




Faculty Details proforma for DU Web-site

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cc: director@ducc.du.ac.in)

Title	Prof.	First Name	Sanjay Kumar	Last Name	Chamoli	Photograph
Designation	Professor					
Address (Office)	M. Tech Nuclear Science Block, Department of Physics & Astrophysics University of Delhi (North Campus), Delhi - 110007					
Phone No FAX	+91 – 11 – 27667725, 9999062324 +91 - 11 - 27664418					
Address (Residence)	21/6 Cavalary Lines, University of Delhi , Delhi – 110007					
Phone No	+91 - 9999062324					
Email	skchamoli@physics.du.ac.in , cylab123@gmail.com					
Educational Qualifications						
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	
Career Profile						
1. From October 2019 as Professor in the Department of Physics & Astrophysics, University of Delhi (North Campus), Delhi, India						
2. From October 2016 – October 2019 as Associate Professor in the Department of Physics & Astrophysics, University of Delhi (North Campus), Delhi, India						
3. From May 2010 – October 2016 as Assistant Professor in the Department of Physics & Astrophysics, University of Delhi (North Campus), Delhi, India						

4. From July 2009 to May 2010 as Assistant Professor in the Birla Institute of Technology and Science, Pilani, Rajasthan, India
5. From October 2008 to July 2009, worked as Post-Doctoral Fellow in the Department of Nuclear Physics, Australian National University (ANU), Canberra, Australia
6. From February 2001 to October 2008 as Lecturer in Maharaj Singh (P.G.) College, Saharanpur, India
7. From November 1998 to March 1999 as Lecturer in D. A. V. College , Sector -10, Chandigarh, India

Administrative Assignments

I am/was a member of various committees of the University/Department/Institutes/College:

1. Since March 2021, Serving as **Chairman, Managing Committee** of the **International Guest House**, University of Delhi, Delhi.
2. Since March 2021, Serving as **University Representative** in the **Governing Body of Sri Aurobindo College**, University of Delhi, Delhi.
3. From August 2018 – August 2020, Served as **Member of Department Research Council (DRC)** of the Department of Physics & Astrophysics, University of Delhi, Delhi.
4. Since January 2017, Serving as **Member, Selection Committee** of the **Kishor Vaigyanik Protsahan Yojana (KVPY) Program** of the Department of Science and Technology, Government of India.
5. From March 2017 – October 2017, Served as **Deputy Proctor** in the **University of Delhi, Delhi**
6. Since February 2015, representing **Delhi University** as **Member** in the **International Nuclear Security Education Network (INSEN)** at the International Atomic Energy Agency (IAEA), Vienna, Austria.
7. **Coordinator and Content writer** for of e-contents of paper ‘**Nuclear and Particle Physics**’ under **ePG-Pathshala (Physics) Program** of Ministry of Human Resource and Development, Government of India.
8. **Convener** of ‘**Visitor Program 2013**’ of the Department of Physics and Astrophysics, University of Delhi, Delhi.
9. Since May 2010 served as **Member of various Department Committees** (e.g. Space, Committee, Executive committee, Library committee, Workshop Committee, etc.) of the Department of Physics & astrophysics, University of Delhi.
10. From July 2009 – May 2010, served as **Member of various Department Committees** of the Birla Institute of Technology and Science, Pilani, Rajasthan.
11. From February 2001 – December 2004, served as **Member of various College Committees** of the Maharaj Singh (P.G.) College, Saharanpur, U.P.
12. Served as **Member** of the **Organizing Committee** of various National Symposium/Conferences/ Meetings/ Workshops, etc.

Areas of Interest / Specialization

Nuclear Physics (Experimental) ;

- Gamma ray spectroscopy
- Lifetimes measurements (RDM & DSAM methods)
- Nuclear g-factor measurement of excited nuclear states using the TDPAD technique, Transient Field technique and IPAC technique

Subjects Taught

@ Maharaj Singh (P.G.) College, Saharanpur, Uttar Pradesh (Feb. 2001 – Oct. 2008)

Atomic & Nuclear Physics , Experimental Laboratory, Optics, Nuclear Physics

@ Birla Institute of Technology and Science, Pilani, Rajasthan (July 2009 – May 2010)

Applied Thermodynamics (Course Code : ME C132), Measurement Techniques - I (Course Code : PHY C201), Physics- II (Electrodynamics) (Course Code : PHY C391), Instrumentation and Methods of Analysis (Course Code : PHY C201)

@ Delhi University, Delhi (May 2010 – Till date)

Radiation Technology & Applications, Nuclear Measurement Laboratory – I, Nuclear Measurement Laboratory – II, Nuclear Physics Lab –I, Nuclear Physics Lab –II, Nuclear & Particle Physics (Core Paper), Advanced Nuclear Physics Lab –I, Advanced Nuclear Physics Lab –II, Advance Nuclear Physics –II, Wave and Optics Lab, Advanced Quantum Mechanics (Quantum – II)

Research Guidance

No. of Ph.D. students **Registered** : 04

No. of Ph.D. students **Awarded Degree** = 01 (Dr. Aman Rohilla, currently working as Postdoctoral fellow @ Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou, China)

No. of **M.Sc. Dissertation** thesis guidance = 02

Publications

Research Publications :

(A) In Indexed / Peer Reviewed Journals : (Total = 38)

In Last Five Years:

1. Anand Pandey, S.K. Chamoli, et al., "Fabrication of thin Nb target for lifetime measurement of short lived excited nuclear states". Published in *Nuclear Inst. And Methods in Physics Research A* 985 (2021) 164667.

2. Ravi Bhushan, **S.K. Chamoli**, et al., "Fabrication of ^{128}Te thin target for nuclear levels lifetime measurements". Published in *Nuclear Inst. And Methods in Physics Research A* 983 (2020) 164586.
3. S.S. Tiwari, **S.K. Chamoli**, et al., "Structure of positive parity states in ^{139}Pm ". Published in *Phys. Scr.* 95 (2020), 095304.
4. Aman Rohilla, **S.K. Chamoli**, et al., "Lifetime measurements in the yrast band of ^{167}Lu ". Published in *Physical Review C* 100, 024325 (2019).
5. K.Kapur, **S.K. Chamoli**, et al., "Role of viscosity in fusion-fission dynamics via simultaneously measured neutron and alpha -particle multiplicities". Published in *Physical Review C* 100, 014620 (2019).
6. Nidhi Puri, **S.K. Chamoli**, et al., "Effect of Ytterbium Oxide Deposition on Microstructural and Electrical Properties of Thin Tantalum Foil". Published in *Materials Letters* 253 (2019) 67 -70.
7. C.K. Gupta, **S.K. Chamoli**, et al., "Novel technique of making thin target foil of high density material via rolling method". Published in *AIP Conference Proceedings* 1962, 030013 (2018).
8. K.Kapur, **S.K. Chamoli**, et al., "Fission time scale from pre-scission neutron and α multiplicities in the $^{16}\text{O} + ^{194}\text{Pt}$ reaction". Published in *Physical Review C* 96, 054605 (2017).
9. K.Kapur, **S.K. Chamoli**, et al., "Study of nuclear fission –fusion dynamics in $^{16}\text{O} + ^{194}\text{Pt}$ reaction". Published in *AIP Conference Proceedings* 1852, 080005 (2017).
10. **S.K. Chamoli**, et al., "Investigating prolate-oblate shape inversion in Pt nuclei near $A \sim 188$ ". Published in *Acta Physica Polonica B*, vol. 48, number 3, 337 (2017).
11. Aman Rohilla, **S.K. Chamoli**, et al., "Lifetime measurements in shape transition nucleus ^{188}Pt ". Published in *Euro Physics Journal A* 53, 64 (2017).
12. A. E. Stuchbery, **S.K. Chamoli** and T. Kibedi, "Particle-rotor versus particle-vibration features in g factors of ^{111}Cd and ^{113}Cd ". Published in *Physical Review C* 93, 031302 (R) (2016).
13. R.P. Singh, **S.K. Chamoli**, et. al., "Lifetime measurements in the yrast band of gamma-soft nuclei ^{131}Ce and ^{133}Pr ". Published in *PARMANA Journal of Physics* 87 (1), 1-11 (2016).
14. Aman Rohilla, **S.K. Chamoli**, et al., "Fabrication of enriched $^{174}\text{Yb}_2\text{O}_3$ thin targets on Carbon and Tantalum backings". Published in *Nuclear Instruments and Methods in Physics Research A* 797 (2015) 230-233.

(B) In Conferences/Workshops/Symposia :
In Last Five Years:

(More than 80)

1. Anand Pandey, S.K.Chamoli, et al., "Study of octupole correlations in neutron deficient Xe nuclei with mass $A < 120$ ", in the DAE-BRNS Nuclear Physics Symposium at the Lucknow University, Lucknow, India, Dec. 23-27, 2019.
2. Anand Pandey, S.K.Chamoli, et al., "Fabrication of ^{93}Nb target on lead backing using cold rolling", in the DAE-BRNS Nuclear Physics Symposium at the Lucknow University, Lucknow, India, Dec. 23-27, 2019.
3. Ravi Bhushan, S.K.Chamoli, et al., "Lifetime measurements in the non-yrast band in ^{177}Re ", in the DAE-BRNS Nuclear Physics Symposium at the Lucknow University, Lucknow, India, Dec. 23-27, 2019.
4. C. Majumdar, S.K.Chamoli, et al., "Excited states in ^{145}Eu ", in the DAE-BRNS Nuclear Physics Symposium at the Lucknow University, Lucknow, India, Dec. 23-27, 2019.
5. S.S. Tiwary, S.K.Chamoli, et al., "Parity assignments of a doublet band in ^{139}Pm ", in the DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
6. K. Kapur, S.K.Chamoli, et al., "Fission time study for the fissioning nuclei ^{212}Rn via neutron multiplicity measurements", in the DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
7. K. Rojeeta Devi, S.K.Chamoli, et al., "Transition probability ratios of dipole bands in ^{129}La ", in the DAE-BRNS Nuclear Physics Symposium at Bhabha Atomic Research Center, Mumbai, India, Dec. 8-12, 2018.
8. K. Kapoor, S.K.Chamoli, et al., "Measurement of α -particle yield in ^{212}Rn nucleus to understand the fission dynamics", in the DAE-BRNS Nuclear Physics Symposium at Thapar Institute of Engineering and Technology, Patiala, Punjab, India, Dec. 20 -24, 2017.
9. C.K. Gupta, S.K.Chamoli, et al., "RDM Lifetime measurements in ^{100}Ru ", in the DAE-BRNS Nuclear Physics Symposium at the Saha Institute of Nuclear Physics, Kolkata, India, Dec. 5 -9, 2016.
10. K. Kapoor, S.K.Chamoli, et al., "Study of α -particle multiplicity in $^{16}\text{O} + ^{196}\text{Pt}$ fusion-fission reaction", in the DAE-BRNS Nuclear Physics Symposium at the Saha Institute of Nuclear Physics, Kolkata, India, Dec. 5 -9, 2016.
11. Aman Rohilla, S.K.Chamoli, et al., "Lifetime measurement in ^{167}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.
12. C.K. Gupta, S.K.Chamoli, et al., "Lifetime measurement in ^{103}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.

(C) Invited Talks in Conferences/Workshops/Symposia :
In Last Five Years:

(More than 60)

1. Delivered a lecture on “Exploring 2-phonon collectivity through RDM lifetime measurements in ^{146}Gd nucleus”, in the Accelerator User Workshop (AUC-67) at the Inter University Accelerator Center (IUAC), Delhi, India, 18th December 2019.
2. Delivered a lecture on “Exploring nuclear collectivity at low spins in ^{167}Lu nucleus”, in the 14th Asia Pacific Physics Conference (APPC2019), at Kuching, Sarawak, Malaysia, 20th November 2019.
3. Delivered a lecture on “Evolving nuclear shapes in $A \sim 165$ region ; a study via lifetime measurements”, in the International Conference on New Frontiers in Nuclear Physics 2019 (ICNFNP19), at the Banaras Hindu University, Varanasi, India, 16th October 2019.
4. Delivered a lecture on “Study of octupole correlations in nuclei of mass $A \sim 120$ with INGA@IUAC, Delhi”, in the Workshop on Physics with Indian National Gamma Array (INGAWS2019) at the Inter University Accelerator Center (IUAC), Delhi, India, Sept. 17, 2019.
5. Delivered a lecture on “Lifetime measurements in ^{106}Pd ”, in the Accelerator User Workshop (AUC-66) at the Inter University Accelerator Center (IUAC), Delhi, India, 7th July 2019.
6. Delivered a lecture on “Exploring 2-phonon collectivity through gamma ray spectroscopy and lifetime measurements in ^{146}Gd nucleus”, in the Accelerator User Workshop (AUC-66) at the Inter University Accelerator Center (IUAC), Delhi, India, 7th July 2019.
7. 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, 4th Dec. 2018.
8. Delivered a lecture on “Exploring nature of collectivity in ^{167}Lu with lifetime measurements” in the Workshop on Recent Advances in the Nuclear Structure Physics (RANSP2018), at the Yukawa Institute of Theoretical Physics, Kyoto University, Japan, Nov. 29 – Dec. 3, 2018.
9. Delivered a lecture on “g-factor measurements in nuclei” in the School on Experimental Techniques, at the Inter University Accelerator Center (IUAC), Delhi, India, 16th Nov. 2018.
10. 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, 16th July 2018.
11. Delivered a lecture on “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, 9th July 2018.
12. Delivered a lecture on “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, 18th Dec. 2017.

13. Delivered a lecture on “Lifetime measurements of high spin states in ^{111}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.
14. 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.
15. Delivered a lecture on “Shape transition in Pt nuclei”, at the International Conference of Nuclear Physics 2017, Chandigarh, India, 14- 18 March 2017.
16. Delivered a lecture on “Shape transition in $A \sim 190$ nuclei; a study via lifetime measurement in ^{188}Pt ”, at the Zakopane Conference on Nuclear Physics 2016, Zakopane, Poland, 28 Aug. - 4 Sept. 2016.
17. Delivered two lectures on ‘Nuclear Structure Studies with g-factor measurements’ at the School on Experimental Techniques at the Inter University Accelerator Center, Delhi, 26 - 28 April 2016.
18. Delivered a lecture on “Shape transition in $A \sim 190$ nuclei; a study via lifetime measurement in ^{188}Pt ”, at the XI Latin American Symposium of Nuclear Physics and Applications (LASNPA), Medellin, Colombia, 30 Nov.-4 Dec. 2015
19. 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.
20. 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 19th Feb. 2015.

Publications other than Research Papers :

(A) Books : (01)

Title : Nuclear Structure Study at High Spins

Publisher : LAP Lambert Academic Publishing, Germany Year of Publication : 2012

(B) E-content Development: 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 : <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=28>).

Research Projects (Major Grants/Research Collaboration)

(A) On-going Projects :

1. **Project** “Lifetime measurement study of octupole deformation in neutron deficient nuclei in Xe-Cs-Ba region”

Funding Agency : Inter University Accelerator Center (IUAC), Delhi

Duration : 3 years (1st April 2018 – 31st March 2021)

Project Cost : Rs. 10.11 Lacs

2. **Project** “Search for quadrupole and octupole collectivity in nuclei of mass $A \sim 150$ region”

Funding Agency : Science and Engineering Research Board (SERB), Govt. of India.

Duration : 3 years (20th March 2019 – 19th March 2022)

Project Cost : Rs. 23.14 Lacs

(B) Completed Projects :

1. **Project** “Nuclear structure studies at high spin in nuclei of mass region $A \sim 175$ ”

Funding Agency : Inter University Accelerator Center (IUAC), Delhi

Duration : 3 years (1st Jan. 2013 – 31st Dec. 2015)

Project Cost : Rs. 6.65 Lacs

2. **Project** “Search for exotic modes of vibration/rotations at high spins in triaxial deformed nuclei near mass 170”

Funding Agency : Science and Engineering Research Board (SERB), Govt. of India.

Duration : 3 years (21st May 2014 – 20th May 2017)

Project Cost : Rs. 15.84 Lacs

Awards and Distinctions

1. **Junior Research Fellowship of University Grants Commission**, on clearing NET/JRF exam conducted by CSIR/UGC, India (June 1997).
2. **Feinberg Graduate School Postdoctoral Fellowship @ Weizmann Institute of Sciences, Israel 2004.**
3. **Postdoctoral Fellowship from Australian Research Council @Australian National University, Australia 2007.**
4. **Visiting Fellow, Australian National University, Australia, July - December 2009.**
5. **Nominated for Germany as Visiting Scientist for 3 Months by the Indian National Science Academy (INSA) under Bilateral Exchange Program 2011.**
6. **Nominated for China as Visiting Scientist for 4 Weeks by the Indian National Science Academy (INSA) under Bilateral Exchange Program 2017.**

Association With Professional Bodies

1. Member of **International Nuclear Security Education Network (INSEN)** of the International Atomic Energy Agency (IAEA).
2. Lifetime membership of **Indian Physics Association**
3. Lifetime membership of **Indian Nuclear Society**
4. Lifetime membership of **Indian Science Congress Association**
5. Lifetime membership of **Indian Association of Physics Teachers**

Other Activities
None

Signature of Faculty Member