

Curriculum Vitae of PROFESSOR DR. RAJ K. GUPTA
Physics Department, Panjab University, Chandigarh-160014, India.
(Last updated: 18.07.2016)

Full Name: Raj Kumar Gupta

Date of Birth: June 18, 1938

Place of Birth/ Nationality: Narwana (Haryana), India./ Indian

Field of specialization: Theoretical Nuclear Physics, Quantum groups and algebra.

Present position: Professor Emeritus, Physics Department, Panjab University, Chandigarh-160014, India.

EDUCATION:

B.A. 1959 S.D. College, Ambala Cantt., India, First division and **distinction in Physics.**

B.Sc. Honours School 1961 Panjab University, Chandigarh, First division & **Third position in Merit List**

M.Sc. Honours School 1962 Panjab University, Chandigarh, First division and **2nd position in Merit list.**

Ph.D. 1967 (Thesis submitted in 1965) Panjab University, Chandigarh, India.

EXPERIENCE/ EMPLOYMENTS:

1962-65 Sr Scientific Asstt. in an Atomic Energy Research Scheme, Panjab University, Chandigarh, India.

1965-69 Post-doctoral Fellow of **National Research Council of Canada** at Toronto and Saskatoon .

1969-70 Pool Officer (CSIR), Panjab University, Chandigarh.

1970-77 Lecturer in Physics, Panjab University Regional Centre for P-G Studies, Rohtak (Haryana), India.

1977-78 Reader in Physics, Viswa Bharti, Santiniketan, West Bengal, August 16, 1977- August 13, 1978.

1978-80 Lecturer in Physics, Panjab University, Chandigarh.

1980-87 Reader in Physics, Panjab University, Chandigarh.

1987-98 Professor of Physics, Panjab University, Chandigarh.

(1993-95) UGC National Fellow (University Grants Commission of India), August 2, 1993- July 31, 1995.

1998-2000 Professor of Physics (Re-employed, for 3 years), Panjab University, Chandigarh.

2000-03 CSIR Scientist, Govt. of India, New Delhi, Awarded for **5 years**, Panjab University, Chandigarh.

2003-06 DST Sr. Research Scientist, Govt. of India, New Delhi, Awarded for **5 years**, Pb Uni., Chandigarh

2006-2015 DST Ramanna Fellow/ Emeritus Scientist, Govt. of India, New Delhi, w.e.f. July 2006,

Awarded for **3+3+3 years**, Panjab University, Chandigarh.

Nov. 22, 2015 onwards: Professor Emeritus, Physics Department, Panjab University, Chandigarh

Number of Ph.D. Thesis supervised: Twenty eight (completed)

Number of Ph.D. students registered/Enrolled for Ph.D. at present: Two

Number of M.Phil. Thesis supervised: Nine (This program is discontinued since 1980)

Number of Publications in International Research Journals: 248 (+2 submitted)

Numbers of Contributions at International + National Conferences, etc.: 210+236=446

Number of Review Articles/ Talks published: 63.

Books Published, edited and under preparation:

- i) Modern Physics, R.K. Gupta, 1982, ULP Publication, Panjab Univ., Chandigarh, 195pages.
- ii) Heavy Elements and Related New Phenomena, Editors: W. Greiner and R.K. Gupta, **World Sc. Publication**, Singapore 1999, Vols. I and II, 1147 pages.
- iii). *New Horizons of Physics Series: Physics of Particles, Nuclei and Materials- Recent Trends*, **Chief Editor of the Series and Editor** Raj K. Gupta, Narosa Publishers, New Delhi, 2002.

Research Projects Completed: Twenty two

(This also includes one funded by VW-Stiftung, and two funded by DFG, Germany)

Research Projects in operation: One (DST)

Research Projects completed with International Collaboration: VW-Foundation (one, for 5yrs.) and German Research Society -DFG (Two, each for one year), Germany.

Other activities: Founder Vice-President & then President, Alexander von Humboldt Academy/ Club, Chandigarh, Book Reviews, Guest Editorials and Popular article writings

VISITING POSITIONS HELD ABROAD:

1965-69 Post-doctoral Fellow of National Research Council of Canada, at Toronto and Saskatoon, Canada,

1971-73 (i)**UNESCO/IAEA Fellow**, Intern. Centre for Theoretical Physics (ICTP), Trieste, Italy, 15.4. - 15.7.1971;(ii)Visiting Scientist: (a) Research Inst. for Physics, Stockholm, Sweden, 1.5.1972-8.6.1972. (b) Niels Bohr Institute, Copenhagen, Denmark, 9.6.1972-21.6.1972.(c) ICTP, Trieste, Italy, 22.6.1972-7.7.1972; (iii)Participant, Nuclear Physics School, ICTP, Trieste, Italy, Oct.1973.

1973-75 Senior (Dozenten) Fellow, Alexander von Humboldt Stiftung at Institut fur Theoretische Physik, J.-W. Goethe Universitat, Frankfurt, West Germany, Dec.'73- Dec.'75.

1975-76 Guest Scientist : (a) ICTP, Trieste, Italy, 24.2.1975-17.3.1975. (b), Joint Institute for Nuclear Research (JINR), Dubna, USSR, 11.9.75-2.10.75; (c) Institut fur Theor. Physik, J.-W. Goethe Universitat, Frankfurt, West Germany, Jan.'76- Dec.'76. (d) JINR, Dubna, USSR, 15.6.76-15.7.76.

1978 Guest Scientist : (a) ICTP, Trieste; (b) Frankfurt Universitat, , West Germany, 11.2.1978-25.3.1978.

1980 Guest Scientist, ICTP, Trieste, Italy, 20.1.1980-2.3.1980.

1981-93 Associate Member, for six years by **IAEA/UNESCO** at Intern. Centre for Theoretical Physics (ICTP), Trieste, Italy: May 9-Aug. 8, 1981; June 5-Aug. 5, 1985;June 12-July 23, 1986; **Re-awarded** for another term of six years: May 28-July 12, 1988;May 21-Aug. 15, 1989: Dec. 3, 1992-Jan. 17, 1993.

1982-83 Guest Professor, Inst. fur Theor. Physik II, J-L Univ., Giessen, Germany, June 1982- June 1983.

1985-88 Guest visitor: (a) Rensselaer Polytechnic Institute, Troy, New York 12180, USA, May 20-28, 1985; (b) Inst. fur Theor. Physik II, J.-L. Uni., Giessen, Germany, Nov. 1986- June 1987; (c) Inst. fur Theor. Physik II, J.-L. Uni., Giessen, West Germany, July 12-24, 1988.

1990-91 Guest Professorship awarded by German Research Society (DFG: **Deutscher Forschungsgemeinschaft**) at J.-W. Goethe Universitat, Frankfurt, West Germany, Nov. 1, 1990- Oct.31, 1991.

1991-92 (a) **Guest Professorship of WE-Heraeus Stiftung** at J.-L. Universitat Giessen, Germany, Nov. 1, 1991- Jan. 31,1992; (b) Guest visitor, J.-L. Universitat Giessen, Germany, June 18-July 17, 1992.

1993 Revisit invitation, Alexander von Humboldt Stiftung, Germany, for three months of June, July and Sept. 1993, at Institut fur Theoretische Physik II, J.-L. Universitat, Giessen.

1994 (a) **Visiting Fellow (an Honorary title for a Visiting Professor)**, Department of Chemistry, The University, Newcastle upon Tyne, NE1 7RU, U.K., May 14- Sept. 10, 1994. (b) Guest Scientist, Institut fur Theoretische Physik II, J.-L. Universitat Giessen, Germany, Sept. 11- Oct. 15, 1994.

1995-97 Guest visitor: (a) J.-L. Universitat Giessen, and GSI, Darmstadt, Germany, June 20- July 23, 1995; (b) SUBATECH, Ecole des Mines, Nantes, France, May 30- June 20, 1996, (c) GSI, Darmstadt, Germany, June 21- July 5, 1996. (d) Centre de Recherches Nucleaires (CNR), Strasbourg, France, Oct. 15- Nov. 14, 1996; (e) Inst. fur Theor. Physik, J.-W. Goethe Uni., Frankfurt, Germany, Nov.15, 1996- Jan. 11, 1997; May 8- June 7, 1997.(f) Instituto di Fisica Generale Applicata, Universita degli Studi di Milano and INFN, Milano, Italy, June 10- July 6, 1997. (g) Inst. fur Theor.Physik, J.-W. Goethe Uni., Frankfurt, Germany, Nov. 24- Dec. 21, 1997; Also Guest Scientist (VW Project), J.-L. Unit Giessen, Germany. (h) VW Project, J.-L. Universitat Giessen, Germany, (one month), Dec. 22,1997- Jan. 10, 1998.

1998-99 (i) **Re-revisit invitation, Alexander von Humboldt Stiftung**, Inst. fur Theor. Physik, J.-W. Goethe Univ., Frankfurt, Germany, for five months of May 1- September 30, 1998; (ii) Guest Scientist (VW Project), Inst. fur Theor. Physik, J.-L. Univ. Giessen, Germany (a) Two and half month during May 1- Sept. 30, 1998. (b) Dec. 1,1998- Jan. 31, 1999. (c) June 7-July 18, 1999.(d) Sept. 20-Oct. 30, 1999. (iii) Guest Scientist, GSI, Darmstadt, Germany,

2000-04 (a) Guest Scientist (VW Project), Inst. fur Theor. Physik, J.-L. Uni.Giessen, Germany: (i) June 1- July 6, 2000, Extended VW Project (ii) Sept. 16-Nov. 7, 2001, (iii) Feb. 1-March 31, 2002; (iv) Aug. 1- Sept. 30, 2002, (v) Dec. 2002-March 2003. (b) Guest Scientist, GSI Darmstadt (Germany), Sept.-Nov. 2001; Aug.-Sept. 2002, June 2004 (May 30-June 17) (c) Guest Scientist, Vanderbilt University, Nashville (USA), one week during Sept.10-16, 2001. (d) Guest Professor, Institut de Recherches Subatomiques, UMR7500, IN2P3/ Universite` Louis Pasteur, Strasbourg (France): (i) March 2002;(ii) August 2002. (e) Seminar visit, Texas A&M University, June 2004.

2005-06 (a) **Re-revisit invitation, Alexander von Humboldt Stiftung**, Frankfurt Inst. for Advanced Studies (FIAS), Frankfurt Univ., , Germany, Feb.1-April 30, 2005.

(b) **Mercator Guest Professorship awarded by DFG** (Deutscher Forschungsgemeinschaft), at FIAS, Germany, July 1, 2005- June 30, 2006.

2006-08 (a) Seminar, Texas A&M University, College Station, Texas, USA, Feb. 2007. (b) Guest Scientist, GSI Darmstadt (Germany), during March 5-23, 2007. (c) Seminar visit, Univ. of Milano, Milan,

Italy, March 2007. (d) Seminar visit, Institut de Recherches Subatomiques, UMR7500, IN2P3/ Universite` Louis Pasteur, Strasbourg, France, March 2007. (e) Invitations : Texas A&M and GSI, Sept.-Oct. 2008. **2009-todate** (a) **Re-revisit invitation, Alexander von Humboldt Stiftung**, Frankfurt Inst. for Advanced Studies (FIAS), Frankfurt Univ., Germany, (i) Feb.-March 2009, (ii) May 2011.

AWARDS/PRIZES/HONOURS/Scholarships/Fellowships/Merits: National and International

1. **Best Paper Award** for Oral presentation of group work by **Sahila Chopra** at *ICNP2016: 18th International Conference on Nuclear Physics, held in Dubai during 8-9 May, 2016*, organized by World Academy of Science, Engineering and Technology. The paper entitled **“Non-coplanar Nuclei in Heavy-ion Reactions”** is published in the International Journal of Mathematical, Computational, Physical, Electrical and Computer Engineering.
2. Invited to be the **(Reviewer)** for Mathematical Methods in the Applied Sciences, Jan. 4, 2016.
3. Invited to be the **Lead Guest Editor** for a Special Issue on a topic of my choice in **Physics Research International**, 2015.
4. Appointed **Editorial Manager** for the online submission and peer review tracking system for **International Journal of Modern Physics E** on May 26, 2014.
4. Appointed **Editorial Manager** for online submission and peer review tracking system of **Naturwissenschaften Journal, Germany** on May 15, 2013.
5. **Life Time Achievement Award** by Organizing Committee of International Nuclear Physics Conference, held at Chitkara University, Brotiwala (HP), India, on 19.11.2012.
5. **Awarded Ramanna Fellowship** of Department of Sc. & Tech., Govt. of India, New Delhi, w.e.f. July 2006, for 3 years, re-newable for another 3 years, at Panjab University, Chandigarh, India.
6. **Awarded Mercator Professorship of DFG** (Deutscherforschungsgemeinschaft), Germany, 2005-2006, at Frankfurt Institute for Advanced Studies (FIAS), Frankfurt.
7. **Awarded CSIR Scientistships and DST Sr. Research Scientistships**, Govt. of India, New Delhi, for 1.3.2000 to 30.6.2003 & 1.7.2003- 30.6.2006, respectively, at Panjab Uni., Chandigarh.
8. **Volkswagen Foundation of Germany** awarded research project "Study of Fusion-Fission and related phenomena " for **5yrs**, upto March 2003, in collaboration with Prof. Werner Scheid, Giessen.
9. **National Society of Sciences Crafts & Creative Arts (NSCA) National Science Day Award**, Feb. 1996, for predicting Cold Fusion process for synthesizing new (super-heavy) elements in the laboratory. This work was then nominated **for the 1997 Noble Prize in Physics**.
10. Invited by **Institute of Physics Publishing (Adam Hilger Pub.)**, **Bristol, U.K.**, to write a book entitled "Cold Nuclear Phenomena: Fission, Fusion and Cluster Radioactivity"; under preparation.
11. Invited by **World Scientific Publications, Singapore**, edited a book entitled "Heavy Elements and Related New Phenomena", in collaboration with **Professor W. Greiner**, published in July 1999.
12. Invited by **Indian Association of Physics Teachers** to work as a Chief Editor of a New Series **New Horizons of Physics**, edited First Volume "Physics of Particles, Nuclei and Materials- Recent Trends", Narosa Publishing House Pvt. Ltd., New Delhi, 2002.
13. Awarded the **1993 UGC National Fellowship** for two years (1993-95).
14. Nominated for the **Third World Academy of Sciences (TWAS) Award** in Physics.
15. **Guest Professorship** awarded by **Deutscherforschungsgemeinschaft(DFG- the German Research Society)** for 1 year (1990-91) on nomination from the President of the University of Frankfurt.
16. **Guest Professorship** awarded by **WE-Heraeus Stiftung** for 3 months, 1991-92 at J.-L. Uni. Giessen.
17. **"Hari Om Ashram Prerit Shri Harivallabhdas Chunilal Shah Research Endowment" Prize and Gold Medal** for 1984-85 in Nuclear Physics.
18. **Associate Member**, ICTP, Trieste, Italy, awarded by IAEA and UNESCO for 12 yrs. during 1980-93.
19. **Senior (Dozenten) Fellow** of **Alexander von Humboldt Stiftung**, Germany, 1973-75 at the Inst. fur Theor. Physik, J.-W. Goethe Uni. Frankfurt. **Re-visit invitations** awarded for 3 months of June-Sept. 1993 at Giessen Univ.; May 1-Sept.30, 1998, Feb. 1.-April 30, 2005 FIAS, Frankfurt and February 1.-March 31, 2009 FIAS, Frankfurt, May 2011 FIAS, Frankfurt.
20. **IAEA/UNESCO Fellow**, Inter. Centre for Theore. Physics, Trieste, Italy, for 6 months during 1971.
21. Post-doctoral Research Fellow of National Research Council (NRC) of Canada, at University of Toronto (1965-68) and University of Saskatchewan, Saskatoon (1968-69).
22. Merit Listed in M.Sc. Hon's Sch'l 1962 (2nd position) and B.Sc. Hon' Sch'l 1961 (3rd position).

23. Panjab State Government Merit Scholarship, 1961-62.
24. Invited Review article by **Professor V.G. Soloviev** for Soviet J. Particles and Nucleus in 1977 and by **Professor W. Greiner** for International J. Modern Physics in 1993; honorarium received for both.
25. Guest Scientist, Ins. fur Theor. Physik, Uni. Frankfurt (1975-76), Uni.Giessen (1982-83, 1986-87).
26. (i) Shield as a Prize for Second Best Poster presentation at Silver Jubilee Physics Symposium 1981; (ii) Cash Prize and Commendation Certificate for Second Best Poster Presentation at Nuclear Physics Symposium 1999 held at Chandigarh, organised by the Department of Atomic Energy, Govt. of India.
27. Open invitation to visit Joint Institute of Nuclear Research (JINR), Dubna, USSR for a period up to one year during 1975 and again in 1984. Also, invited to recommend a research student/ collaborator for a Post-doctoral Fellowship during 1984.
28. Invited Lecturer at International Summer School of Nuclear Physics, Poina Brasov, Romania, during Aug. 26- Sept. 7, 1982 (World. Sc. Pub.), and at NATO Advanced Study Institute, "Frontier Topics in Nuclear Physics" at Predeal, Romania, during Aug. 24- Sept. 4, 1993 (Plenum Pub. Corp. 1994).
29. Member Working Group A, **National Committee** on Advanced High Energy Accelerator Facility in India, 1979-84.
30. Invited speaker at various National and International Conferences. Invited to Chair Sessions at some of these National and International Conferences. Also, Member Organizing Committee of various National Conferences and Summer Schools, and nationally organized International Conferences.
31. Recommended by **IAEA** to Govt. of India as a nominee to the Specialists Meeting on Nuclear Data in Sweden during September 1987.
32. Nominated for the **Fellowship of National Academy of Sciences**, 1990.

Ph.D. Thesis supervised:

1. **D.R. Saroha**, Theoretical study of the charge distribution in nuclear fission, Panjab University, Chandigarh, 1984.
2. **Neelam Malhotra** (nee Neelam Ummat), Theoretical studies of fusion and fission processes in heavy ion collisions, Panjab University, Chandigarh, 1984.
3. **R. Aroumougame**, Fragmentation theory for synthesizing new and heavy elements through heavy ion collisions, Panjab University, Chandigarh, 1987.
4. S.S. Malik, Collective mass fragmentation dynamics studied for nuclear clustering and other heavy ion reactions, Panjab University, Chandigarh, 1988.
5. **R.K. Puri**, Theory of cluster transfer resonances in heavy ion reactions and the related phenomena, Panjab University, Chandigarh, 1990.
6. **J.S. Batra**, A theoretical study of high spin states in even-even nuclei, PU, Chand., 1993.
7. **Sarbjit Singh**, Theory of cluster decay, production of new elements and the associated nuclear structure effects, Panjab University, Chandigarh, 1993.
8. **Satish Kumar**, A theoretical study of spontaneous fission and cluster emission phenomena in radioactive nuclei, Panjab University, Chandigarh, 1993.
9. **Dharam Bir**, A study of cluster decay and cold fission in heavy nuclei, Kurukshetra University, Kurukshetra (Joint supervision with Prof. H.C. Sharma), 1995.
10. **Ramandeep Singh Johal**, Complex q-deformed algebras of quantum groups $SU_q(2)$ and $SU_q(1,1)$ and related studies and applications, Panjab University Chandigarh, 1999.
11. **Manoj Kumar Sharma**, Theoretical study of heavy ion collisions at low and intermediate energies, Panjab University, Chandigarh, 1999.
12. **M. Balasubramaniam**, Exotic cluster decay studies of both stable and radioactive nuclei, Tirunelveli, Tamil Nadu (Jointly with Prof. N. Arunachalam), 2001.
13. **Sharda Dhaulta**, Cluster decay studies of deformed and super-deformed nuclei, PU, CHD, 2002.
14. **Rashmi Arora**, A study of nuclear dynamics in low energy heavy ion collisions, Panjab University, Chandigarh, (Jointly with Dr. R.K. Puri), 2003.
15. **Sushil Kumar**, Nuclear structure effects via cluster decays of various nuclei, PU, CHD., 2004.
16. **Rajesh Kumar Sharma**, Emission of complex fragments or clusters from the ground and excited states of various nuclei, Panjab University, Chandigarh, 2005.

17. **Makhan Singh Mehta**, Nuclear structure studies of exotic drip-line and superheavy nuclei using Relativistic Mean Field approach, Panjab University, Chandigarh (Jointly with Dr. S.K. Patra, IOP, Bhubaneswar), 2005.
18. **Monika Manhas**, Oriented nuclei and formation of super-heavy elements, PU, CHD., 2007.
19. **Dalip Singh**, Cluster dynamics in heavy ion collisions using the energy density formalism, Panjab University, Chandigarh, 2007.
20. **Narinder Kumar Dhiman**, Formation and decay of excited compound nuclei using microscopic theory, Panjab University, Chandigarh, (Jointly with Dr. R.K. Puri), 2008.
21. **Narinder Singh**, A theoretical study of fusion of nuclei using oriented collisions, PU, Chd., 2008.
22. **BirBikram Singh**, Study of the effects of nuclear structure and relative orientations in heavy ion reactions, Thapar University, Patiala, (Jointly with Dr. Manoj Kumar Sharma) 2009.
23. **Sham Kumar Arun**, Collective clusterization in the decay of hot and rotating compound nucleus, Panjab University, Chandigarh, 2010.
24. **Shefali Kanwar**, Nuclear reaction dynamics and related phenomena at low energies, Thapar University, Patiala, (Jointly with Dr. Manoj Kumar Sharma) 2010.
25. **Niyiti**, Decay of superheavy nuclei formed in collisions using deformed and oriented nuclei, Panjab University, Chandigarh, 2010.
26. **Raj Kumar**, Dynamics of heavy ion reactions using the energy density formalism, Panjab University, Chandigarh, 2011.
27. **Manie Bansal**, Study of fusion reactions using deformed and oriented nuclei, Panjab University, Chandigarh 2012.
28. **Arshdeep Kaur**, Nuclear Structure and Orientation Effects in the Decay of Hot and Rotating Compound Nuclei, Panjab University, Chandigarh. Enrolled on April 2, 2013; Jointly with Prof. Bivash R. Behera, submitted July 13, 2016.
29. **Sahila Chopra**, Study of Non-Compound Nucleus Contribution in Heavy and Superheavy Nuclear Systems formed in Heavy Ion Reactions. Enrolled on February 28, 2014, Jointly with Prof. Devinder Mehta.
30. **Hemdeep**, Enrolled on August 27, 2015, Jointly with Prof. Devinder Mehta.

**List of publications by Prof. Dr. Raj K. Gupta, during last 18 years (1998-todate)
(Since retirement in June 1998)**

A. International Journals:

1998:

1. Two parameter quantum deformation of $U(2) \supset U(1)$ dynamical symmetry and the vibrational spectra of diatomic molecules.
R.S. Johal and R.K. Gupta, Int. J. Mod. Phys. E **7** (1998) 553-557.
2. Cluster radioactivity and very asymmetric fission through quasi-molecular shapes.
G. Royer, R.K. Gupta and V.Yu. Denisov, Nucl. Phys. A **632** (1998) 275-284.
3. On the classical limit of the generalized q-deformed of $SU_q(2)$ and $SU_q(1,1)$ algebras.
R.S. Johal, V. Sahai and R.K. Gupta, Mod. Phys. Lett. A **13** (1998) 91-98.
4. Analytical description of heavy ion potentials for collisions between nuclei of same shell.
M.K. Sharma, R.K. Puri and R.K. Gupta, Eur. Phys. J. A **2** (1998) 69-75.
5. Squeezed states and 2-parameter quantum groups.
V. Sahai, R.S. Johal and R.K. Gupta, Mod. Phys. Lett. A **13** (1998) 887-891.
6. Isotopic dependence of fusion cross-sections – linear relationships.
R.K. Puri, M.K. Sharma and R.K. Gupta, Eur. Phys. J. A **3** (1998) 277-280.
7. Comment on Planck distribution of complex-q Boson gas.
R.S. Johal and R.K. Gupta, Mod. Phys. Lett. A **13** (1998) 1729-1735.
8. Non-perturbative coupled harmonic oscillators description of charge and mass correlations in fission yields of ^{236}U .
R.K. Gupta, S. Kumar, W. Scheid and W. Greiner,
J. Phys. G: Nucl. Part. Phys. **24** (1998) 2119-2132.

1999:

9. Stability and instability of nuclei in the mass region $A=68-82$ based on exotic cluster decay studies. R.K. Gupta, S. Dhaulta, R. Bonetti and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **25** (1999) 1089-1097.
10. A systematic study of superheavy nuclei for $Z=114$ and beyond, using the relativistic mean field approach. S.K. Patra, C.-L. Wu, C.R. Praharaaj and R.K. Gupta, *Nucl. Phys. A* **651** (1999) 117-139.
11. $SU_q(2)$ and superdeformed bands in nuclei. R.S. Johal and R.K. Gupta, *J. Phys. G: Nucl. Part. Phys.* **25** (1999) L43-L46.
12. On the absence of α -nucleus structure in two centre shell model. R.K. Gupta, M.K. Sharma, N.V. Antonenko and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **25** (1999) L47-L53.
13. Search for heavy-ion emission in ^{249}Cf decay. G. Ardisson, V. Barci, J.F. Le Du, D. Trubert, R. Bonetti, A. Guglielmetti and R.K. Gupta, *Phys. Rev. C* **60** (1999) 037301 (1-3).
14. Rare cold nuclear processes - A review and some new results. R.K. Gupta, *Prāmana J. Phys.* **53** (1999) 577-584.
15. Spin-density part of nucleus-nucleus interaction potential. R.K. Puri, R. Arora and R.K. Gupta, *Phys. Rev. C* **60** (1999) 054619 (1-8).
16. Heavy-ion emission in spontaneous decays of $^{249,252}\text{Cf}$ nuclei. M. Balasubramaniam and R.K. Gupta, *Phys. Rev. C* **60** (1999) 064316 (1-7).
17. Quantum group $SU_q(1,1)$ for complex q -deformation. R.S. Johal and R.K. Gupta, *Mod. Phys. Lett. A* **14** (1999) 2211-2214.

2000:

18. The halo structure of neutron-drip line nuclei: (neutron) cluster-core model. R.K. Gupta, M. Balasubramaniam, R.K. Puri and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **26** (2000) L23-L32.
19. ^{34}Si decay of ^{242}Cm nucleus. C. Mazzocchi, A. Guglielmetti, R. Bonetti and R.K. Gupta, *Phys. Rev. C* **61** (2000) 047304 (1-4).
20. α -nucleus structure in fusion-fission and cluster decay modes of ^{56}Ni formed in heavy-ion reactions. M.K. Sharma, R.K. Gupta and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **26** (2000) L45-L58.
21. Shell structure of superheavy nuclei. S.K. Patra, W. Greiner and R.K. Gupta, *J. Phys. G: Nucl. Part. Phys.* **26** (2000) L65-L73.
22. Analytical calculation of fusion cross-sections. R. Arora, R.K. Puri and R.K. Gupta, *Eur. Phys. J. A* **8** (2000) 103-114.
23. Cold fission versus exotic cluster-decay in $^{234,236,238}\text{U}$ nuclei. R.K. Gupta, D. Bir, M. Balasubramaniam and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **26** (2000) 1373-1388.
24. α -decay chain of the $^{289}114$ nucleus. S.K. Patra, C.-L. Wu, W. Greiner and R.K. Gupta, *J. Phys. G: Nucl. Part. Phys.* **26** (2000) 1569-1580.

2001:

25. Cold ^{86}Kr valley in superheavy $Z=104-120$ nuclei. R.K. Gupta, M. Balasubramaniam, G. Múnzenberg, W. Greiner and W. Scheid, *J. Phys. G: Nucl. Part. Phys.* **27** (2001) 867-881.
26. Super-heavy nuclei - cold synthesis and structure. R.K. Gupta, *Prāmana - J. Phys.* **57** (2001) 481-492.

2002:

27. Decay of excited $^{116}\text{Ba}^*$ formed in $^{58}\text{Ni}+^{58}\text{Ni}$ Reaction via the emission of intermediate mass fragments. R.K. Gupta, M. Balasubramaniam, C. Mazzocchi, M. La Commara and W. Scheid, *Phys. Rev. C* **65** (2002) 024601(1-5).
28. The cluster-core model for halo-structure of light nuclei at the drip lines. R.K. Gupta, S. Kumar, M. Balasubramaniam, G. Múnzenberg, and W. Scheid,

- J. Phys. G: Nucl. Part. Phys. **28** (2002) 699-712.
29. Multiple shape structures in $N=Z$ neutron deficient ^{72}Kr - ^{92}Pd nuclei.
S.K. Patra, B.K. Raj, M.S. Mehta and R.K. Gupta,
Phys. Rev. C **65** (2002) 054323 (1-7).
30. Structure effects in the region of super-heavy elements via the α -decay chain of $^{293}118$.
R.K. Gupta, S. Kumar, R. Kumar, M. Balasubramaniam, and W. Scheid,
J. Phys. G: Nucl. Part. Phys. **28** (2002) 2875-2884.
31. Systematic study of Bh isotopes in a relativistic mean field formalism.
M.S. Mehta, B.K. Raj, S.K. Patra and R.K. Gupta, Phys. Rev. C **66** (2002) 044317(1-11).

2003:

32. Collective clusterization in excited light nuclear systems.
R.K. Gupta, Acta Physica Hungarica (New Series) Heavy Ion Phys. **18** (2003) 347-352.
33. The formation and decay of super-heavy nuclei produced in ^{48}Ca -induced reactions.
S. Kumar, M. Balasubramaniam, R.K. Gupta, G. Múnzenberg and W. Scheid,
J. Phys. G: Nucl. Part. Phys. **29** (2003) 625-639.
34. Cluster-decay of hot ^{56}Ni formed in $^{32}\text{S}+^{24}\text{Mg}$ reaction.
R.K. Gupta, R. Kumar, N.K. Dhiman, M. Balasubramaniam, W. Scheid and C. Beck,
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2. (i) New deformed magicities via cluster radioactivity.
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3. Rare cold nuclear processes - A review and some new results.
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5. Halo structure of nuclei at Neutron-drip line.
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6. Cold synthesis of superheavy elements using ^{208}Pb , ^{48}Ca and other lighter beams.
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