



[Dr. Mamta Aggarwal](#)

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Educational Qualifications:

B.Sc(Hons)(Physics) : University of Delhi (1981-1984).

M.Sc (Physics) : University of Delhi (1984-1986).

Ph.D (Nuclear Physics): University of Madras (1993-2002).

Ph.D Thesis Title : "Study of Drip line nuclei in ground and excited states"

Research Experience:

Post – Doctoral research work in ' Nuclear Structure Physics (Theory) at Nuclear Science Center (now IUAC), Delhi (2002- 2005).

Tata Institute of Fundamental Research, Mumbai (2005 – 2008).

Since May 2008, Faculty and DST Woman Scientist at UM-DAE CBS, Mumbai University, Kalina Campus , Mumbai 400 098.

Current Research project:

DST Project entitled "Proton radioactivity in mass region $A = 80-120$ and its dependence on structural effects, temperature, spin and isospin"

Research Interests :

Exotic Nuclei and Neutron Halo

Nuclear States at extreme Isospin, Spin and Temperature

Deformations and shapes transitions

Shell effects at Drip lines, estimation of separation energies

Proton Radioactivity from Proton rich nuclei in ground state and at high Spin and Temperature

Nuclear Level density and Neutron Emission Spectrum

Hot Rotating nuclei, Statistical properties

Invited Talk

An invited talk was given at **GSI, Darmstadt, Germany (August 2008)**. Topic of the seminar: "**Proton radioactivity from excited and high spin states of drip line nuclei**"

List of Publications (Selected):

Angular momentum dependence of nuclear level density parameter

[Mamta Aggarwal](#) and S. Kailas

Phys. Rev. C 81, 047302 (2010)

Proton radioactivity and shape transitions in excited ^{94}Ag

[Mamta Aggarwal](#)

Phys. Lett. B (Communicated)

Deformation and shape Transitions in hot rotating Neutron deficient Te isotopes

[Mamta Aggarwal](#) and I. Mazumdar

Phys. Rev. C 80, 024322 (2009)

Search for Rare Shape Transition and GQR Decay in Hot Rotating ^{188}Os Nucleus
I Mazumdar, D. A. Gothe, G. Anil Kumar, **M. Aggarwal**, P. K. Joshi, R. Palit, and H. C. Jain
Acta Phys. Pol. B 40, 545 (2009)

Neutron Emission and Nuclear Level Density at High Spin
Mamta Aggarwal
Int. J. of Mod. Phys. E 17, 1091 (2008).

Search for rare shape transitions in hot rotating ^{188}Os Nucleus
I. Mazumdar, H. C. Jain, R. palit, P.K. Joshi, D.A. Gothe, and **Mamta Aggarwal**
Acta Physica Polonica B Vol. 38, No. 4, 1463(2007)

Two-Proton Radioactivity in Proton-rich fp Shell Nuclei at High Spin
Mamta Aggarwal
Physica Scripta T125, 178 (2006)

Hot Rotating fp shell Nuclei near Proton Drip,
Mamta Aggarwal
Phys. Rev. C69, 034602 (2004)

Neutron Emission Spectra of Excited $^{126-140}\text{Sn}$ Nuclei,
Mamta Aggarwal and M. Rajasekaran,
Int. J. of Mod. Phys. E13, 1239 (2004)

Proton Drip Line Nuclei around $Z=30$ to 40 ,
M. Rajasekaran and **Mamta Aggarwal** ,
Phys. Rev. C 58, 2743 (1998)

Neutron Separation Energies of Extremely Neutron Rich Excited Nuclei from $Z=30$ to 70 ,
M. Rajasekaran and **Mamta Aggarwal**,
Int. J. of Mod. Phys. E7, 389 (1998).

International Conferences

GDR Decay from Hot Rotating ^{188}Os Nucleus
I. Mazumdar, R. Palit, H. C. Jain, D. A. Gothe, P.K. Joshi and **Mamta Aggarwal**
"2nd International Conference on Collective Motion in Nuclei under Extreme Conditions, held
at St. Goar, Germany, June 20-23, 2006.

Search for rare shape transitions in hot rotating ^{188}Os Nucleus
I. Mazumdar, H. C. Jain, R. palit, P.K. Joshi, D.A. Gothe, and **Mamta Aggarwal**
"Zakopane Conference On Nuclear Physics "Trends in Nuclear Physics" held on Sep. 4-10, 2006,
at Zakopane, Poland.

2P Radioactivity in Proton Rich fp Shell Nuclei at High Spin
Mamta Aggarwal
International Conference on Finite Fermionic Systems, Nilsson
Model, 50 years, held at Lund, Sweden (2005)

Stability in unstable nuclei at proton drip line,

Mamta Aggarwal,

International Conference on Exotic nuclei and atomic masses, organized by
Oak Ridge National Laboratory, Georgia, USA , Vol. 4, 259(2004).