

Curriculum Vitae

Name	Dr. Pawan Kumar Diwan
Designation	Associate Professor
Qualification	Ph.D. (Physics)
Date of Joining	07-09-2004
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- 1. Education** : Ph.D. (Physics) 2004
Kurukshetra University, Kurukshetra (Haryana)
- M.Sc. (Physics) 1997
Guru Nanak Dev University, Amritsar (Punjab)
- B.Sc. (Non-medical) 1995
Guru Nanak Dev University, Amritsar (Punjab)
- 2. Work Experience** : Teaching : 19 years
Research : 25 years
- 3. Courses Taught** : *In B.Tech.:*
Semiconductor Physics
Introduction to Electromagnetic Theory
Optics and Waves
Applied Physics – I
Applied Physics – II
- In M.Tech.:*
Characterization Technique
Ion Beam based Characterization Technique
Flame Retardant Polymers
Statistical Methods for Data Analysis
- In Ph.D.:*
Research Methodology
Experimental Physics

4. Research and Consultancy :

4.1 Area of research interest:

- Energy loss and higher order moments of energetic heavy ions in elemental and polymeric materials.
- Thermal analysis of wood, polymeric materials, papers and soils.
- Solid State Nuclear Track Detectors.

4.2 Sponsored research projects (complete/undergone):

1. *Higher order moments in energy loss distribution of swift heavy ions in metallic foils* (Project Code: UFR-55315), Inter University Accelerator Centre (IUAC), New Delhi, 2014-2017, Rs.5,99,292/- (completed)
2. *Measurements of first four moments associated with energy loss spectrum of energetic heavy ions in different metals* (Project Code: UFR-63319), Inter University Accelerator Centre (IUAC), New Delhi, 2018-2022, Rs.6,03,970/- (completed).

4.3 Research publications

(a).Research Publications in International Journals

1. **P.K. Diwan**, L. Singh, G. Singh, S. Kumar, *Study of heavy ion range in different solid state nuclear track detector materials*, Nucl. Instr. and Meth. in Phy. Res. B160 (2000) 449-452.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
2. A. Sharma, S. Kumar, S.K. Sharma, **P.K. Diwan**, N. Nath, V.K. Mittal, S. Ghosh, D.K. Avasthi, *Stopping power of mylar for heavy ions up to copper*, Nucl. Instr. and Meth. in Phy. Res. B170 (2000) 323-328.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
3. **P.K. Diwan**, S. Kumar, G. Singh, L. Singh, *Energy loss of heavy ions in gases: A comparative study*, Radiation Measurements 33 (2001) 193-202.
(Publisher: Elsevier; ISSN: 1350-4487; Impact factor: 1.743)
4. **P.K. Diwan**, A. Sharma, S. Kumar, *Stopping power for heavy ions ($3 \leq Z \leq 35$) in solids at energies $\sim 0.5-2.5$ MeV/n*, Nucl. Instr. and Meth. in Phy. Res. B174(2001) 267-273.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
5. A. Sharma, **P.K. Diwan**, S. Kumar, S.K. Sharma, V.K. Mittal, S.V.S. Nageswara Rao, B. Sannakki, S. Ghosh, D.K. Avasthi, *dE/dx measurements for heavy ions with $Z = 6-29$ in polycarbonate*, Nucl. Instr. and Meth. in Phy. Res. B194 (2002) 7-14.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
6. **P.K. Diwan**, S. Kumar, V. Sharma, S.K. Sharma, V.K. Mittal, B. Sannakki, R.D. Mathad, K. Uday Kumar, S.A. Khan, D.K. Avasthi, *Slowing down of MeV heavy ions with $Z = 6-29$ in PEN ($C_7H_5O_2$) polycarbonate*, Nucl. Instr. and Meth. in Phy. Res. B201 (2003) 389-395.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
7. **P.K. Diwan**, V. Sharma, S.K. Sharma, S. Kumar, *Registration temperature effect on sensitivity of CR-39(DOP) and SR-90 polymer track detectors*, Radiation Measurements 36 (2003) 89-92.
(Publisher: Elsevier; ISSN: 1350-4487; Impact factor: 1.743)

8. **P.K. Diwan**, S. Kumar, *Electronic stopping power of elemental and complex targets for heavy ions from ${}^3\text{Li}$ to ${}_{29}\text{Cu}$ at low energies: An extended approach*, Nucl. Instr. and Meth. in Phy. Res. B215 (2004) 27-34.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
9. **P.K. Diwan**, V. Sharma, S. Kumar, D.K. Avasthi, *Pulse height defect in ion implanted silicon detector for heavy ions with $Z = 6-28$ in the energy range $\sim 0.25-2.5$ MeV/u*, Indian Journal of Pure & Applied Research 43 (2005) 733-737.
(Publisher: CSIR-NISCAIR; ISSN: 0975-1041; Impact factor: 0.846)
10. D.P. Gupta, R.S. Chauhan, S. Kumar, **P.K. Diwan**, S.A. Khan, A. Tripathi, F. Singh, S. Ghosh, D.K. Avasthi, V.K. Mittal, *Dependence of hydrogen released on the charge state of incident ions*, Radiation Effects and Defects in Solids 161(16) (2006) 331-338.
(Publisher: Taylor and Francis; ISSN: 1042-0150; Impact factor: 1.024)
11. **P.K. Diwan**, V. Sharma, S. Aggarwal, S. Kumar, S.K. Sharma, V.K. Mittal, B. Sannakki, R.D. Mathad, S.A. Khan, D.K. Avasthi, *Energy loss straggling of Li, C and O ions in mylar and polycarbonate absorber foils*, Nucl. Instr. and Meth. in Phy. Res. B244 (2006) 289-293.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
12. **P.K. Diwan**, V. Sharma, S. Kumar, V.K. Mittal, S.A. Khan, D.K. Avasthi, *Energy loss and straggling of MeV heavy ions in polypropylene absorber foils*, Nucl. Instr. and Meth. in Phy. Res. B258 (2007) 293-298.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
13. V. Sharma, Pratibha, T. Sharma, **P.K. Diwan**, S. Kumar, S.A. Khan, D.K. Avasthi, *Energy loss straggling of Si and Cl ions in polymeric foils*, Nucl. Instr. and Meth. in Phy. Res. B266 (2008) 1933-1937.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
14. Pratibha, V. Sharma, **P.K. Diwan**, S. Kumar, S.A. Khan, D.K. Avasthi, *Energy loss and straggling in LR-115 and Kapton polymeric foils for energetic ions*, Nucl. Instr. and Meth. in Phy. Res. B266 (2008) 2556-2563.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
15. V. Sharma, **P.K. Diwan**, Pratibha, S. Kumar, S.A. Khan, D.K. Avasthi, *Stopping power of polymeric foils for swift heavy ions*, Nucl. Instr. and Meth. in Phy. Res. B266 (2008) 3988-3992.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
16. **P.K. Diwan**, V. Sharma, Pratibha, S. Kumar, S.A. Khan, D.K. Avasthi, *Stopping force of 0.5-3.5 MeV/u Cl ions in polymers*, Nucl. Instr. and Meth. in Phy. Res. B266 (2008) 4738-4741.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
17. V. Sharma, **P.K. Diwan**, Pratibha, T. Sharma, S. Kumar, D.K. Avasthi, *Energy loss of light ions in polypropylene absorber foils*, Indian Journal of Physics 83(7) (2009) 937-941.
(Publisher: Springer; ISSN: 0973-1458; Impact factor: 1.778)
18. Neetu, Pratibha, V. Sharma, **P.K. Diwan**, S. Kumar, *Electronic stopping power of polymers for heavy ions in the ion energy domain of LSS theory*, Radiation Measurements 44 (2009) 363-368.
(Publisher: Elsevier; ISSN: 1350-4487; Impact factor: 1.743)

19. Pratibha K. Gulati, N. Munjal, **P.K. Diwan**, V. Sharma, S. Kumar, S.A. Khan, D.K. Avasthi, *Statistical fluctuations in energy loss for swift heavy ions in thick polymeric foils*, Physical Review A80 (2009) 032903 (1-5).
(Publisher: American Physical Society; ISSN: 10502947; Impact factor: 2.971)
20. Neetu, K. Sharma, Pratibha K. Gulati, **P.K. Diwan**, S. Kumar, *Energy loss straggling of 5.486MeV α -particles in PP, PET and KAPTON polymeric foils*, Applied Radiation and Isotopes 68 (2010) 2252-2254.
(Publisher: Elsevier; ISSN: 0969-8043; Impact factor: 1.787)
21. K. Sharma, **P.K. Diwan**, S. Kumar, P. Yadav, *Study of isotropic etching behavior of CR-39(DOP) polymer through ion tracks*, Nucl. Instr. and Meth. in Phys. Res. B268 (2010) 2408-2410.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
22. **P.K. Diwan**, Neetu, Pratibha K. Gulati, S. Kumar, D.K. Avasthi, *Statistical variations in energy loss for Li, C and O ions in thick Kapton polymeric foils*, Nucl. Instr. and Meth. in Phys. Res. B268 (2010) 3523-3525.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
23. **P.K. Diwan**, Neetu, Pratibha K. Gulati, S. Kumar, D.K. Avasthi, *Energy loss straggling in thick mylar polymeric foils for swift heavy ions in fractional energy loss limits $\Delta E/E \sim 5-80\%$* , Nucl. Instr. and Meth. in Phys. Res. B269 (2011) 1786-1791.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
24. **P.K. Diwan**, Neetu, S. Kumar, *Energy loss straggling in different polymeric foils for α -particles*, Radiation Physics and Chemistry 81 (2012) 1543-1546.
(Publisher: Elsevier; ISSN: 0969-806X; Impact factor: 2.776)
25. Neetu, K. Sharma, **P.K. Diwan**, S. Kumar, D.K. Avasthi, *Higher order moments associated with energy loss distribution of swift heavy ions in thick polyethylene naphthalate polymeric foils*, Radiation Effects and Defects in Solids 168 (7-8) (2013) 601-606.
(Publisher: Taylor and Francis; ISSN: 1042-0150; Impact factor: 1.024)
26. D.P. Gupta, R.S. Chauhan, S. Kumar, **P.K. Diwan**, S.A. Khan, A. Tripathi, S. Ghosh, V.K. Mittal, *Nanoscale track diameter and hydrogen yield: Dependence upon charge state of incident ion on polystyrene*, World Journal of Condensed Matter Physics 3 (2013) 95-101.
(Publisher: Scientific Research; ISSN: 2160-6927; Impact factor: 2.5 (Google Based))
27. Sunil Kumar, **P.K. Diwan**, S. Kumar, *Energy loss straggling for α -particles in varying thicknesses of Al, Ti and Ni metallic foils*, Radiation Physics and Chemistry 106 (2015) 21-25.
(Publisher: Elsevier; ISSN: 0969-806X; Impact factor: 2.776)
28. **P.K. Diwan**, H.S. Virk, *Heavy ion range measurement in SSNTD materials: A Review*, Solid State Phenomena 238 (2015) 174-195.
(Publisher: Trans Tech Publications, ISSN: 1012-0394)
29. **P.K. Diwan**, Sunil Kumar, *dE/dx and range of α -radiations in Al, Ti and Ni metallic foils*, Nucl. Instr. and Meth. in Phys. Res. B359 (2015) 78-84.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
30. Sunil Kumar, **P.K. Diwan**, *Energy loss and straggling of α -particles in Ag and Sn metallic foils*, Journal of Radiation Research and Applied Sciences 8 (2015) 538-543.
(Publisher: Elsevier; ISSN: 1687-8507; Impact factor: 1.770)

31. **P.K. Diwan**, Sunil Kumar, Shyam Kumar, V. Sharma, S.A. Khan, D.K. Avasthi, *Energy loss straggling in Aluminium foils for Li and C ions in fractional energy loss limits ($\Delta E/E$)~10-60%*, Radiation Physics and Chemistry 119 (2016) 180-185.
(Publisher: Elsevier; ISSN: 0969-806X; Impact factor: 2.776)
32. P. Sharma, **P.K. Diwan**, *Investigation of thermal decomposition parameters of flame retardant impregnated eucalyptus wood*, International Wood Products Journal 7(3) (2016) 144-148.
(Publisher: Maney Publishing, U.K.; ISSN: 20426445; Impact factor: 0.287)
33. Bindu Rani, Neetu, K. Sharma, **P.K. Diwan**, Shyam Kumar, *Precise measurements of energy loss straggling for swift heavy ions in polymers*, Nucl. Instr. and Meth. in Phys. Res. B387 (2016) 34-40.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
34. Raj Kumar, Vishal Sharma, Neha Sharma, **P.K. Diwan**, Vinay Kumar, Vijay Kumar, *Analysis of writing/printing paper via Thermo-gravimetric Analysis: Application in forensic science*, Australian Journal of Forensic Sciences 51(1) (2019) 22-39.
(Publisher: Taylor and Francis; ISSN: 0045-0618; Impact factor: 1.522)
35. Piyush Sharma, **P.K. Diwan**, *Study of thermal decomposition process and the reaction mechanism of the eucalyptus wood*, Wood Science and Technology 51(5) (2017) 1081-1094.
(Publisher: Springer; ISSN: 0043-7719; Impact factor: 2.898)
36. Piyush Sharma, P.K. Jha, **P.K. Diwan**, O.P. Pandey, *Impact of CuS on the crystallization kinetics of Na₂S-P₂S₅ glasses*, J. Non-Crystalline Solids 477 (2017) 31-41.
(Publisher: Elsevier; ISSN: 0022-3093; Impact factor: 4.458)
37. B. Rani, K. Sharma, **P.K. Diwan**, S. Kumar, *Energy loss of swift heavy ions in solids*, CPHU-Research Journal 2(2) (2017) 68-70.
(ISSN: 2455-6076)
38. Sunil Kumar, **P.K. Diwan**, *Energy loss and range of α -particles in different metallic foils*, Radiation Effects and Defects in Solids 173(11-12) (2018) 970-977.
(Publisher: Taylor and Francis; ISSN: 1042-0150; Impact factor: 1.024)
39. Sunil Kumar, V. Sharma, **P.K. Diwan**, *Energy loss straggling of α -particles in Tb, Ta and Au metallic foils*, Vacuum 158 (2018) 42-47.
(Publisher: Elsevier; ISSN: 0042-207X; Impact factor: 4.110)
40. K. Gulati, S. Lal, **P.K. Diwan**, S. Arora, *Investigation of thermal, mechanical, morphological and optical properties of polyvinyl alcohol films reinforced with Buddha coconut (sterculiaalata) leaf fiber*, International Journal of Applied Engineering Research 14 (2019) 170-179.
(Publisher: Research India Publications, ISSN: 0973-4562; Impact factor: 1.30)
41. P. Sharma, **P.K. Diwan**, O.P. Pandey, *Impact of environment on the kinetics involved in the solid-state synthesis of bismuth ferrite*, Material Chemistry and Physics 233 (2019) 171-179.
(Publisher: Elsevier; ISSN: 0254-0584; Impact factor: 4.778)
42. P. Sharma, O.P. Pandey, **P.K. Diwan**, *Non-isothermal kinetics of pseudo-components of waste biomass*, Fuel 253 (2019) 1149-1161.
(Publisher: Elsevier; ISSN: 0016-2361; Impact factor: 8.035)

43. R. Chauhan, R. Kumar, **P.K. Diwan**, V. Sharma, *Thermogravimetric analysis and chemometric based methods for soil examination: Application to soil forensics*, *Forensic Chemistry* 17 (2020) 10091.
(Publisher: Elsevier; ISSN: 2468-1709; Impact factor: 3.096)
44. A. Nair, P. Sharma, V. Sharma, **P.K. Diwan**, *Effect of UV-irradiation on the optical properties of transparent PET polymeric foils*, *Materials Today: Proceedings* 21 (2020) 2105-2111.
(Publisher: Elsevier; ISSN: 2214-7853; Cite-Score: 2.3)
45. **P.K. Diwan**, Sonia Rani, Sunil Kumar, *Development of energy loss formulation for heavy ions with $Z_1= 3-36$ in the energy region $\sim 0.2-3.0$ MeV/n*, *Radiation Physics and Chemistry* 172 (2020) 108835 (1-15).
(Publisher: Elsevier; ISSN: 0969-806X; Impact factor: 2.776)
46. S. Kumar, S. Rani, P. Sharma, S.A. Khan, **P.K. Diwan**, *Energy loss and associated parameters in energy spectra of Li, C and O ions in Nickel foils*, *Vacuum* 181 (2020) 109606.
(Publisher: Elsevier; ISSN: 0042-207X; Impact factor: 4.110)
47. S. Kumar, S. Rani, P. Sharma, U. Berar, S.A. Khan, **P.K. Diwan**, *Energy loss straggling of energetic ions in varying thicknesses of Titanium foils*, *Vacuum* 188 (2021) 110170.
(Publisher: Elsevier; ISSN: 0042-207X; Impact factor: 4.110)
48. S. Rani, S. Kumar, P. Sharma, S.A. Khan, **P.K. Diwan**, *Energy loss straggling and subsequent higher order parameters in silver metallic foils*, *Nucl. Instr. and Meth. in Phys. Res. B* 494-495 (2021) 68-73.
(Publisher: Elsevier; ISSN: 0168-583X; Impact factor: 1.279)
49. R. Priya, S. Kainth, D. Kumar, P. Sharma, **P.K. Diwan**, O.P. Pandey, *Investigating transformation kinetics of yttrium hydroxide to yttrium oxide*, *Material Chemistry and Physics* 287 (2022) 126243. DOI: [10.1016/j.matchemphys.2022.126243](https://doi.org/10.1016/j.matchemphys.2022.126243)
(Publisher: Elsevier; ISSN: 0254-0584; Impact factor: 4.778)
50. S. Rani, S. Kumar, **P.K. Diwan**, *Stopping force of 0.2-3.0 MeV/n heavy ions in elemental materials*, *Materials Today: Proceedings* 62(10) (2022) 6083-6086.
DOI: [10.1016/j.matpr.2022.04.1013](https://doi.org/10.1016/j.matpr.2022.04.1013)
(Publisher: Elsevier; ISSN: 2214-7853; Cite-Score: 2.3)
51. N. Khattar, P. Sharma, U. Berar, **P.K. Diwan**, *Study of thermal decomposition parameters of UHMWPE sheet*, *Materials Today: Proceedings* 62(10) (2022) 6091-6094.
DOI: [10.1016/j.matpr.2022.04.1016](https://doi.org/10.1016/j.matpr.2022.04.1016)
(Publisher: Elsevier; ISSN: 2214-7853; Cite-Score: 2.3)
52. S. Kumar, S. Rani, P. Sharma, S.A. Khan, **P.K. Diwan**, *Energy loss measurements of energetic ions in Ag foils in the energy region 1 MeV/n to 7 MeV/n*, *Indian Journal of Physics* 97(2) (2023) 563-568.
DOI: [10.1007/s12648-022-02418-19](https://doi.org/10.1007/s12648-022-02418-19)
(Publisher: Springer India; ISSN: 0973-1458; Impact factor: 1.778)
53. S. Kumar, S. Rani, P. Sharma, **P.K. Diwan**, *Energy loss, dispersion and asymmetry in energy loss distribution curves of energetic ions in Terbium foils*, *Indian Journal of Physics* (2023).

DOI: [10.1007/s12648-022-02418-19](https://doi.org/10.1007/s12648-022-02418-19)

(Publisher: Springer India; ISSN: 0973-1458; Impact factor: 1.778)

54. N. Kaur, A. Arya, R. Kumar, J. Kaur, N. Khattar, **P.K. Diwan**, A. Sharma, *Au-Ag NPs embedded sago starch-sodium alginate composites: an investigation of structural, thermal and dielectric properties for applications in flexible electronic devices*, *Materials Science & Engineering: B* 293 (2023) 116495(1-14).
(Publisher: Elsevier; ISSN: 0921-5107; Impact factor: 3.407)
55. N. Khatar, Jagriti, V. Ahlawat, P. Sharma, U. Berar, P.K. Diwan, *Optimization of compression parameters of UHMWPE through thermal stability*, *Materials Chemistry and Physics* 307 (2023) 128220(1-9).
(Publisher: Elsevier; ISSN: 0254-0584; Impact factor: 4.6)
56. N. Khatar, Jagriti, P. Sharma, V. Ahlawat, U. Berar, P.K. Diwan, *Impact of quercetin concentration on the thermal stability of ultra high molecular weight polyethylene: A thermogravimetric study*. *Reaction Kinetics, Mechanisms and Catalysis* (2023)
(Publisher: Springer; ISSN: 18785204, 18785190; Impact factor: 1.8)

(b). Scientific Articles in National Journals

1. **P.K. Diwan**, *Mass mystery and LHC: A step ahead to uncover the truth*, *Bulletin of the Indian Association of Physics Teachers* 5(4) (2013) 77-80.
(Publisher: Indian Association of Physics Teachers; ISSN: 2277-8950)
2. **P.K. Diwan**, *Higgs Boson: Past, Present and Future*, *Everyman's Science* L(3) (2015) 160-162.
(Publisher: The Indian Science Congress Association; ISSN: 0631-495X)
3. **P.K. Diwan**, *Role of Physics in ICT Revolution*, *Bulletin of the Indian Association of Physics Teachers* 11(3) (2019) 72-77.
(Publisher: Indian Association of Physics Teachers; ISSN: 2277-8950)

(c). Publications in Proceedings of Symposia/Conferences/Seminars

1. **P.K. Diwan**, L. Singh, G. Singh, S. Kumar, *Stopping power for heavy ions in gases: A comparative study*, *Proc. of DAE Symposium 42B* (1999) 420-421.
2. S. Kumar, A. Sharma, **P.K. Diwan**, *Stopping power for heavy ions in solids at low energies*, *Proc. of DAE Symposium 42B* (1999) 418-419.
3. L. Singh, **P.K. Diwan**, G. Singh, J. Singh, S. Singh, *Annealing studies of fission tracks in sodalime glass*, *Proc. of Eleventh Symposium on Solid State Nuclear Tracks Detectors* (2000) 147-152.
4. L. Singh, **P.K. Diwan**, G. Singh, J. Singh, S. Kumar, S. Singh, *Etching kinetics of heavy ion tracks in lexan plastics*, *Proc. of Eleventh Symposium on Solid State Nuclear Tracks Detectors* (2000) 179-181.
5. **P.K. Diwan**, A. Sharma, S. Kumar, *Stopping power for heavy ions ($3 \leq Z \leq 35$) in elemental targets ($6 \leq Z \leq 79$) at energies $\sim 0.5 - 2.5$ MeV/n*, *Proc. of DAE Symposium 43B* (2000) 552-553.
6. S. Kumar, **P.K. Diwan**, P. Balaya, *Registration temperature effect on sensitivity of polymer track detectors*, *Proc. of DAE Symposium 43B* (2000) 492-493.

7. Piyush Sharma, **P.K. Diwan**, *Investigating the impact of flame retardants on wood with thermal analysis techniques*. Proceeding of National Conference on Nanomaterials and Instrumentation NCNI (2014) 49-50.
8. Sunil Kumar, Piyush Sharma, **P.K. Diwan**, *A comparative analysis of experimental and theoretical stopping force of polymeric materials*, Proceeding of National Conference on Nanomaterials and Instrumentation NCNI (2014) 158-159.
9. **P.K. Diwan**, *Energy loss and straggling of swift heavy ions with $Z = 3-22$ in Polypropylene foils*, Proceeding of 3rd National Conference on Nano-science and Instrumentation Technology (NCNIT-2015) 26-27.
10. Sunil Kumar, **P.K. Diwan**, *Range of heavy ions in CR-39 polymer: A comparative study*, Proceeding of 3rd National Conference on Nano-science and Instrumentation Technology (NCNIT-2015) 122-123.
11. Piyush Sharma, **P.K. Diwan**, *Thermal kinetic analysis of biomass through thermogravimetry*, Proceeding of 3rd National Conference on Nano-science and Instrumentation Technology (NCNIT-2015) 125-126.
12. Bindu Rani, Kalpana Sharma, Neetu, **P.K. Diwan**, Shyam Kumar, *Energy loss and associated higher order moments for swift heavy ions in different absorbers: A systematic study*, Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 60 (2015) 1050-1051.

(d). Publications in Technical Reports

1. **P.K. Diwan**, V. Sharma, S. Kumar, S.K. Sharma, V.K. Mittal, B. Sannakki, R.D. Mathad, S.A. Khan, D.K. Avasthi, *Energy loss and straggling measurements of light ions in different polymeric absorber foils*, Nuclear Science Centre Annual report (2004) 162.
2. D.P. Gupta, R.S. Chauhan, S. Kumar, **P.K. Diwan**, V.K. Mittal, S.A. Khan, A. Tripathi, F. Singh, S. Ghosh, D.K. Avasthi, *Correlation between ion track diameter and charge state of incident ion*, Nuclear Science Centre Annual report (2004) 167.
3. Pratibha, Neetu, V. Sharma, **P.K. Diwan**, S. Kumar, S.A. Khan, D.K. Avasthi, *Statistical fluctuations in energy loss for swift heavy ions in thick polymeric absorbers*, Inter-University Accelerator Centre Annual Report (2008-2009) 225-226.
4. Sunil Kumar, **P.K. Diwan**, S.A. Khan, D.K. Avasthi, *Energy loss and straggling of swift heavy ions in varying thicknesses of Ni Metal*, Inter-University Accelerator Centre Annual Report (2017-18) 124.

(e). Papers Presented in Conferences/Symposia/Workshops/Seminars

1. *Cluster ion interaction in polymers*, National Seminar cum Workshop on Surface Modifications and Characterizations by Energetic Ion Beams, November 23-24, 2001 organized by Department of Physics, University of Rajasthan, Jaipur (Rajasthan).
2. *Stopping power for heavy ions in polymers using NSC Pelletron*, Regional Workshop on Facilities and Research Program at NSC, October 4, 2002 organized by Department of Physics, Punjabi University, Patiala (Punjab).

3. *Registration temperature effect on sensitivity of CR-39 (DOP) and SR-90 polymer track detectors*, 21st International Conference on Nuclear Tracks in Solids (ICNTS-21), October 21-25, 2002 held at India Habitat Centre, New Delhi.
4. *Energy loss straggling of Li and C ions in different polymeric materials*, National Conference cum Workshop on Solid State Nuclear Track Detectors and Applications, November 1-3, 2004 organized by PG Department of Physics and Electronics, DAV College, Amritsar (Punjab).
5. *Energy loss straggling of MeV heavy ions in polymers*, National Conference on Recent Advances in Material Science (RAMS – 2006), September 27-29, 2006 organized by Department of Physics, Kurukshetra University, Kurukshetra (Haryana).
6. *Energy loss straggling of light ions in metallic foils*, National Conference on Applied Physics and Material Science, February 5-6, 2015 organized by Department of Physics, Maharshi Dayanand University, Rohtak (Haryana).
7. *Energy loss and straggling of swift heavy ions with $Z = 3-22$ in Polypropylene foils*, 3rd National Conference on Nano-science and Instrumentation Technology (NCNIT-2015), June 6-7, 2015 organized by Department of Physics, NIT, Kurukshetra (Haryana).
8. *Theory of Relativity: Exploring the origin in Ancient Indian Scriptures*, International Seminar on Bhagavad Gita: Holistic Life Management and World Harmony Tourism Motivation, December 6-9, 2016, organized by Kurukshetra University, Kurukshetra (Haryana).
9. *Exploring the concepts of nuclear physics in Shrimad Bhagavad Gita*, International Seminar on Exploring Self in Digital Age: The Perspective of Shrimad Bhagavad Gita Philosophy, November 25-27, 2017, organized by Kurukshetra University, Kurukshetra (Haryana).
10. *The scientific vision of Srimad Bhagavad Gita*, International Seminar on Universal Welfare and the Eternal Philosophy of Bhagavad Gita, December 3-5, 2019, organized by Kurukshetra University, Kurukshetra (Haryana).

4.4 Published book and book chapters

(a). Published Book

1. **P.K. Diwan**, *Applied Physics for Engineers* (2014) (Publisher: Wiley India Pvt. Ltd, New Delhi. ISBN: 978-81-265-5079-1).

(b). Published Book Chapters

1. **P.K. Diwan**, *Impact of etchant variables on the track parameters in CR-39 polymer nuclear track detector: A review*(2019) 243-267, in Springer Series on Polymer and Composite Materials entitled “Radiation Effects in Polymeric Materials edited by Kumar et al.” (Publisher: Springer Nature, Switzerland. ISBN: 978-3-030-05769-5).
2. V. Sharma, **P.K. Diwan**, S. Kumar, *Energy loss of swift heavy ions: Fundamentals and theoretical formulation* (2019) 393-412, in Springer Series on Polymer and Composite Materials entitled “Radiation Effects in Polymeric Materials edited by Kumar et al.” (Publisher: Springer Nature, Switzerland. ISBN: 978-3-030-05769-5).

3. S. Kainth, P. Sharma, **P.K. Diwan**, *Strategies to synthesize biodegradable conducting polymers* (2022) 65-80, in “Conducting Polymers: Chemistries, Properties and Biomedical Applications” edited by R.K. Gupta (Publisher: CRC Press, Boca Raton. eBook ISBN 9781003205418).
4. P. Sharma, S. Kainth, **P.K. Diwan**, *2D materials for bioelectronics* (2022) 35-52, in “Bioelectronics: Materials, Technologies, and Emerging Applications” edited by A. Kumar and R.K. Gupta (Publisher: CRC Press, Boca Raton. eBook ISBN 9781003263265).

5. Reviewer in International Journals

- Vacuum (Publisher: Elsevier)
- Thermochimica Acta (Publisher: Elsevier)
- Sustainable Energy and Fuels (Publisher: Royal Society of Chemistry)
- Nuclear Instruments and Methods in Physics Research Physics B (Publisher: Elsevier)
- Indian Journal of Physics (Publisher: Springer)

6. Doctoral Thesis Guided

1. Sunil Kumar, *Higher order moments in energy loss distribution of energetic ions in metallic foils* (2017).
2. Sonia Rani, *Energy loss and associated parameters in energy spectra of swift heavy ions in solid foils* (2023).
3. Nidhi Khattar, *Impact of compression parameters and natural antioxidant on the thermal stability of UHMWPE* (Pursuing).
4. Jagriti, *Enhancement of thermal stability of polymeric materials* (Pursuing).

7. M.Tech. dissertation guided :

1. Piyush Sharma, *Impact of ammonium dihydrogen phosphate on the flame retardancy of the Eucalyptus wood* (2014).
2. Aneesh Nair, *Effect of uv-irradiation on PET polymeric foil* (2014).
3. Ashok Rana, *Prediction of glass forming composition and synthesis of metallic glass by mechanical alloying and milling in Fe-Al-B* (2015).
4. Gaurav Kajal, *Thermal decomposition study of different wood species* (2015).

- 8. Product Development** :
- Developed horizontal Ball Mill rotated with single phase DC motor
 - Developed Twin Mounts to position SSBD detectors
 - Developed target ladder to mount number six target stacks

9. Contribution in laboratory development:

- Set physics labs for optics, mechanical, solid state and electromagnetic theory based experiments and developed their manuals.
- Designed and established research lab for Thermal Analysis.

10. Event organized/participated/attended

(a). Events Organized (as a member)

1. *Excelsior' 08*, April 03-05, 2008, organized by UIET.
2. *National Conference on Converging Technologies Beyond 2020*, April 6-7, 2011, organized by UIET.
3. *2nd National Conference on Converging Technologies Beyond 2020 (2CTB-2020)*, November 28-29, 2014, organized by UIET.
4. *Excelsior'15*, April 22-24, 2015, organized by UIET.
5. *Milaap'15: 2nd Alumni Meet*, May 2, 2015, organized by UIET.
6. *Coordinated Science Quiz*, November 4-5, 2015, organized by UIET.
7. Student Induction Program (2019) organized by UIET.

(b). Workshops Participated/Attended

1. *Workshop on Solar Passive Building Technology*, March 20 - 21, 1996 organized by Department of Physics, Guru Nanak Dev University, Amritsar, Punjab.
2. *National Workshop/Orientation Course on Solar Passive Building Technology & Energy Conservation*, March 5, 1997 organized by Department of Physics, Guru Nanak Dev University, Amritsar, Punjab.
3. *Workshop on Swift Heavy Ions in Polymers & Insulating Materials (SHIPIM)*, February 23, 1998 organized by Department of Physics, Guru Nanak Dev University, Amritsar, Punjab.
4. *XIth National Symposium on Solid State Nuclear Track Detectors (SSNTDs)*, October 12-14, 1998 organized by Department of Physics, Guru Nanak Dev University, Amritsar, Punjab.
5. *Advanced Lecture Series (Ph.D. Programme)*, January 4-February 16, 1999 at Nuclear Science Centre, New Delhi, on Energy loss of MeV ions in Solids, Programming techniques, Fundamental lattice defects in Solids and Numerical Methods.
6. *DAE Symposium on Nuclear Physics*, December 27-31, 1999 organized by Department of Physics, Punjab University, Chandigarh.
7. *International Symposium on Nuclear Physics*, December 18-22, 2000 held at Bhabha Atomic Research Centre, Mumbai.
8. *Seventh Symposium on Radiation Physics*, March 26-27, 2001 organized by Department of Physics, Punjabi University, Patiala, Punjab.
9. *Orientation Programme for Researchers using Heavy Ion Accelerator*, October 8-13, 2001 organized by Nuclear Science Centre, New Delhi.

10. *National Seminar cum Workshop on Surface Modifications and Characterizations by Energetic Ion Beams*, November 23-24, 2001 organized by Department of Physics, University of Rajasthan, Jaipur, Rajasthan.
11. *Regional Workshop on Facilities and Research Program at NSC*, October 4, 2002 held at Department of Physics, Punjabi University, Patiala, Punjab.
12. *21st International Conference on Nuclear Tracks in Solids (ICNTS-21)*, October 21-25, 2002 held at India Habitat Centre, New Delhi.
13. *National Conference on Material and their Applications (NCMA)*, March 11-13, 2004 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
14. *National Conference cum Workshop on Solid State Nuclear Track Detectors and Applications*, November 1-3, 2004 organized by PG Department of Physics and Electronics, DAV College, Amritsar, Punjab.
15. *National Conference on Recent Advances in Material Science (RAMS – 2006)*, September 27-29, 2006 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
16. *Awareness workshop on the Facilities of UGC-DAE Consortium for Scientific Research*, December 4-5, 2006 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
17. *AICTE sponsored induction training programme for faculty of Engineering Colleges*, March 1-12, 2007 organized by University Institute of Engineering and Technology (UIET), Kurukshetra University, Kurukshetra, Haryana.
18. *65th BRNS – IANCAS National Workshop on Radiochemistry and Applications of Radioisotopes*, November 29-December 8, 2007 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
19. *Workshop on patent awareness*, April 5, 2008, organized by University Institute of Engineering and Technology (UIET), Kurukshetra University, Kurukshetra, Haryana.
20. *National conference on uniformity in curriculum development of Engineering Sciences*, March 6, 2010, organized by Technology Education & Research Integrated Institutions (TERII), Kurukshetra, Haryana.
21. *National conference on Converging Technologies beyond 2020*, April 6-7, 2011 organized by University Institute of Engineering and Technology (UIET), Kurukshetra University, Kurukshetra, Haryana.
22. *National Seminar on New Age Business: Changes, Challenges and Coping Strategies*, March 14, 2012 organized by Department of Commerce, Government College for Girls, Panchkula, Haryana.
23. *National Workshop on Data Analysis using SPSS*, September 21-22, 2012 organized by Department of Statistics and Operational Research, Kurukshetra University, Kurukshetra, Haryana.
24. *Short Term Course on Nanomaterials and their Characterization Tools*, June 1-3, 2013 organized by Department of Physics, NIT, Kurukshetra, Haryana.
25. *National conference on Nanomaterials and Instrumentation*, March 9-10, 2014 organized by Department of Physics, National Institute of Technology, Kurukshetra, Haryana.

26. *National Workshop on Ion Beam Induced Growth and Engineering of Materials*, March 11-12, 2014 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
27. *National Workshop on Ancient Indian Scientific Heritage*, November 11, 2014 organized by Department of A.I.H., Cul. & Arch., Kurukshetra University, Kurukshetra, Haryana.
28. *National Conference on Applied Physics and Material Science*, February 5-6, 2015 organized by Department of Physics, Maharshi Dayanand University, Rohtak, Haryana.
29. *National Seminar on Recent Trends in Physics and Chemistry (NSRTPC-15)*, March 25, 2015 organized by Faculty of Science, S.A. Jain (PG) College, Ambala, Haryana.
30. *3rd National Conference on Nano-science and Instrumentation Technology (NCNIT-2015)*, June 6-7, 2015 organized by Department of Physics, National Institute of Technology (NIT), Kurukshetra, Haryana.
31. *Two days 2nd National Workshop on Ion Beam Induced Growth and Engineering of Materials*, March 4-5, 2016 organized by Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
32. *National Conference on Current Developments in Physics (CDIP-2016)*, March 28-29, 2016 organized by S.D. (PG) College, Panipat, Haryana.
33. *In-House Workshop on Flexible Electronics*, April 28-30, 2016 organized by UIET, Kurukshetra University, Kurukshetra, Haryana.
34. *International Seminar on Bhagavad Gita: Holistic Life Management and World Harmony Tourism Motivation*, December 6-9, 2016, organized by Kurukshetra University, Kurukshetra, Haryana.
35. *Two days National Workshop on Data Analysis using SPSS*, March 20-21, 2017, organized by Department of Statistics & O.R., Kurukshetra University, Kurukshetra, Haryana.
36. *International Seminar on Exploring Self in Digital Age: The Perspective of Shrimad Bhagavad Gita Philosophy*, November 25-27, 2017, organized by Kurukshetra University, Kurukshetra, Haryana.
37. *IP Awareness Programme on National IPR Policy 2016*, January 11, 2018, organized by Kurukshetra University, Kurukshetra, Haryana.
38. *Three days Induction Programme sponsored by AICTE*, July 14-16, 2018, organized by UIET, Kurukshetra University, Kurukshetra, Haryana.
39. *International Seminar on Making New India: Insights from Bhagavad-Gita*, December 13-15, 2018, organized by Kurukshetra University, Kurukshetra, Haryana.
40. *International Seminar on Universal Welfare and the Eternal Philosophy of Bhagavad Gita*, December 3-5, 2019, organized by Kurukshetra University, Kurukshetra, Haryana.
41. Two days online training on *Data Analytics using R*, June 6-7, 2020, organized by Training Gurus, New Delhi.
42. *E-Content Development*, August 18-22, 2020, organized by Engineering Staff College of India and UIET, Kurukshetra University, Kurukshetra, Haryana.

11. Orientation and Refresher Courses Attended

1. *UGC Sponsored Orientation Course*, July 19 - August 14, 2010 organized by Academic Staff College, Kurukshetra University, Kurukshetra, Haryana.
2. *UGC Sponsored Refresher Course in Information Technology*, June 14 - July 7, 2011 organized by Academic Staff College, Kurukshetra University, Kurukshetra, Haryana.
3. *UGC Sponsored Refresher Course in Environmental Studies*, December 10 - 30, 2015 organized by Human Resource Development Centre, Kurukshetra University, Kurukshetra, Haryana.

12. Awards and achievements:

- *Best Researcher - Kalpana Chawla Memorial Award* (2002-2003) awarded by Kurukshetra University, Kurukshetra, Haryana.
- Received *First prize in IAPT National Competition on Essay Writing in Physics (NCEWP-2018)* on the topic “Role of Physics in ICT revolution” at Ranchi, Jharkhand.
- *Senior Research Fellowship* awarded by CSIR, New Delhi, India (October 20, 2000 to October 31, 2003).
- *Best Poster Award* on paper entitled “A comparative analysis of experimental and theoretical stopping force of polymeric materials”, in National Conference on Nonmaterial’s and Instrumentation NCNI (2014), March 09-10, 2014 held at Department of Physics, NIT, Kurukshetra.

13. Invited Talks

- *Energy loss and straggling of swift heavy ions in solid foils*, National Conference on Recent Trends in Physics, March 29-30, 2014, S.D. College, Panipat, Haryana.
- *Mass mystery and LHC: A step ahead to uncovered the truth*, National Conference on Current Developments in Physics (CDIP-2016), March 28-29, 2016, S.D. (PG) College, Panipat, Haryana

14. Technical skills

Programming languages: *Python, Fortran*

Software : *Origin, SPSS*

Programs: *SRIM, MSTAR*

15. Membership in professional bodies (Life memberships)

1. Ion Beam Society of India
2. Indian Society for Radiation Physics (ISRP), India
3. Nuclear Track Society of India (NTSI), India
4. Indian Association of Physics Teachers (IAPT), India

16. Membership in Institute/University Committees

- Member, BOG, UIET, KUK
- Member, Board of Studies (BOS), Department of Applied Science, UIET and other affiliated colleges

- Member, Departmental Research Committee (DRC), Department of Applied Science, UIET
- Member, Complaint Committee (Theory examination)

17. Administrative Responsibilities

- Acted as Faculty Incharge, Department of Applied Science, UIET
- Acted as Controller of Examination (COE - E & R), UIET
- Acted as Convener – Admission Committee (B.Tech.), UIET
- Acted as Convener – Admission committee (M.Tech.), UIET (Sessions: 2012-13, 2013-14, 2014-15)
- Acted as Dean’s Nominee in various committees
- Acted as Superintendent in Chief, UIET, (2014-15, Even Semester)
- Acted as Nodal Officer, UIET (2014-15, Even Semester)
- Acted as Centre Supdt. to conduct various competitive examinations like HSCS, UGC, HTET, entrance examinations for University admissions etc.
- Acted as Convener - Evaluation Centre
- Acted as Convener - Flying Squad Committee
- Acted as Convener - Time Table Committee
- Acted as Convener - Discipline Committee
- Acted as member of inspection committee for various colleges.
- Acted as Co-convener/member of various proctorial committees to conduct centralized events like Ratnavali, Youth Festivals, International Seminars and Convocations etc.
- Acted as Observer to conduct typing test (on computer) for recruitment of Clerks in K.U.K.
- Nodal Officer to conduct external examinations other than UIET.

18. Sports achievements

Participated/qualified in different state-level competitions in 10 m air pistol shooting

(Dr. Pawan K. Diwan)