

Kumaun University, Nainital

Curriculum Vitae

Name : Dr P. K. Mishra
 Designation : Associate Professor*
 Department :Physics
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Educational Qualification

Degree	University	Subjects	Year
B. Sc (Hons)	BHU, Varanasi	Physics, Mathematics & Chemistry	1996
M. Sc (Solid State Physics)	BHU, Varanasi	Plasma Phys., Stat. Phys., Numerical methods of computation, Solid State Phys.	1998
PhD (Theoretical Physics Condensed Matter Physics)	BHU, Varanasi	Specialization: Theoretical Physics Condensed Matter Physics, Statistical Physics and Polymer Physics	Thesis submitted in the year 2004 and degree awarded in the year 2005
NET-CSIR	CSIR-HRDG New Delhi	Physical Sciences	1998

Work Experience (add row if required)

Position	Department	University/Organization	Year (date)
Lecturer (Assistant Professor)-AGP Rs 6000	Physics	Kumaun University	19.03.2005
Assistant Professor-AGP Rs 7000	Physics	Kumaun University	19.03.2009
Assistant Professor-AGP Rs 8000	Physics	Kumaun University	19.03.2014- WPSB-379 (2016)
Associate Professor-AGP-	Physics	Kumaun University	*To be updated

Rs. 9000			after enquiry on promotion process dated 14.08.2018

Administrative Responsibilities (add row if required)

Position	Nature of responsibility	University/Organization	Year
Admission Committee duties	Member/Convenor ¹ of the admission committee	Kumaun University @ DSB Campus, Nainital	2005-06,.....,2023 ¹
Member Academic Council	----	Kumaun University	2022-23
Assistant Superintendent	Conduction of examinations	Kumaun University	2016
Contributed to other responsibility assigned from time to time as a paper setter, internal/external examiner, invigilator etc.			

Research Interests

(List your research interests and areas of expertise in 1-3 lines)

Specialization: Theoretical Physics-Condensed Matter Physics, Statistical Physics and Polymer Physics (**18 publications as a sole author** & list is appended below).

Publications (start from recent publications)

a) Research Papers (**add row if required**)-List appended below

Authors name	Title of the paper	Journal, vol, page no	Year

b) Patents (start from recent publications) (**add row if required**)-NA

Authors name	Title of the patent	Patent no (Granted or filed)	Year

c) Books (start from recent publications) (**add row if required**)-NA

Authors name	Title of the book	Publisher	ISBN	Year

d) Book chapters (start from recent publications) **(add row if required)-NA**

Authors name	Title of the book	Publisher	ISBN	Year

e) Conference Publications/Proceedings (start from recent publications) **(add row if required)-NA**

Authors name	Title of the paper	Conference name	Year

Projects (add row if required): Completed one project as a PI.

Title of the project	Funding agency	Amount (Rs)	Year
in restricted geometries and their conformational behaviour: Role of randomness and disorder	SERB-DST New Delhi; Ref: SR/FTP/PS-122/2010; Dated: 27-01-2012	Three Lakh	Sanctioned in the year-2012 Project duration-2014-2017

Teaching details (add row if required): I taught one theory paper at UG level and one theory paper at PG level in each semester; and in a few semester/year I taught two specialized theory papers to PG students. **I have to run laboratory classes of more than one teacher as the only available teacher often.** Following table has details of recent two semesters only:

Name of the course/paper	Department	University	Year
LCC-10-Cond. Matt. Phys. at M Sc level	Physics	Kumaun University	03/2024-
Minor paper-Basic Physics-II at UG level	Physics	Kumaun University	03/2024-
Physics-I B. Sc. Vth Semester	Physics	Kumaun University	09/2023-Jan 2024
Minor paper-Basic Physics-II at UG level	Physics	Kumaun University	09/2023-Jan 2024

Professional Memberships (add row if required)

Organization	Position	Year
IAPT, Kanpur	Life member	2014-15 and onwards
ISCA, Kolkata	Life member-L24275	2014-15 and onwards
DAE, BARC	Reviewer	2016-17 and onwards
SERB DST New Delhi-Inspire MANAK	Expert	2021-22 and onwards
JPSE	Assistant Editor	2019- 2020 and onwards
I served to several journal (Physica A, Phase Transitions, J. Phys. A, ...) as a reviewer during past 15 years of my service at the Kumaun University.		

Honours and Awards (add row if required): (Fellowship)

Award	Awarding Organization	Year
JRF	DST New Delhi	2000-2002
SRF	CSIR New Delhi	2003-2005
DST Young Scientist	DST New Delhi	2012

Conference Presentations (add row if required): Attended couple of national and a few international conference/seminar and details of recent a few appended below:

Title of presentation	Conference name	Name of the institution	Year
Surface energy versus entropy: Exact results	RAFM-2024 (International)	ARSD College, New Delhi	2024
Adsorption of a confined polymer chain-Exact results	RAFM-2022 (International)	ARSD College, New Delhi	2022
Defect induced polymer aggregates: A theoretical study	CONIAPS-XXVI (International)	International Academy of Physical Sciences and MGU, Kottayam, Kerala	2020
An infinitely long flexible polymer chain in between two parallel plates	CONIAPS-XXVII (International)	International Academy of Physical Sciences and Institute of Science, BHU, Varanasi	2021

List of publications:

1. P. K. Mishra; 'Defects induced polymer aggregates: A theoretical study', *Materials Today: Proc.* **47** (2021) 1526; <https://doi.org/10.1016/j.matpr.2021.03.223>.
2. P. K. Mishra; 'A theoretical estimate on the probability of the formation of a self-avoiding copolymer macromolecule', *J. Phys: Conf. Ser.* **1849** (2021) 012027; <https://doi.org/10.1088/1742-6596/1849/1/012027>.
3. P. K. Mishra; 'Aggregation of a macromolecule in a nano cube', *Materials Today: Proc.*; **49(8)** (2020) 3142-3146, <https://doi.org/10.1016/j.matpr.2020.11.055>.
4. P. K. Mishra; 'A nano polymer aggregate on a substrate: A theoretical study', *J. of Phys. Conf. Ser.*, **1644**, (2020) 012033; <https://iopscience.iop.org/article/10.1088/1742-6596/1644/1/012033/pdf>.
5. P. K. Mishra; 'Theoretical estimate of the probability for macromolecule formation', *J. of Adv. Appl. Sci. Res.*, **2(4)**, (2020) 1-8; <http://www.joaasr.com/index.php/joaasr/article/view/353>.
6. P. K. Mishra; 'The response of a macromolecule near a tiled substrate', *Journal of Engineering Sciences*, **11(4)**, (2020) 43-48; <http://dx.doi.org/10.15433.JES.2020V11I04.43P.9>.

7. P. K. Mishra; 'The role of annealed defects on conformational statistics of a self-avoiding semi-flexible polymer chain: Exact results (I)', *International Journal of Current Advanced Research*, **9(2)**, (2020) 21288-21291; <http://dx.doi.org/10.24327/ijcar.2020.21291.4179>.
8. P. K. Mishra; 'Statistics of a self-avoiding semi-flexible polymer chain containing quenched defects: Exact results(II)', *International Journal of Scientific Research in Physics and Applied Sciences*, **7(6)** (2019) 21-26; <https://doi.org/10.26438/ijrpsas/v7i6.1923>.
9. P. K. Mishra; 'The bending energy of a semi-flexible polymer chain and the polygons of the polymer chain', *International Journal of Engineering Research and Technology*, **8(12)** (2019) 514-517; <http://dx.doi.org/10.17577/IJERTV8IS120282>.
10. P. K. Mishra; 'Recognizing pattern in assigning name to child', *International Journal of Science and Research*, **8(9)** (2019) 1830-1834; <https://www.ijsr.net/archive/v8i9/v8i9.php>.
11. P. K. Mishra and R. Mishra; 'Attendance of students in the class and their performance', *International Journal of New Innovation in Engineering and Technology*, **10(3)** (2019) 1-8; <http://www.ijniet.org/wp-content/uploads/2019/05/01.pdf>.
12. P. K. Mishra; 'Effect of confinement and stiffness on the conformational change of a semiflexible homopolymer chain', *Ind. J. Phys.* **91** (2017) 1297-1304; <https://doi.org/10.1007/s12648-017-1049-4>.
13. P. K. Mishra; 'Equilibrium statistics of an infinitely long chain in the severe confined geometry: Exact results', *Phase Transitions*, **88(6)** (2015) 593-604; <https://doi.org/10.1080/01411594.2015.1007576>.
14. P. K. Mishra; 'A semiflexible polymer chain under geometrical restriction: Only bulk behaviour and no surface adsorption', *Cond. Matt. Phys.*, **17(2)** (2014) 23001 (09 pages); <https://doi.org/10.5488/CMP.17.23001>.
15. P. K. Mishra; 'Effect of geometrical constraint on conformational properties of a polymer chain' *Phase Transitions*, **84(3)** (2011) 291-298; <https://doi.org/10.1080/01411594.2010.534657>.
16. P. K. Mishra; 'A semiflexible alternating copolymer chain adsorption on a flat and a fluctuating surface', *J. Phys.: Cond. Matt.* **22** (2010) 155103 (11 pages); <https://iopscience.iop.org/article/10.1088/0953-8984/22/15/155103/meta>.
17. P. K. Mishra; 'Divergence of persistent length of a semiflexible homopolymer chain in the stiff chain limit', *Fizika A*, **19(3)** (2010) 145-152; http://fizika.hfd.hr/fizika_a/av10/a19p145.htm; <https://www.scopus.com/record/display.uri?eid=2-s2.0-79952681021&origin=inward&txGid=b822514d7127ce0fe52c5d3b25c1c063>.
18. P. K. Mishra; 'Exact results for the adsorption of a semiflexible copolymer chain in the three dimensions', *Phase Transitions*, **83(1)** (2010) 47-54; <https://doi.org/10.1080/01411590903537588>.
19. P. K. Mishra; 'Directed self avoiding walk model of a semiflexible polymer chain on a rectangular lattice and a square lattice', *New York Sci. J.* **3(1)** (2010) 32-37; <https://doi.org/10.7537/marsnys030110.07>.
20. P. K. Mishra; 'Conformational properties of a semiflexible polymer chain: Exact results on a hexagonal lattice', *Acad. Arena* **1(6)** (2009) 1-7; <https://doi.org/10.7537/marsaaj010609.01>.
21. P. K. Mishra, S. Kumar and Y. Singh; 'Force-induced desorption of a linear polymer chain adsorbed on an attractive surface', *Europhys. Lett.* **69(1)** (2005) 102-108, <https://iopscience.iop.org/article/10.1209/epl/12004-10304-5>.
22. P. K. Mishra and S. Kumar; 'Effect of confinement on coil-globule transition', *J. Chem. Phys.* **121(17)** (2004) 8642-8646; <https://doi.org/10.1063/1.1796233>.
23. D. Giri, P. K. Mishra and S. Kumar; 'Critical behaviour of stiff polymer chain near the surface', *Ind. J. Phys.* **77A (6)** (2003) 561-563; <https://core.ac.uk/download/pdf/159340242.pdf>.
24. P. K. Mishra, S. Kumar and Y. Singh; 'A simple and exactly solvable model for a semiflexible polymer chain interacting with a surface', *Physica A* **323** (2003) 453-465; [https://doi.org/10.1016/S0378-4371\(02\)01993-3](https://doi.org/10.1016/S0378-4371(02)01993-3).
25. P. K. Mishra, D. Giri, S. Kumar and Y. Singh; 'Does a surface attached globule phase exist?' *Physica A* **318** (2003) 171-178; [https://doi.org/10.1016/S0378-4371\(02\)01424-3](https://doi.org/10.1016/S0378-4371(02)01424-3).
26. P. K. Mishra and Y. Singh; 'Collapsed and adsorbed states of a directed polymer chain in two dimensions', *Phase Transitions*, **75(4-5)** (2002) 353-361; <https://doi.org/10.1080/01411590290027036>.

Signature of the faculty member

Dr. P. K. Mishra

