

**Dr. Subhash Chandra Pokhriyal**

(Assistant Professor)

Department of Physics

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**RESEARCH INTEREST:**

My current research thrust focused on study of the Conducting and non-conducting Polymers and Natural radiation. For this work, I have been using Swift Heavy Ions of energies 50 MeV ~ 120 MeV available from Ion Accelerator (15 UD Pelletron) at Inter University Accelerator Centre, New Delhi, India. Particularly I am studying the effects of Swift Heavy Ions on the Polymer thin films. This research essentially involves structural analysis, optical analysis and surface morphology of the polymers. Moreover chemical and electrochemical synthesized polymers are suitable candidates for various applications viz. rechargeable batteries, solar cells, LED's and sensors [**Journal of Physics D: Applied Physics**, Vol. 41 (2008) 115411]. Participation in Swift heavy ions (SHI) irradiation experiment is also part of my research. This research will combine design and modification of conducting polymer films using SHI irradiation for commercial application [**Nuc. Ins. & Meth. In Phys. Res.-B**, Vol. 268 (2010) 62–66].

For study of natural radiation is deeply related to measurement and protection of radiation [**Environmental Monitoring and Assessment**, Vol. 197 (2025) 128].

**AREA OF RESEARCH INTEREST:**

- Conducting and Non Conducting Polymers
- Nano Materials
- Radiation Protection

**SCIENTIFIC VISITS ABROAD:**

- Zakopani, Poland (9-15 may, 2009), Visit granted by CSIR, India and Institute of Nuclear Science, Poland.
- D'Archamps, France (4 January to 6 February, 2010), Visit granted by DST, India and European Scientific Institute.

**OTHER NATIONAL LEVEL ACHIEVEMENTS:**

- Junior Research Fellowship (**JRF**) Awarded by IUAC formerly known as Nuclear Science center, New Delhi, India from September 2005 to August 2008.
- Senior Research Fellowship (**SRF-Direct**) Awarded by CSIR, New Delhi, India from. October 2008 to August 2009.

**AWARDS**

- Chief Minister excellent research paper publication award 2024.
- Chief Minister excellent research paper publication award 2025.

**MEMBERSHIP OF SCIENTIFIC ORGANIZATION:**

Life Member of Nuclear Track Society of India (NTSI)

Indian Association of Physics Teachers (IAPT)

**RESEARCH/TEACHING EXPERIENCE:**

Nineteen/Fifteen years

### ***CURRENT JOB STATUS:***

Working as an **Assistant Professor, Department of Physics**, P.N.G. Government. P. G. College Ramnagar, Nainital-244715, Uttarakhand, India.

### ***SCIENTIFIC RESEARCH PROJECT CARRIED OUT***

Principal Investigator of research project entitled “Comprehensive study for radionuclide contents and radon concentrations in soil and spring water along Main Central Thrust in Garhwal Himalaya, India” Sponsored by **UCOST, Govt. of Uttarakhand** (July 2022 to July 2024)

### ***CONFERENCE/WORKSHOP ORGANIZED***

1. **Convener** of the workshop “Concepts of Physics and Development of innovative teaching methods to inspire inquiring spirit among School and Under Graduate Students” held on 04- 05 February 2020 at Department of Physics, P.N.G. Govt. (P.G.) College Ramnagar (Nainital)-244715, Uttarakhand, India Sponsored by **UCOST, Govt. of Uttarakhand**.
2. **Convener** of the workshop “Hands on Physics experiments through demonstrations and concepts of Physics” held on 16-17 March, 2024 at Department of Physics, P.N.G. Govt. (P.G.) College Ramnagar (Nainital)-244715, Uttarakhand, India Sponsored by **USERC, Govt. of Uttarakhand**.
3. **Co-organizing secretary** of the e-international conference “Recent advance in Physics: A promise to society” held on 24-25 June 2020 at Department of Physics, Govt. (P.G.) College Bazpur (U.S. Nagar).
4. **Organizing secretary** of the e- National conference “Advances in Theoretical Physics, Material and Atmospheric Sciences” held on 16-17 July 2021 at Department of Physics, Govt. (P.G.) College Dakpathar, Dehradun.

### ***RESEARCH SUPERVISION***

Supervising **Ph.D. students** for their **Ph. D. degrees** as per following details:

1. Study of Radon generation and transport from Soil to Environment in Uttarkashi region of Garhwal Himalaya. ( Mr. Krishna Pal Negi- **Thesis Awarded, December 2025**)
2. Synthesis and characterisation of hybrid nanocomposites with reduced graphene oxide (rGO) for sensor applications (Mr. Saurabh Pandey- **Registered in 2022**)

### ***ACADEMIC QUALIFICATION:***

- Ph.D. in materials science (Physics) from H N B Garhwal University, India, (Degree **Awarded on 24 October 2009**).
- Master of Science in “Physics” (Specialization - Electronics) (July 2003) from H N B Garhwal University, India.
- Bachelor of Science (B. Sc.) in Physics, Chemistry and Mathematics (2001) from Kumaun University Nainital. India.

### ***PUBLICATION IN JOURNALS OF INTERNATIONAL REPUTE:***

1. Health risk assessment of uranium in drinking water in Tons Valley in Garhwal Himalaya, India, Ganesh Prasad, Krishna Pal Singh, Deepak Singh, Mukesh Prasad, Vivek Anand, **Subhash Chandra**, Yasutaka Omori, Masahiro Hosoda, G. Anil Kumar, Shinji Tokonamai, R. C. Ramola, *Journal of Radioanalytical and Nuclear Chemistry*, (2025) <https://doi.org/10.1007/s10967-025-10679-x>.
2. Occurrence, Correlation and health implications of uranium and potentially toxic elements (PTEs) in Himalayan springs, Deepak Singh, Ganesh Prasad, Sanjeev Kimothi, **Subhash Chandra**, Yasutaka Omori, Masahiro Hosoda, G. Anil Kumar, Shinji Tokonamai, R. C. Ramola, *Journal of Radioanalytical and Nuclear Chemistry*, (2025) <https://doi.org/10.1007/s10967-025-10279-9>.
3. Health risk implications due to uranium content in drinking water sources from the tectonically active zone of Garhwal Himalaya, India, Krishna Pal Singh, **Subhash Chandra**, Abhishek Joshi,

Shubham Sharma, Vikrant Thakur, Ganesh Prasad, Rohit Mehra, R.C. Ramola, *Applied Radiation and Isotopes*, 221 (2025)111804.

4. Measurement of natural radionuclides and health risk assessment in soil samples of the Main Central Thrust region in Garhwal Himalay, India, Krishna Pal Singh, **Subhash Chandra**, Mukesh Prasad, Pooja Panwar, Abhishek Joshi, Shubham Sharma, Sanjeev Kimothi, Ganesh Prasad, Rohit Mehra, R. C. Ramola, *Environmental Monitoring and Assessment* (2025) 197:128.
5. Estimation of background radiation in the indoor air in geo-sensitive zones of the Garhwal Himalaya, India, Ganesh Prasad, Krishna Pal Singh, Sanjeev Kimothi, **Subhash Chandra**, R. C. Ramola, *Journal of Radioanalytical and Nuclear Chemistry* 333:3219–3227 (2024).
6. Estimation of radiation dose due to ingestion of radon in water samples of Garhwal Himalaya, India, Krishna Pal Singh, **Subhash Chandra**, Mukesh Prasad, Abhishek Joshi, Ganesh Prasad and R.C. Ramola *Journal of Radioanalytical and Nuclear Chemistry* (2024) 333:2867–2879.
7. Measurement of Radon concentration in soil gas and radon exhalation rate form soil samples along and across the Main Central Thrust of Garhwal Himalaya, India, Krishna Pal Singh, **Subhash Chandra**, Pooja Panwar, Abhishek Joshi, Ganesh Prasad, G.S. Gusain and R.C. Ramola *Environmental Geochemistry and Health* (2023) 45:8771–8786.
8. Doses form inhalation of radon and thoron for residents in tectonically active region in central Indian Himalaya, Ganesh Prasad, Sanjeev Kimothi, **Subhash Chandra**, Y. Omori, S.K.Sahoo, T. Ishikawa, S. Tokonami and R.C. Ramola *Journal of Radioanalytical and Nuclear Chemistry* (2024) 333:2999–3005.
9. Monitoring of terrestrial gamma radiation exposure in different geological Stress conditions of UttarakhandHimalayan region, India, G Prasad, S Kimothi, **S Chandra**, A Thapliyal and R C Ramola *Journal of Physics: Conference series (IOP Science- scopus indexed)* 2267 (2022) 012102.
10. Variation of Radon levels in soil and groundwater and its relation with seismic activity in Garhwal Himalaya, G.S. Gusain, Ganesh Prasad, **Subhash Chandra**, R.C.Ramola, *GEO-HAZARDS: Recent Research, 2015 (Conference proceeding)*.
11. Radon generation and decay from soil and groundwater of Budhakedar Garhwal Himalaya. Ganesh Prasad , G.S. Gusain, **Subhash Chandra** , R.C. Ramola, *GEO-HAZARDS: Recent Research,2015 (Conference proceeding)*.
12. Ion Beam Induced Modifications in Conducting Polymers R. C. Ramola and Subhash Chandra, *Defect and Diffusion Forum Vol. 341 (2013) pp 69-105*.
13. The Effect of Oxygen beam ( $O^{+7}$ ,100 MeV) and Gamma Irradiation on Polypyrrole Film. **Subhash Chandra**, S Annapoorni, Fouran Singh, R G Sonkawade, J M S Rana and R C Ramola, *Journal of Applied Polymer Science* ,Vol. 115, (2010) 2502–2507.
14. Low temperature resistivity study of nanostructured polypyrrole films under electronic excitations. **Subhash Chandra**, S. Annapoorni, Fouran Singh, R.G. Sonkawade, J.M.S. Rana and R.C. Ramola, *NIM-B*, 268 (2010) 62-66.
15. A Comparative study of the effect of the effect of  $O^{+7}$  ion beam on Polypyrrole and CR-39 (DOP) Polymers. R. C. Ramola, **Subhash Chandra**, J. M. S. Rana, R. G Sonkawade, P. K. Kulriya, Fouran Singh, D. K. Avasthi and S. Annapoorni, *J. Phys. D: Appl. Phys.* Vol. 41 (2008) 115411.
16. Modification of Electrical Properties and Structuring of Polyaniline by Swift Heavy Ion Irradiation. R. C. Ramola, **Subhash Chandra**, J. M. S. Rana, R. G Sonkawade, P. K. Kulriya, Fouran Singh, D. K. Avasthi and S. Annapoorni, *Current Science*, Vol. 97, No.10 (2009) 1453-1458 .

17. Effects of swift heavy ions irradiation on polypyrrole thin films. R. C. Ramola, Abdullah Alquadami, **Subhash Chandra**, S. Annapoorni, J. M. S. Rana, R. G. Sonkawade, Fouran Singh and D. K. Avasthi, *Radiation Effects and Defects in Solids*, Vol. 163, No. 2 (2008), 139-148.
18. Swift Heavy Ion induced modifications in CR-39 (DOP) and PET polymers. R.C. Ramola, **Subhash Chandra**, J.M.S. Rana, R.G. Sonkawade, P. K. Kulriya, and S. Annapoorni, *Physica B: Condense matter*, Vol. 404 (2009) 26-30.
19. Change in electrical properties of Polyaniline pellet, irradiated by Lithium beam. **Subhash Chandra**, Raksha Sharma, S. Annapoorni, R. G. Sonkawade, J. M. S. Rana and R. C. Ramola, *Chemical and Environmental Research* Vol. 15 No.3&4 (2006)211-214.
20. Interaction of Oxygen ( $O^{+7}$ ) ion beam on Polyaniline thin films. **Subhash Chandra**, Ambika Negi, S. Annapoorni, R.G. Sonkawade, P. K. Kulriya, Fouran Singh, D. K. Avasthi, J.M.S. Rana and R. C. Ramola, *Indian Jr. of Physics* Vol. 83 (2009) 163-167.
21. Effects of  $O^{+7}$  radiation on structural and optical properties of Polypyrrole thin films, **Subhash Chandra**, R. G Sonkawade, P. K. Kulriya, Fouran Singh, S. Annapoorni, D. K. Avasthi, J. M. S. Rana and R. C. Ramola, Proceedings of the DAE Solid State Physics Symposium (2007).
22. Modifications induced by  $Li^{+3}$ ,  $Ni^{+9}$  and  $Au^{+9}$  ion beams to CR-39 polymer track detector. Ambika Negi, Anju Semwal, **Subhash Chandra**, R.V. Hariwal, R.G. Sonkawade, D. Kanjilal, J.M.S. Rana, R.C. Ramola, *Radiation Measurements* Vol.46 (2011) 127-132.
23. High Energy Heavy Ion Irradiation Effects in Makrofol-KG Polycarbonate and PET. R.C. Ramola, Ambika Negi, Anju Semwal, **Subhash Chandra**, J.M.S.Rana, R.G.Sonkawade, D.Kanjilal. *Journal of Applied Polymer Science* Vol. 121 (2011) 3014-3019.

#### **NATIONAL/INTERNATIONAL CONFERENCE/WORKSHOP/SCHOOL ATTENDED:**

1. 5<sup>th</sup> national conference on “Radiation Awareness And Detection in Natural Environment (RADNET - V)” Held at Department of Physics, Graphic Era University, Dehradun during 7-9 October 2024.
2. International conference on “Radiation Awareness And Detection in Natural Eenvironment (RADNET - IV)”, Held at Department of Physics, Dolphin (P.G.) Institute of Biomedical and Natural Science, Dehradun during 2-4 March 2023.
3. International conference on “Aerosol, Air Quality and Climate change over Himalayan region of Uttarakhand (AAC-2022)”, Held at Department of Physics, HNBGU, Srinagar (Garhwal) during 4-6 November 2022.
4. Synergistic Training Program Utilizing the Advanced Research Instrumentation under STUTI, Programme, Department of Science and Technology, Govt. of India organized by Department of Physics, Bareilly college, Bareilly during 25-31 July 2022.
5. International conference on “Radon in environment” held at Zakopani/Krakow, Poland during 9-14 may, 2009.
6. Joint University Accelerator School (JUAS-2010), held at D’Archamps, France during 4 Jan to 6 February, 2010.
7. International e-Conference on “Recent Advances in Fundamental and Applied Sciences” held at Lovely Professional University, during 25-26 June 2021.
8. International Conference on “Renewable Energy” held at University of Rajasthan during 25-27 February 2022.
9. International e-Conference on “Recent Advances in Physics: A Promise to Society” held at Govt. P.G. College Bazpur during 24-25 June 2020.
10. National Conference on “National Conference on Advance in Theoretical Physics, Material and Atmospheric Sciences” held at V.S.K.C. Govt. P. G. College Dakpathar, Dehradun during 16-17 July 2021.
11. Third International Geo-Hazards Research Symposium (IGRS-2012), held at H.N.B. Garhwal University Campus Badshahithaul, Tehri Garhwal, during 10-14 June 2012.

12. School on X-ray Techniques held at Inter University Accelerator Center (Formerly NSC), New Delhi, 12- 16<sup>th</sup> June 2006.
13. Twelfth National Symposium on Environment held at H.N.B.Garhwal University Campus Badshahithaul, Tehri Garhwal, during 5-7 June 2003.
14. N.S.C. Acquaintance Programme on 10<sup>th</sup> October 2003 at H.N.B.Garhwal University Campus Badshahithaul, Tehri Garhwal, India.
15. National Conference cum workshop on Solid State Nuclear Track Detectors and Application organized by Post Graduate Department of Physics & Electronics , DAV College Amritsar, during November 1-3, 2004.
16. 14<sup>th</sup> National Symposium on Solid State Nuclear Track Detector, AMU, Aligarh on 10-12, November, 2005.
17. Awareness workshop on “The facilities of UGC-DAE Consortium for Scientific Research”, held at Kurukshetra University, India during December 4-5, 2006.
18. Work shop on “Accelerator and low level radiation safety”, held at Inter University Accelerator Centre, New Delhi, on 26-27 April, 2007.
19. National symposium on “Solid State Nuclear Track Detector and Their Applications” held at H.N.B.Garhwal University Campus Badshahithaul, Tehri Garhwal, during 21-23, June, 2007.
20. School on Optical properties of materials, held at Inter University Accelerator Center, New Delhi, 30<sup>th</sup> June to 2<sup>nd</sup> July 2008.
21. Work shop on “Accelerator based research on polymers”, held at Inter University Accelerator Centre, New Delhi, on 25 August, 2008.
22. Work shop on “Concept of physics: Popular lectures, Demons and Low cost Experiments”, held at Govt. P.G. College Gopeshwar, Chamoli, on 17-18 February 2013.

### **PROCESSING SKILLS:**

Sample Preparation : Preparation of conducting polymers by chemical and electrochemical methods.

### **CHARACTERIZATION:**

Structural	: X- ray diffraction.
Electrical measurements	: V~I and R ~ T (four Probe method)
Topography Study	: SEM.
Chemical bonds	: FTIR
Optical Analysis	: UV-Visible

### **COMPUTER SKILLS:**

LINUX, Windows, Origin

### **PERSONAL DETAILS:**

1. Sex : Male
2. Date of Birth : 15-06-1981
3. Nationality : Indian
4. Languages known : English, Hindi
5. Permanent Address : Subhash Chandra S/O Sh. G R Pokhriyal  
Near Mobile Tower, Jaspur Khurd  
Garhwal Sabha, Kashipur  
District- U S Nagar Pin- 244713, (Uttarakhand), India

  
(SUBHASH CHANDRA)