Principal Investigator: Dr.Chhaya Ravi Kant  
Co-investigators: Dr.P.Arun and Prof.Subash Wadhwa  
(Rs 9,00,000/- for three years, Status: Completed)
1. [U.G.C. Minor Research Project](#)  
F.No. 6-1(25)/2007(MRP/Sc/NRCB)  
For Project titled, "*Physics of the non-linear pendulum:An investigation based on microprocessor interfacing.*"  
(Principal/Single Investigator)  
(Rs 65,000/- for two years, Status: Completed)

## *Book/Chapters Authored*

1. **“Electronics”, Narosa (Delhi) 2005 (1<sup>st</sup> Ed), 2011 (2<sup>nd</sup> Ed).**  
“*Electronics*” was written as a monolog between a teacher and a student in an attempt to make the language as simple as possible. The various diagrams and oscilloscope plots will help students to co-relate the theory they learn in the class room with observations they make in their lab experiments. Thumb rules of circuit design have been included where ever possible and various laws of physics behind various devices have been discussed. The chapters in the book can be divided into sections explaining modeling, test equipments and circuit elements which are building blocks of a power supply. Designed as a textbook for undergraduate students of electronics in physics and engineering, the book tries to demystify electronics as a subject and encourage beginners to take the next step in circuit design.
2. Contributed Chapter 15 of NCERT’s **“Physics: Exemplar Problems (Class XII)”**.
3. Four Chapters in Physics Lab Manual for **Indira Gandhi National Open University**.
4. **“Contemporary India as Captured by Bollywood: A Celluloid Narration”, Ukiyoto 2022.**