

Dr. Prem Pankaj

Assistant Professor (Physics)

Dept. of S&H

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Dr. Prem Pankaj completed his graduation (B.Sc. Non-Medical) and post-graduation (MSc) in Physics from MLSM College, Sunder Nagar, which is affiliated to Himachal Pradesh University, Summer Hill, Shimla. In 2015, he completed his M.Phil. degree in Physics from Central University of Punjab, Bathinda. He has done his M.Phil. experimental work at National Physical Laboratory (NPL), New Delhi. He joined PhD (Physics) at Sant Longowal Institute of Engineering and Technology, Longowal, Punjab (SLIET, a CFTI under Ministry of Education, Govt. of India) in 2015 under TEQIP (Technical Education Quality Improvement Programme). He has taken independent load of Diploma Classes (ICD-I) for 5 years during Ph.D. He also advised around 20 MSc students during their final year projects. He was awarded PhD degree in 2023. He carried out his major research activities in EM laboratory in Department of Physics (SLIET). His research is primarily focused on dielectric properties measurement of different biological and geological materials relevant to dielectric heating. His expertise is in open-ended coaxial probe method, cavity perturbation method and designing related setup for dielectric properties measurements using Vector Network Analyzer (VNA).

He served as an Assistant Professor in the Department of H&S, at Ashoka Women's Engineering College, Kurnool, Andhra Pradesh for one year (2024). Presently he is working as an Assistant Professor, Physics in S&H Department at JB Institute of Engineering & Technology (Autonomous), Hyderabad, India. He has published 5 research papers in SCI/Scopus indexed journals, 4 conference papers and 1 book chapter. He is editor at Radiation Science and Technology. He is a section editor at Journal of Analytical Chromatography and Spectroscopy. He is a regular reviewer at Journal of Microwave Power and Technology, Journal of Food Characterization etc.

1. Academic Qualifications:

- a. Ph.D. (Physics) from Sant Longowal Institute of Engineering and Technology, Longowal, Punjab (Deemed University under Ministry of Education) in 2023 (under TEQIP).
- b. M.Phil. (Physics) from Central University of Punjab, Bathinda in 2015
- c. MSc. (Physics) from MLSM College, Sunder Nagar (Himachal Pradesh University, Summer Hill, Shimla) in 2013
- d. BSc. (Non-Medical) from MLSM College (Himachal Pradesh University, Summer Hill, Shimla) in 2010

2. **Ph.D. Thesis:** Dielectric Properties OF Agri-Food and Biomass materials relevant to Dielectric Heating

3. **M.Phil. Thesis:** Characterization of a Newly Prepared Ferroelectric Liquid Crystal Mixture

4. Experiences:

Teaching Experience

- Presently working as an Assistant Professor (Physics) in Department of Sciences and Humanities Engineering at JB Institute of Engineering & Technology (Autonomous, NAAC & NBA accredited), Hyderabad, India from Feb 2025- till date.

- Served as an Assistant Professor in the Department of Humanities and Sciences at Ashoka Women's Engineering College (Autonomous, NAAC & NBA accredited), Kurnool, Andhra Pradesh, India from Dec 2023- Jan 2015.
- Taken independent Diploma (first year) load of Physics during PhD for 5 years.

Research Experience

- 08 years of research experience as PhD Scholar at SLIET Longowal (2015-2023).
- 02 years of research experience as M.Phil. scholar at central university of Punjab (2013-15).
- Advised more than 20 M.Sc. projects.

Administrative Experience

- Served as Coordinator for "Ashoka Online Guest Lecture Series 2024" at Ashoka Women's Engineering College, Kurnool, AP.
- Served as Departmental Coordinator for Workshops and Add-on Courses at Ashoka Women's Engineering College, Kurnool, AP.

5. Research Publications:

- 05 SCI/Scopus indexed journal papers
- 03 research papers in Scopus indexed International Conferences and 01 in national conference.
- 01 book chapter in Recent trends in Science and Technology (Vol. 6) (Publisher - BP International)

6. Areas of Teaching Assignments:

Engineering Physics, Applied Physics.

7. Conferences Attended (as author):

- 4th National Conference on advanced materials and radiation physics at SLIET, Longowal, India during March 13-14, 2015.
- National conference on condensed matter physics and applications at Manipal Institute of Technology, Karnataka, India during March 27-28, 2015.
- 3rd International conference on condensed matter & applied physics at Govt. Engineering College, Bikaner, India during October 14-15, 2019.

8. Workshop Attended:

- One-week international workshop on Nano-materials modelling using Machine learning and SIESTA" held at Govt. P. G. College, Bilaspur, India during April 14-19, 2023.

9. Faculty Development Programs Attended:

- One Week Faculty Development Programme on Research Methodologies: Quantitative and Qualitative Research organized by Department of ECE, CVR College of Engineering, Hyderabad, Telangana from 5th to 9th February, 2024.
- One-Week Online Faculty Development Programme on Advance Pedagogy in Higher Education" organized by E&ICT Academy IIT Guwahati held from 25th to 29th March, 2024 in association with SLIET Longowal, Sangrur, Punjab.

- Three Days FDP on Redefining Research Skills: Enriching Research and Publication” organized by Ashoka Women’s Engineering College, Kurnool from 3rd to 5th June, 2024.
- Completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on “Cryogenics Treatment on Materials, Processes & Equipment at Santhiram Engineering College from 16th to 21st December, 2024.

10. Organizing Capabilities:

- Organized “One-week International workshop on In-Silico Nanomaterials Modelling Using DFT Tools (IWNMM-2024)” at Ashoka Women’s Engineering College, Kurnool w.e.f. 24.07.2024 to 29.07.2024 in association with Indian Association of Physics Teachers (IAPT) (as a **coordinator**)
- Organized “National conference on Interdisciplinary Research in Humanities and Sciences (NCIRHS-2K24)” (Online Mode) at Ashoka Women’s Engineering College, Kurnool w.e.f. 20.12.2024 to 21.12.2024 (as a **coordinator**)

11. Experience as Reviewer:

- Reviewer at Journal of Microwave Power and Electromagnetic Energy
- Reviewer at Journal of Food Measurement and Characterization
- Editor at Radiation Science and Technology
- Section editor at Journal of Analytical Chromatography and Spectroscopy

12. Professional Memberships:

- Lifetime member of Indian Association of Physics Teachers (**IAPT**)
- Former Executive member of RC-11, IAPT
- Member of Optica Society

13. Publications:

International Journals

1. **Pankaj, P.**, Palta, P., Kaur K., & Mann, K. S. (2020). Performance of high temperature open-ended coaxial probe for dielectric properties of high loss food materials in frequency range 10-200 MHz. Solid State Technology, 63(2s).
2. **Pankaj, P.**, Kaur, P., & Mann, K. S. (2021). Frequency, Temperature and Moisture Dependent Dielectric Properties of Chicken Manure Relevant to Radio frequency/Microwave Drying. Poultry Science Journal; <https://dx.doi.org/10.22069/psj.2021.18930.1677>
3. **Pankaj, P.**, Kaur, P., & Mann, K. S. (2022). Dielectric properties of eggshell powder at 2.45 and 5.8 GHz relevant to dielectric heating. Journal of Microwave Power and Electromagnetic Energy, 56(3), 178-191. <https://doi.org/10.1080/08327823.2022.2107869>
4. Palta, P., **Pankaj, P.**, Kaur, P., & Mann, K. S. (2022). Dielectric Properties of Soils of India at Radio and Microwave Frequencies: A Review. ECS Transactions, 107(1), 6413. <https://doi.org/10.1149/10701.6413ecst>
5. Pankaj, P., Kaur, P., & Mann, K. S. (2024). Dielectric Heating Protocol of Three Low Moisture Flours as Affected by Moisture, Temperature and Mass at 2.45 and 5.8 GHz. Journal of Culinary Science & Technology, 1-17. <https://doi.org/10.1080/15428052.2024.2416437>

International Conferences

6. **Pankaj, P.**, Kaur, P., & Mann, K. S. (2020, May). Dielectric properties of chili powder relevant to

microwave drying at 5.8 GHz. In AIP conference proceedings (Vol. 2220, No. 1). AIP Publishing.; <https://doi.org/10.1063/5.0001816>

7. Palta, P., **Pankaj, P.**, Kaur, P., & Mann, K. S. (2020, May). Dielectric properties of soils of Moga region (Punjab) at X-band frequency 9.08 GHz. In AIP conference proceedings (Vol. 2220, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0001810>
8. Palta, P., Pankaj, P., Kaur, P., & Mann, K. S. (2021, August). Moisture-dependent dielectric properties of soils of Faridkot region (Punjab) at 9.08 GHz. In AIP Conference Proceedings (Vol. 2352, No. 1). AIP Publishing. (2021). <https://doi.org/10.1063/5.0052715>
9. **Pankaj, P.**, Begum, A., & Thahmina, K., (2024, December). Dielectric Properties of Milk Powder at 2.45 GHz. In National conference on interdisciplinary research in humanities and Sciences.

Book Chapters

10. **Pankaj, P.**, Kaur, P., & Mann, K. S. (2023). Dielectric Spectroscopy as a Tool to Distinguish Starch and Flour. <https://doi.org/10.9734/bpi/rpst/v6/4836E>
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