




## Faculty Details proforma for DU Web-site

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Title	Dr.	First Name	Sanjay Kumar	Last Name	Chamoli	Photograph
Designation		Assistant professor				
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<b>Educational Qualifications</b>						
Degree		Institution			Year	
Ph.D.		Panjab University, Chandigarh / Inter University Accelerator Center, New Delhi <u>Thesis Topic</u> : The lifetime measurement of the excited nuclear states at high angular momentum in the mass region A = 170 - 190			2004	
M. Sc. (Physics)		H N B Garhwal University, Srinagar Garhwal, Uttarakhand			1992	
B. Sc.		H N B Garhwal University, Srinagar Garhwal, Uttarakhand			1988	
Any other qualification (B.Ed.)		H N B Garhwal University, Srinagar Garhwal, Uttarakhand			1993	
<b>Career Profile</b>						
1. From May 2010 as Assistant Professor at Department of Physics & Astrophysics, University of Delhi (North Campus), Delhi, India						
2. From July 2009 to May 2010 as Assistant Professor at Birla Institute of Technology and Science, Pilani, Rajasthan, India						
3. From October 2008 to July 2009, worked as Post-Doctoral Fellow in the Department of Nuclear Physics, Australian National University (ANU), Canberra, Australia						

<p>4. From February 2001 to October 2008 as Lecturer in Maharaj Singh (P.G.) College, Saharanpur, India</p> <p>5. From November 1998 to March 1999 as Lecturer in D. A. V. College , Sector -10, Chandigarh, India</p>						
<p><b>Administrative Assignments</b></p> <p>I am member of various committees of the department.</p>						
<p><b>Areas of Interest / Specialization</b></p> <p><b>Nuclear Physics (Experimental) ;</b></p> <ul style="list-style-type: none"> <li>- Gamma ray spectroscopy</li> <li>- Lifetimes measurements (RDM &amp; DSAM)</li> <li>- Nuclear g-factor measurement of excited nuclear states using the TDPAD technique, Transient Field technique and IPAC technique</li> </ul>						
<p><b>Subjects Taught</b></p> <p><u>Current Academic Assignments@ Delhi University, Delhi</u></p> <table border="0"> <tr> <td>1. Nuclear and Particle Physics (Core)</td> <td>M. Sc 1<sup>st</sup> Year</td> </tr> <tr> <td>2. Wave and Optics Lab (Core) -I</td> <td>M. Sc 1<sup>st</sup> Year</td> </tr> <tr> <td>3. Wave and Optics Lab (Core) -II</td> <td>M. Sc 1<sup>st</sup> Year</td> </tr> </table>	1. Nuclear and Particle Physics (Core)	M. Sc 1 <sup>st</sup> Year	2. Wave and Optics Lab (Core) -I	M. Sc 1 <sup>st</sup> Year	3. Wave and Optics Lab (Core) -II	M. Sc 1 <sup>st</sup> Year
1. Nuclear and Particle Physics (Core)	M. Sc 1 <sup>st</sup> Year					
2. Wave and Optics Lab (Core) -I	M. Sc 1 <sup>st</sup> Year					
3. Wave and Optics Lab (Core) -II	M. Sc 1 <sup>st</sup> Year					
<p><b>Research Guidance</b></p> <p>Three students working for their Ph.D., One student awarded Ph.D. degree.</p>						
<p><b>Publications</b></p> <p><b>Books :</b></p> <p>Title : <b>Nuclear Structure Study at High Spins</b></p> <p>Publisher : LAP Lambert Academic Publishing, Germany    Year of Publication : 2012</p> <p><b>E-content development:</b> Developed entire course material on the topic, “Nuclear and Particle Physics” for Master’s students under ePG -Pathshala program of Ministry of Human Resource and Development, Government of India. (Link : <a href="https://epgp.inflibnet.ac.in/ahl.php?csrno=28">https://epgp.inflibnet.ac.in/ahl.php?csrno=28</a>).</p> <p><b>Research Papers :</b></p> <p><b>(A) In Indexed / Peer Reviewed Journals (Last Five Years)</b></p> <ol style="list-style-type: none"> <li>1. K.Kapur, <b>S.K. Chamoli</b>, et al., Role of viscosity in fusion-fission dynamics via simultaneously measured neutron and alpha -particle multiplicities. Accepted for publication in <i>Physical Review C</i> (currently in press).</li> <li>2. Nidhi Puri, <b>S.K. Chamoli</b>, et al., Effect of Ytterbium Oxide Deposition on Microstructural and Electrical Properties of Thin Tantalum Foil. <i>Materials Letters</i> 253 (2019) 67 -70.</li> </ol>						

3. C.K. Gupta, **S.K. Chamoli**, et al., Novel technique of making thin target foil of high density material via rolling method. *AIP Conference Proceedings* 1962, 030013 (2018).
4. K.Kapur, **S.K. Chamoli**, et al., Fission time scale from pre-scission neutron and  $\alpha$  multiplicities in the  $^{16}\text{O} + ^{194}\text{Pt}$  reaction. *Physical Review C* 96, 054605 (2017).
5. K.Kapur, **S.K. Chamoli**, et al., Study of nuclear fission –fusion dynamics in  $^{16}\text{O} + ^{194}\text{Pt}$  reaction. *AIP Conference Proceedings* 1852, 080005 (2017).
6. **S.K. Chamoli**, et al., Investigating prolate-oblate shape inversion in Pt nuclei near  $A \sim 188$ . *Acta Physica Polonica B*, vol. 48, number 3, 337 (2017).
7. Aman Rohilla, **S.K. Chamoli**, et al., Lifetime measurements in shape transition nucleus  $^{188}\text{Pt}$ . *Euro Physics Journal A* 53, 64 (2017).
8. A. E. Stuchbery, **S.K. Chamoli** and T. Kibedi, “Particle-rotor versus particle-vibration features in g factors of  $^{111}\text{Cd}$  and  $^{113}\text{Cd}$ ”. *Physical Review C* 93, 031302 (R) (2016).
9. R.P. Singh, **S.K. Chamoli**, et al., “Lifetime measurements in the yrast band of gamma-soft nuclei  $^{131}\text{Ce}$  and  $^{133}\text{Pr}$ ”. *PARMANA Journal of Physics* 87 (1), 1-11 (2016).
10. Aman Rohilla, **S.K. Chamoli**, et al., “Fabrication of enriched  $^{174}\text{Yb}_2\text{O}_3$  thin targets on Carbon and Tantalum backings”. *Nuclear Instruments and Methods in Physics Research A* 797 (2015) 230-233.
11. C.K. Gupta, **S.K. Chamoli**, et al., “Fabrication of  $^{94}\text{Zr}$  thin target for Recoil Distance Doppler Shift Method of lifetime measurement”. *Nuclear Instruments and Methods in Physics Research A* 764 (2014) 273.

**(B) In Conferences (in last five years)**

1. **S.K.Chamoli**, et al., “Lifetime measurements in  $^{106}\text{Pd}$ ”, in the Accelerator User Workshop (AUC-66) at the Inter University Accelerator Center (IUAC), Delhi, India, 7<sup>th</sup> July 2019.
2. **S.K.Chamoli**, et al., “Exploring 2-phonon collectivity through gamma ray spectroscopy and lifetime measurements in  $^{146}\text{Gd}$  nucleus”, in the Accelerator User Workshop (AUC-66) at the Inter University Accelerator Center (IUAC), Delhi, India, 7<sup>th</sup> July 2019.
3. S.S. Tiwary, **S.K.Chamoli**, et al., “Parity assignments of a doublet band in  $^{139}\text{Pm}$ ”, in DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
4. K. Kapur, **S.K.Chamoli**, et al., “Fission time study for the fissioning nuclei  $^{212}\text{Rn}$  via neutron multiplicity measurements”, in DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
5. K. Rojeeta Devi, **S.K.Chamoli**, et al., “Transition probability ratios of dipole bands in  $^{129}\text{La}$ ”, in DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
6. **S.K.Chamoli**, et al., “Exploring nature of collectivity in  $^{167}\text{Lu}$  with lifetime measurements” in the Workshop on Recent Advances in Nuclear Structure Physics (RANSP2018), at the Yukawa Institute of Theoretical Physics, Kyoto University, Japan, Nov. 29 – Dec. 3, 2018.

7. **S.K.Chamoli**, et al., “g-factor measurements in nuclei” in the School on Experimental Techniques, at the Inter University Accelerator Center (IUAC), Delhi, India, 16<sup>th</sup> Nov. 2018.
8. **S.K.Chamoli**, et al., “Road to nuclear security education at the University of Delhi”, in the International Nuclear Security Education Network (INSEN) Annual Meeting 2018, at the International Atomic Energy Agency (IAEA) Headquarters in Vienna, Austria, 9<sup>th</sup> July 2018.
9. **S.K.Chamoli**, et al., “Lifetime measurement study of octupole deformation in neutron deficient nuclei in Xe-Cs-Ba region” in the Accelerator User Workshop (AUC-63) at the Inter University Accelerator Center (IUAC), Delhi, India, 18<sup>th</sup> Dec. 2017.
10. **S.K.Chamoli**, et al., “Lifetime measurements of high spin states in <sup>111</sup>In with INGA @ IUAC”, in the Workshop on Indian National Gamma Array (ingaws17) at the Inter University Accelerator Center, Delhi, India, 14 -15 Sept., 2017.
11. **S.K.Chamoli**, et al., “Shape transition in Pt nuclei”, at the International Conference of Nuclear Physics 2017, Chandigarh, India, 14- 18 March 2017.
12. **S.K.Chamoli**, et al., “Novel technique of making thin target foil of high density material via rolling method”, at INTDS 2016 Conference, Cape Town, South Africa, 13-17 Nov. 2016.
13. **S.K.Chamoli**, et al., “Shape transition in A ~ 190 nuclei; a study via lifetime measurement in <sup>188</sup>Pt”, at the Zakopane Conference on Nuclear Physics 2016, Zakopane, Poland, 28 Aug. - 4 Sept. 2016.
14. **S.K.Chamoli**, et al., “Shape transition in A ~ 190 nuclei; a study via lifetime measurement in <sup>188</sup>Pt”, at the XI Latin American Symposium of Nuclear Physics and Applications (LASNPA), Medellin, Colombia, 30 Nov.-4 Dec. 2015.
15. Aman Rohilla, **S.K.Chamoli**, et al., “Lifetime measurement in <sup>167</sup>Lu”, at the DAE Symposium on Nuclear Physics 2015, at the Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam (A.P.), India, 7-11 Dec. 2015. (DAE Proceeding Vol. 60, A126 (2015)).
16. C.K. Gupta, **S.K.Chamoli**, et al., “Lifetime measurement in <sup>103</sup>Pd”, at the DAE Symposium on Nuclear Physics 2015, at the Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam (A.P.), India, 7-11 Dec. 2015. (DAE Proceeding Vol. 60, A135 (2015)).
17. Aman Rohilla, **S.K.Chamoli**, et al., “Lifetime measurement in <sup>188</sup>Pt”, at the DAE Symposium on Nuclear Physics 2014, at the Banaras Hindu University, Varanasi, India, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, A114 (2014)).
18. Aman Rohilla, **S.K.Chamoli**, et al., “RDM Lifetime measurements in <sup>167</sup>Lu”, at the DAE Symposium on Nuclear Physics 2014, at the Banaras Hindu University, Varanasi, India, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, A116 (2014)).
19. Shivcharan Verma, **S.K.Chamoli**, et al., “Polarization measurements and evidence for octupole correlations in <sup>122</sup>Ba”, at DAE Symposium on Nuclear Physics 2014, Banaras Hindu University, Varanasi, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, A128 (2014)).

20. R.K. Gurjar, **S.K.Chamoli**, et al., "HPGe and clover gamma ray detector maintenance", at the DAE Symposium on Nuclear Physics 2014, Banaras Hindu University, Varanasi, India, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, G67 (2014)).
21. C.K. Gupta, **S.K.Chamoli**, et al., "Simultaneous making of two thin  $^{174}\text{Yb}$  targets on two different backings", at the DAE Symposium on Nuclear Physics 2014, Banaras Hindu University, Varanasi, India, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, G71 (2014)).
22. C.K. Gupta, **S.K.Chamoli**, et al., "Preparation of thin Gold foil via rolling method", at DAE Symposium on Nuclear Physics 2014, Banaras Hindu University, Varanasi, India, 7-12 Dec. 2014. (DAE Proceeding Vol. 59, G72 (2014)).
23. Aman Rohilla, **S.K.Chamoli**, et al., "RDM plunger setup with clover detectors", at DAE International Symposium on Nuclear Physics 2013, Bhabha Atomic Research Center, Mumbai, India, 2-6 Dec. 2013. (DAE Proceeding Vol. 58, G52 (2013)).
24. C.K. Gupta, **S.K.Chamoli**, et al., "Fabrication of  $^{94}\text{Zr}$  thin target for RDM lifetime Experiment", at DAE Symposium on Nuclear Physics 2013, Bhabha Atomic Research Center, Mumbai, India, 2-6 Dec. 2013. (DAE Proceeding Vol. 58, G43 (2013)).
25. Navneet Sahota, **S.K.Chamoli**, et al., "High spin structure in  $^{140}\text{Sm}$ ", at DAE Symposium on Nuclear Physics 2013, Bhabha Atomic Research Center, Mumbai, India, 2-6 Dec. 2013. (DAE Proceeding Vol. 58, A70 (2013)).

**(C) Invited Talks (last three years)**

1. Delivered a lecture on "Nuclear structure studies with lifetime measurements in nuclei of mass  $A = 160 - 190$  @ IUAC, Delhi" at the Advance Science Research Center (ASRC), Japan Atomic Energy Agency (JAEA), Tokai, Japan, 4<sup>th</sup> Dec. 2018.
2. Delivered a lecture on "Nuclear structure studies in mass region  $A = 160- 190$  with lifetime measurement" at the Department of Physics, University of Cologne, Germany, 16<sup>th</sup> July 2018.
3. Delivered a lecture on 'Facilities for Nuclear Physics Research in India; A status update' at the Institute of Modern Physics, Lanzhou, China, 19 June 2017.
4. Delivered two lectures on 'Nuclear Structure Studies with g-factor measurements' at the School on Experimental Techniques at the Inter University Accelerator Center, Delhi, 28 April 2016.
5. Delivered a lecture on "Shape evolution and shape transition in Pt nuclei with mass  $A \sim 190$ " in Workshop on Recent Trends in Nuclear Physics (RTNP) at the Inter University Accelerator Center (IUAC), Delhi, India, Sept. 14-15, 2015.
6. Delivered a lecture on "Complex structure in simple nuclei; an insight into collectivity in mass  $A \sim 100$  region" in Frontier in Gamm Ray Spectroscopy, (FIG15) Conference at Variable Energy Cyclotron Center (VECC), Kolkata on 19<sup>th</sup> Feb. 2015.

<p>7. Delivered a lecture on “study of lifetime and g- factor of pico-sec lifetime states with ancillary equipment” in Workshop on Ancillary equipment for Nuclear @IUAC at the Inter University Accelerator Center (IUAC) on 4<sup>th</sup> July 2013.</p> <p>8. Delivered a lecture on “Environmental issues and the importance of radiation effects ” in the ‘Refresher Course in Environmental Studies’ at the Department of Environmental Studies, University of Delhi, Delhi, India on 28 Jan. 2013.</p>
<p><b>Research Projects (Major Grants/Research Collaboration)</b></p>
<p><b>On-going Projects :</b></p> <ol style="list-style-type: none"> <li> <p><b>Project</b> “Lifetime measurement study of octupole deformation in neutron deficient nuclei in Xe-Cs-Ba region”</p> <p><b>Funding Agency :</b> Inter University Accelerator Center (IUAC), Delhi</p> <p><b>Duration :</b> 3 years (1<sup>st</sup> April 2018 – 31<sup>st</sup> March 2021)</p> </li> <li> <p><b>Project</b> “Search for quadrupole and octupole collectivity in nuclei of mass A ~ 150 region”</p> <p><b>Funding Agency :</b> Science and Engineering Research Board (SERB), Govt. of India.</p> <p><b>Duration :</b> 3 years (20<sup>th</sup> March 2019 – 19<sup>th</sup> March 2022)</p> </li> </ol>
<p><b>Awards and Distinctions</b></p> <ol style="list-style-type: none"> <li>Junior Research Fellowship of University Grants Commission, on clearing NET exam conducted by CSIR/UGC, India 1998.</li> <li>Feinberg Graduate School Postdoctoral Fellowship, Israel 2004.</li> <li>Postdoctoral Fellowship from Australian Research Council, Australia 2008.</li> <li>Visiting Fellow, Australian National University, Australia, July - December 2009.</li> <li>Nominated for Germany for 3 Months by the Indian National Science Academy (INSA) under Bilateral Exchange Program 2011.</li> <li>Nominated for China for 4 Weeks by the Indian National Science Academy (INSA) under Bilateral Exchange Program 2017.</li> </ol>
<p><b>Association With Professional Bodies</b></p> <p>Member of <b>International Nuclear Security Education Network (INSEN)</b> of the International Atomic Energy Agency (IAEA).</p>
<p><b>Other Activities</b></p> <p style="text-align: center;">None</p>

**Signature of Faculty Member**