

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 is deeply related with high energetic particles. 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 Polyaniline and Polypyrrole 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].

AREA OF RESEARCH INTEREST:

- Conducting and Non Conducting Polymers
- Radiation Protection
- Heavy Ion Beam based modification of materials

ABROAD VISIT:

- 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.

MEMBERSHIP OF SCIENTIFIC ORGANIZATION:

Life Member of Nuclear Track Society of India.

Indian Association of Physics Teachers.

RESEARCH/TEACHING EXPERIENCE:

Twelve/Eight years

CURRENT JOB STATUS:

Working as an Assistant Professor in Department of Physics, P. N. G. (Govt.) P.G. College Ramnagar (Nainital) -244715, India.

EVENT ORGANIZED

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, India.

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).

PUBLICATION IN PEER REVIEWED JOURNALS:

1. Ion Beam Induced Modifications in Conducting Polymers. R. C. Ramola and **Subhash Chandra**, *Defect and Diffusion Forum*, Vol. 341, (2013) 69-105.
2. 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.
3. 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.
4. 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.
5. 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 .
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.

ABSTRACT ACCEPTED:

- Radon generation and decay from soil and ground water of Budhakedar Region, Garhwal Himalaya Region, India. – Abstract accepted in 2nd International conference “Radon in Environment 2015”, held at Krakow, Poland during 25-29 May 2015.
- A comparative study of the effect of O^{+7} ion beam and gamma radiation on polypyrrole and CR-39 polymers. - Abstract accepted in **ICMAT- 2007**, held at **Singapore** during 1-6 July 2007.

- Interaction of Oxygen ion beam on Polyaniline thin films- abstract accepted in National symposium on “Solid State Nuclear Track Detector and Their Applications” held at H.N.B.Garhwal University Badshahithaul Campus, Tehri Garhwal, during 21-23, June, 2007.
- The Effect of Oxygen Beam (O^{+7} , 100 MeV) and Gamma Irradiation on Polypyrrole Thin Film. Abstract accepted in International Conference on “Nanotechnology” 7 Trade show, Boston, **Massachusetts, USA**, during June 01-06, 2008.
- “Modification in Structuring and optical properties of LR-115 Type II Plastic Track Detector by Swift Heavy Ion Irradiation” Accepted in **24 ICNTS**, held at **Bologna, Italy**, during 1-5 September 2008.
- “Radon Measurement in Soil, Water and Indoor Atmosphere of Budhakedar in Garhwal Himalaya, India” Accepted in 1st International conference on radon in environment, held at **Zakopani, Poland**, during 10-14 may 2009.
- “Effect of Li^{+3} and O^{+8} ions on structuring, Optical band gap and low temperature resistivity of Polypyrrole films” accepted in international conference on Frontiers in polymer science, held at Mainz, Germany during 7-9, June 2009.

ACADEMIC QUALIFICATION:

- 1- Ph.D. in materials science (Physics) from H N B Garhwal University, India, (***Degree Awarded on 24 October 2009***).
- 2- Master of Science in “Physics” (Specialization - Electronics) (July 2003) H N B Garhwal University, India, Marks scored - 62.30% Ist div.
- 3- Bachelor of Science with Physics, Chemistry and Mathematics (2001) Kumaun University Nainital. India, Marks scored – 53.49% IInd div.

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.

NATIONAL/INTERNATIONAL CONFERENCE/WORKSHOP/SCHOOL ATTENDED:

- International conference on “Aerosols, Air quality and Climate change on Himalayan Region of Uttarakhand (AAC-2018)” held at H.N.B. Garhwal University, Srinagar (Garhwal), during 21-23 October 2018.
- International conference on “International conference on Material Research and Technology” held at Aggarwal College Ballabgarh, Haryana, during 10-11 July 2017.
- Second National Conference on “Radon Awareness and Detection in Natural Environment (RADNET-II)” held at Gurukul Kangri University Haridwar during 25-27 September 2017.
- International conference on “Radon in environment” held at Zakopani/Krakow, **Poland** during 9-14 may, 2009.
- Joint University Accelerator School (JUAS-2010), held at D’Archamps, **France** during 4 Jan - 6 February, 2010.
- Third International Geo-Hazards Research Symposium (IGRS-2012), held at H.N.B. Garhwal University Campus Badshahithaul, Tehri Garhwal, during 10-14 June 2012.
- School on X-ray Techniques held at Inter University Accelerator Center (Formerly NSC), New Delhi, 12- 16th June 2006.
- Twelfth National Symposium on Environment held at H.N.B.Garhwal University Campus Badshahithaul, Tehri Garhwal, during 5-7 June 2003.

- N.S.C. Acquaintance Programme on 10th October 2003 at H.N.B.Garhwal University Campus Badshahithaul, Tehri Garhwal, India.
- 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.
- 14th National Symposium on Solid State Nuclear Track Detector, AMU, Aligarh on 10-12, November, 2005.
- Awareness workshop on “The facilities of UGC-DAE Consortium for Scientific Research”, held at Kurukshetra University, India during 4-5 December 2006.
- Work shop on “Accelerator and low level radiation safety”, held at Inter University Accelerator Centre, New Delhi, on 26-27 April, 2007.
- 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.
- School on Optical properties of materials, held at Inter University Accelerator Center, New Delhi, 30th June to 2nd July 2008.
- Work shop on “Accelerator based research on polymers”, held at Inter University Accelerator Centre, New Delhi, on 25 August, 2008.
- Work shop on “Concept of physics: Popular lectures, Demons and Low cost Experiments”, held at Govt. P.G. College Gopeshwar, Chamoli, during 17-18 February 2013.
- Work shop on “The Physics and Mathematics of the Universe”, held at Gurukul Kangri Vishwavidyalaya, Haridwar during 11-13 March 2013.
- National symposium on “Mind Matter and Mathematics: A Dialogue”, held at H.N.B. Garhwal University Badshahithaul campus Tehri Garhwal during 12-14 March 2014.

(Uttarakhand), India

HOBBIES:

Playing cricket, walking, gardening and bird watching.

PERSONAL QUALITIES:

- Quick learning & Sharp problem solving skills.
- Self-starter with the ability to handle multiple priorities.
- Strong communication skill, well organized & have an excellent work ethics.

REFERENCES:

1. Dr. R C Ramola (rcramola@gmail.com)
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(SUBHASH CHANDRA)