




Faculty Detail proforma or DU website

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|-------------------|----------------|---|--------------------|-----------|---------------|---|
| Title | Dr. Mr. | First Name | SAMIT KUMAR | Last Name | MANDAL |  |
| Designation | | Professor | | | | |
| Department | | Physics & Astrophysics | | | | |
| Address (Office) | | North Campus, University of Delhi, Delhi – 110 007 | | | | |
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| Subject | Institution | Year | Details |
|----------|--|-------------|---|
| Ph.D | Nuclear Science Centre, New Delhi | 1998 | Thesis topic: Investigation of Quasi Elastic Scattering around the barrier in a complex microscopic potential formalism |
| Pre-Ph.D | Nuclear Science Center (NSC), New Delhi | 1992 | Subjects: Accelerator Based Experimental Nuclear Physics |
| M.Sc | Sambalpur University | 1990 | Subjects: Nuclear Physics (Sp. Paper) |

| Career Profile | | | |
|---|---|---------------------------------|---------------------|
| Organisation / Institution | Designation | Duration | Role |
| Dept. Of Physics & Astrophysics, University of Delhi | Professor | 13th Jan. 2011 – till date | Teaching & Research |
| Dept. Of Physics & Astrophysics, University of Delhi | Associate Professor | 13th Jan. 2008-2011 | Teaching & Research |
| Dept. Of Physics & Astrophysics, University of Delhi | Reader | 13 th Jan. 2005-2008 | Teaching & Research |
| Gesellschaft für Schwerionenforschung mbH, Darmstadt, Germany | Guest Scientist | July 1999 – 31st Dec. 2004 | Research |
| Saha Institute of Nuclear Physics Kolkata | Research Associate | June 1998 – June 1999 | Research |
| Nuclear Science Center, New Delhi. | Project Assistant | Dec. 1997-May 1998 | Research |
| Nuclear Science Center, New Delhi | Junior Research Fellow of UGC & Senior Research Fellow of UGC | Nov. 1991 Nov. 1997 | Research |
| Birla Industrial and Technological Museum Calcutta | Educational Assistant | Nov.1987 – Oct.1988 | Trainee |

Research Interests / Specialization

- Experience with radioactive beam facility (projectile fragmentations and also ISOL type) and associated detectors systems.
- Involved in the RISING (Rare Isotope Spectroscopic INvestigation at GSI) and AGATA (Advanced GAMMA Tracking Array) projects.
- Design and fabrication of gas detectors. Knowledge about Silicon, CsI, different types of plastic and gas detectors for particle identification. Experience with NaI, BaF, germanium-clover, germanium-cluster and segmented clover detectors for gamma ray identification.
- Knowledge about thin film making & target preparations.
- Extensive knowledge about detector simulation, ion-optics simulations, pulse shape analysis of germanium detectors etc.
- Experience with Multi branch data acquisition system and analysis programs(viz, PAW, ROOT,Go4, LEA, CANDEL etc).

Physics Interest:

- Multi-Nucleon transfer reaction and coupling effect at and near barrier energies.
- Study of nuclear reaction dynamics using nuclear scattering, transfer, break-up and fusion reaction at low energy. Threshold anomaly, Coupled channel effects etc. }
- Momentum distribution and spectroscopy of loosely bound nuclei. (^8B , $^{20-24}\text{O}$ etc.)
- g-factor measurement at low and relativistic energies.
- Nuclear structure studies using relativistic Coulomb excitation technique for drip line nuclei.
- Octupole collectivity for neutron rich nuclei (viz. Ba and neutron deficit Nd nuclei).
- Triaxiality and chirality of proton rich nuclei (viz. Nd, Ba, Cs nuclei)
- Structure study using decay spectroscopy around mass 180 region (K-isomer)
- Study of exotic structure for nuclei around mass 80 using fragmentation of relativistic heavy-ions.

Teaching Experience (Subjects/Courses Taught)

- 2013-2014: 1. Advance Nuclear Physics: Experimental Technique -- 3rd Semester
2. Advance Nuclear Physics : Nuclear Structure & Reaction -- 4th Semester
3. Nuclear Physics Laboratory (Final) 3rd & 4th Semester
- 2014-2015: 1. Quantum Mechanics -II – 2nd Semester
2. Nuclear Physics Laboratory (Final) 3rd & 4th Semester
- 2015-2016: 1. Quantum Mechanics -II – 2nd Semester
2. Nuclear Physics Laboratory (Final) 3rd & 4th Semester
- 2016-2017: 1. Nuclear & Particle Physics – 1st Semester
2. Quantum Mechanics -II – 2nd Semester
3. Nuclear Physics Laboratory (Final) 4th Semester

Honors & Awards

1. Attended one international conferences with funding approved from D.S.T, New Delhi. The D.S.T. support is considered as a “Young scientist” award (1996).
2. **Member** of a high level committee appointed by GSI/ Federal Republic of Germany (year 2004) to visit India under the Indian Govt. (DST) invitation to set-up a collaboration for FAIR project (a mega science project at Germany).
3. **Visiting Fellow**: GSI, Darmstadt, Germany 28 Feb. 2005 – 8 March 2005
4. **Member** of the FAIR –CDR (Facility for Anti-proton Ion Research at GSI) committee appointed by DST-DAE 2006.
5. **Visiting Fellow**: GSI, Darmstadt, Germany May. 2006 – July 2006
6. **Nominated and selected for 3 month visit to South African University/Institute under Indo-South Africa**

- Education Exchange Programme (EEP)-2009 by UGC.
7. **Visiting Fellow:** GSI, Darmstadt, Germany June. 2010 – July 2010
 8. **Nominated and selected** for Indian National Science Academy (INSA) exchange program (2012) to visit Germany for 3 months.
 9. **Member** (2013 - 2014), Accelerator User Committee (AUC), Inter University Accelerator Center, New Delhi.
 10. **Nominated** for attending and represent Indian contributions to FAIR-NUSTAR project for NUSTAR week at Helsinki, Finland from 7-11 Oct. 2013 by Indo-FAIR Co-ordination Centre (IFCC) at Bose-Institute, the centre coordinating FAIR related activities in India under the guidance of the Department of Science and Technology and the Department of Atomic Energy, Government of India
 11. **Member (2012 – 2013 -)** Board of Studies for Nuclear Science and Technology, Amity University
 12. **Joint Secretary** (2014-): Indian Physics Association

Publications (LAST FIVE YEARS)

Books / Monographs Nil

| <u>Year of Publication</u> | <u>Title</u> | <u>Publisher</u> | <u>Co-Author</u> |
|----------------------------|--------------|------------------|------------------|
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In Indexed/ Peer Reviewed Journals (2012-2017)

1. *Relationship between and effect of inelastic excitations and transfer channels on sub-barrier fusion enhancement*
Khushboo, **S. Mandal** et al Physical Review C Phys. Rev. C 96, (2017) 014614, ISSN: 0556-2813/ Impact Factor: 3.146
2. *Engineering strain to achieve stable ^{92}Zr targets on carbon backing*
Khushboo, S.R. Abhilash, G.R. Umashathy, H. Duggal, D. Kabiraj, **S. Mandal**, Vacuum, Available online 19 August 2017, ISSN: 0042-207X/ Impact factor: 1.55
3. *Binary fragmentation based studies for the near super-heavy compound nucleus ^{256}Rf*
Meenu Thakur with **S. Mandal** et al., The European Physical Journal A 53, (2017) 133, ISSN: 1434-6001 and 1434-601X/ Impact Factor: 2.373
4. *Influence of positive q-value neutron transfer coupling on fusion enhancement in $^{28}\text{Si} + ^{154}\text{Sm}$ reaction.*
G Kaur with **S. Mandal** et al., Acta Physica Polonica B 48 (2017) 619 ISSN: 0587-4254/ Impact Factor: 0.9
5. *Magnetic rotation phenomenon in the dipole ($\Delta I=1$) bands of transitional strontium (Sr) isotopes near $N=50$ shell closure*
N Kumar, S Kumar, **SK Mandal** et al., The European Physical Journal A 53 (2017), 25, ISSN: 1434-6001 & 1434-601X / Impact Factor: 2.373
6. *Effect of coupling in the $^{28}\text{Si} + ^{154}\text{Sm}$ reaction studied by quasi-elastic scattering*

- G Kaur with **S. Mandal** et al *Physical Review C* 94 (2016) 034613 ISSN: 0556-2813/
Impact Factor: 3.146
7. *Polarization measurements and high-spin states in $^{86}_{38}\text{Sr}_{48}$*
N Kumar, with **S Mandal**, et al., *Nuclear Physics A* 955 (2016) 1, ISSN: 0375-9474/
Impact Factor: 1.258
 8. *Measurement of quasi-elastic scattering: to probe $^{28}\text{Si} + ^{154}\text{Sm}$ reaction*
G Kaur with **S. Mandal** et al *Acta Physica Polonica B*, 47 (2016) 847, ISSN: 0587-4254/
Impact Factor: 0.9
 9. *Barrier distribution from $^{28}\text{Si} + ^{154}\text{Sm}$ quasielastic scattering: Coupling effects in the fusion process*
G Kaur with **S. Mandal** et al., *Eur. Phys. Journal: Web of Conferences* 117 (2016) 08025
ISSN: 2100-014X
 10. *Negative-parity high-spin states and a possible magnetic rotation band in $^{135}_{59}\text{Pr}_{76}$*
Ritika Garg with **S. Mandal** et al, *Physical Review C* 92 (2015) 054325, ISSN: 0556-2813/
Impact Factor: 3.881
 11. *Study of nuclear structure of $^{76-86}\text{Sr}$ isotopes in the pn Interacting*
M. Saxna, J Gupta and **S Mandal**, *Physica Scripta* 90 (2015) 085303 ISSN: 0031-8949 /
Impact Factor: 1.296
 12. *Isomeric Ratios in ^{206}Hg*
T. Alexander with **S. Mandal** et al *Acta Physica Polonica B* 46 (2015) 601 ISSN: 0587-
4254/ Impact Factor: 0.9
 13. *Probing nuclear dissipation via evaporation residue excitation functions for the $^{16,18}\text{O} + ^{198}\text{Pt}$ reactions*
R Sandal with **S. Mandal** et al., accept for publication in *Physical Review C* 91 (2015)
044621 ISSN: 0556-2813/ Impact Factor: 3.881
 14. *Fabrication of self-supporting targets of lead ($^{206,208}\text{Pb}$) using evaporation technique*
S Goyal, **S Mandal** et al., *Nuclear Instruments and Methods in Physics Research A*, 777
(2015) 70 ISSN: 0168-9002/ Impact Factor: 1.316
 15. *Effect of shell structure on neutron multiplicity of fissioning systems $^{220,222,224}\text{Th}$ nuclei*
S Goyal, **S Mandal** et al., *Eur. Phys. Journal: Web of Conferences* 86 (2015) 00013 ISSN
(Electronic Edition): 2100-014X
 16. *Neutron detector array at IUAC: Design features and instrumentation developments*
P Sugathan with **S Mandal** et al., *Pramana* 83 (2014) 807 ISSN: 0304-4289/ Impact
Factor: 0.72
 17. *Isomeric decay spectroscopy of the ^{217}Bi isotope*
A. Gottardo with **S Mandal** et al. *Physical Review C* 90 (2014)034317 ISSN: 0556-2813/

Impact Factor: 3.881

18. *Study of nuclear structure of $^{76-86}\text{Sr}$ isotopes in the pn Interacting*
M. Saxna, J Gupta and **S Mandal**, submitted to *Physica Scripta* (2015) ISSN: 0031-8949 / Impact Factor: 1.296
19. *Probing nuclear dissipation via evaporation residue excitation functions for the $^{16,18}\text{O} + ^{198}\text{Pt}$ reactions*
R Sandal with **S. Mandal** et al., accept for publication in *Physical Review C* (2015) ISSN: 0556-2813/ Impact Factor: 3.881
20. *Fabrication of self-supporting targets of lead (206,208 Pb) using evaporation technique*
S Goyal, **S Mandal** et al., *Nuclear Instruments and Methods in Physics Research A*, 777, 70 (2015), ISSN: 0168-9002/ Impact Factor: 1.316
21. *Effect of shell structure on neutron multiplicity of fissioning systems $^{220,222,224}\text{Th}$ nuclei*
S Goyal, **S Mandal** et al., *Eur. Phys. Journal: Web of Conferences* 86, 00013 (2015) ISSN (Electronic Edition): 2100-014X
22. *Neutron detector array at IUAC: Design features and instrumentation developments*
P Sugathan with **S Mandal** et al., *Pramana* 83 (5), 807 (2014) ISSN: 0304-4289/ Impact Factor: 0.72
23. *Isomeric decay spectroscopy of the ^{217}Bi isotope*
A. Gottardo with **S Mandal** et al. *Physical Review C* 90, 034317 (2014) ISSN: 0556-2813/ Impact Factor: 3.881
24. *Rotational behavior of $^{120, 122, 124}\text{Te}$*
M. Saxna with **S Mandal et al.** *Physical Review C* 90 (2), 024316 (2014) ISSN: 0556-2813/ Impact Factor: 3.881
25. *High spin band structure of $_{38}^{85}\text{Sr}_{47}$*
S. Kumar **S Mandal et al.** *Physical Review C* 90 (2), 024315 (2014) ISSN: 0556-2813/ Impact Factor: 3.881
26. *National Array of Neutron Detectors (NAND): A versatile tool for nuclear reaction studies*
KS Golda, with **S. Mandal** et al., *Nuclear Instruments and Methods in Physics Research A*, 763, 58 (2014), ISSN: 0168-9002/ Impact Factor: 1.316
27. *Excited states in the neutron-rich nucleus F^{25}*
Z Vajta with **S Mandal et al.**, *Physical Review C* 89, 054323(2014) ISSN: 0556-2813/ Impact Factor: 3.881
28. *β -decay studies of neutron-rich Tl, Pb, and Bi isotopes.*
Al. Morales with **S Mandal et al.**, *Physical Review C* 89, 014324 (2014) ISSN: 0556-2813/ Impact Factor: 3.881
29. *Pulse Shape Analysis of a twofold clover detector with an EMD based new algorithm: A Comparison.*
Davinder Siwal, **S. Mandal** et al., *Nuclear Instruments and Methods in Physics Research A*, 741, 108(2014), ISSN: 0168-9002/ Impact Factor: 1.316

30. *Detector system for the study of low energy heavy ion reactions using kinematic coincidence technique.*
A. Jhingan with **S. Mandal** et al., *Nuclear Instruments and Methods in Physics Research A* 745, 106 (2014) ISSN: 0168-9002/ Impact Factor: 1.316
31. Exotic decay of hot rotating nuclei near proton drip line
J Ray with **S. Mandal** et al., *Eur. Phys. Journal : Web of Conferences* 66, 02089 (2014) ISSN (Electronic Edition): 2100-014X
32. New Isomers in the Neutron-Rich Region Beyond ^{208}Pb
A Gottardo with **S. Mandal** et al., *Eur. Phys. Journal : Web of Conferences* 66, 02043 (2014) ISSN (Electronic Edition): 2100-014X
33. Effect of N/Z in pre-scission neutron multiplicity for $^{16,18}\text{O} + ^{194,198}\text{Pt}$ systems
R Sandal with **S. Mandal** et al., *Eur. Phys. Journal : Web of Conferences* 66, 03006 (2014)) ISSN (Electronic Edition): 2100-014X
34. *New μs isomers in the neutron-rich ^{210}Hg nucleus.*
A Gottardo with **S Mandal** et al., *Physics Letters B* 725 (4), 292-296, (2013), ISSN: 0370-2693/ Impact Factor: 6.019
35. *A new approach of denoising the regular and chaotic signals using Empirical Mode Decomposition: Comparison and application.*
Davinder Siwal, Vinita Suyal, Awadhesh Prasad, **S Mandal**, R Singh, *Review of Scientific Instruments* 84 (7), 075117, (2013), ISSN: 0034-6748/ Impact Factor: 1.584
36. *Erratum: Effect of N/Z in pre-scission neutron multiplicity for $^{16,18}\text{O} + ^{194,198}\text{Pt}$ systems [Phys. Rev. C 87, 014604 (2013)]*
Rohit Sandal with **S Mandal et al.**, *Phys. Rev. C* **87**, 069901(2013) , ISSN: 0556-2813/ Impact Factor: 3.881
37. *High spin states in $_{57}^{135}\text{La}_{78}$.*
Ritika Garg with **S Mandal et al.**, *Physical Review C* 87 (3), 034317, (2013), ISSN: 0556-2813/ Impact Factor: 3.881
38. *Direct Observation of Long-Lived Isomers in ^{212}Bi .*
L Chen with **S Mandal** et al., *Physical Review Letters* 110 (12), 122502, (2013), ISSN: 0031-9007/ Impact Factor: 7.94
39. *Core-coupled states and split proton-neutron quasiparticle multiplets in $^{122-126}\text{Ag}$.*
S Lalkovski with **S Mandal** et al., *Physical Review C* 87 (3), 034308, (2013), ISSN: 0556-2813/ Impact Factor: 3.477
40. *Magnetic rotation (MR) band-crossing at high spin states: Role of nucleons in this crossing in $N=78$ odd-Z isotones.*
Suresh Kumar, Ritika Garg, **Samit Kumar Mandal**, *Journal of Physics: Conference Series* 413 (1), 012034, (2013), ISSN: 1742-6588/ Impact Factor: NA
41. *Effect of N/Z in pre-scission neutron multiplicity for $^{16,18}\text{O} + ^{194,198}\text{Pt}$ systems.*
Rohit Sandal with **S Mandal** et al., *Physical Review C* 87 (1), 014604, (2013), ISSN: 0556-2813/ Impact Factor: 3.477

42. *New Isomers in the Full Seniority Scheme of Neutron-Rich Lead Isotopes: The Role of Effective Three-Body Forces.*
A Gottardo with **S Mandal** et al., *Physical Review Letters* 109(16), 162502, (2012), ISSN: 0031-9007/ Impact Factor: 7.328
43. *β decay of ^{102}Y produced in projectile fission of ^{238}U .*
A.M Bruce with **S Mandal** et al., *Journal of Physics: Conference Series* 381 (1), 012053, (2012), ISSN: 1742-6588/ Impact Factor: NA
44. **Title of Paper:** *First measurement of beta decay half-lives in neutron-rich Tl and Bi isotopes.*
G Benzoni with **S Mandalet** al., *Physics Letters B* 715 (4), 293-297, (2012), ISSN: 0370-2693/ Impact Factor: 4.569
45. *Measurements and coupled reaction channels analysis of one-and two-proton transfer reactions for the $^{28}\text{Si} + ^{90,94}\text{Zr}$ systems.*
Sunil Kalkal, **S Mandal** et al., *Physical Review C* 85 (3), 034606, (2012), ISSN: 0556-2813/ Impact Factor: 3.477
46. *New results on mass measurements of stored neutron-rich nuclides in the element range from Pt to U with the FRS-ESR facility at 360–400 MeV/u.*
L Chen with **S Mandal** et al., *Nuclear Physics A* 882, 71-89, (2012), ISSN: 0375-9474/ Impact Factor: 1.706

Articles

Conference Presentations

((only Invited Talk (2012-2017))

- Title of the Presentation:** *Multi-nucleon transfer and their effect on the reaction mechanism near Coulomb barrier*
International Conference In Nuclear Physics With Energetic Heavy Ion Beams"
Department of Physics, Panjab University, Chandigarh on 15 - 18 March, 2017
- A new Generation Gamma Detector Array: Gamma ray Tracking and Pulse Shape Analysis*
National Conference on Nuclear and Accelerator Physics (NCNAP-2016), Centre for Applied Physics Central University of Jharkhand, Ranchi, October 4-6, 2016
- Title of the Presentation:** *New Generation Gamma-ray Detector Array : Gamma Ray Tracking & Pulse Shape analysis*
School on experimental techniques in gamma-ray spectroscopy, 25 - 29 April, 2016, Inter University Accelerator Centre, New Delhi
- Title of the Presentation:** *Dynamical effects in fusion fission reaction mechanism for mass above 200*
Workshop on Fission studies using Neutron Detector Array & GPSC facility, 28-29 March 2016, Inter University Accelerator Centre, New Delhi
- Title of the Presentation:** *Multi-neutrons transfer and their effect on the mechanism of near barrier fusion reaction*
National Conference on Recent Trends in Nuclear Physics" to be held during 15-16 February, 2016, Aligarh Muslim University, Aligarh

6. *NuSTAR – DEGAS and Indian Participation*
Recent Trends in Nuclear structure and its Implication in Astrophysics, 4-8, January 2016, organised by TIFR, Mumbai & Institute of Physics Bhubaneswar at Hotel Blue Lily, Puri
7. **Title of the Presentation:** *Femto Physics & Challenges: Exotic nuclei spectroscopy*
Recent Trends of Research in Basic Sciences, 27th Oct. 2015, Knowledge Consortium of Gujarat, Ahmedabad.
8. **Title of the Presentation:** *Multi-nucleon transfer and their effect on the reaction mechanism near Coulomb barrier*
Workshop on "Recent trends in Nuclear physics, Sep. 14-15, 2015, Inter University Accelerator Centre, New Delhi
9. **Title of the Presentation:** *A new generation Gamma ray detector array*
Seminar Programme on "Recent Advances in Accelerators and Detector Technology for Nuclear Science" 20th March 2015, Panjab University Chandigarh.
10. **Title of the Presentation:** *Multinucleon transfer reactions around the Coulomb Barrier and their effect on the fusion dynamic*
DAE Symposium on Nuclear Physics, 8th-12th December 2014, Banaras Hindu University, Varanasi
11. **Title of the Presentation:** *Inflight spectroscopy of exotic isotopes (3 lectures)*
DST-SERC school on Nuclear Structure at High Angular Momentum and Isospin, October 5 – 25, 2014, Tata Institute of Fundamental Research, Mumbai
12. **Title of the Presentation:** *Femto Physics & Challenges: Exotic nuclei spectroscopy*
Refresher course in Physics 26th September 2014 Academic Staff College, Jawaharlal Nehru University, New Delhi
13. **Title of the Presentation:** *Spectroscopy of the exotic nuclei near the r-process waiting point*
Refresher course in Physics 26th September 2014 Academic Staff College, Jawaharlal Nehru University, New Delhi
14. **Title of the Presentation:** *Nuclear Reaction (3 lectures)*
Winter School on Accelerator, Nuclear and Particle Physics, March 29, 2014 to April 04, 2014 Physics Department, Banaras Hindu University, Varanasi
15. **Title of the Presentation:** *Transfer Reaction*
FUSION14 (Satellite event) A two day school on Nuclear reactions around the Coulomb barrier, February 21-22, 2014, Inter University Accelerator Centre, New Delhi.
16. **Title of the Presentation:** *Future INGA*
INGA-PICC meeting 17-18 February, 2014, VECC, Kolkata.
17. **Title of the Presentation:** Multi-nucleon transfer: a probe to investigate the reaction mechanism around the barrier.
India-UK Seminar in Nuclear Physics at *ISOLDE*, 22–24 January 2014, Department of Physics, Panjab University, Chandigarh.
18. **Title of the Presentation:** *DEGAS Road Map.*
NuSTAR WEEK 2013, 7th -11th October 2013, University of Helsinki, Helsinki, Finland
19. **Title of the Presentation:** *Future INGA.*
Indian National Gamma Array Meeting, March 9-11, 2013, Tata Institute of Fundamental Research, Mumbai, India
20. **Title of the Presentation:** *Development of a transient field based g-factor set-up.*
Indian National Gamma Array Meeting, March 9-11, 2013, Tata Institute of Fundamental

Research, Mumbai, India

21. **Title of the Presentation:** *Spectroscopy of the exotic nuclei near the r-process waiting point.*
National Conference on 'Nuclear Dynamics and Nuclear Astrophysics, February 5-6, 2013, University of Calcutta, Kolkata.
22. **Title of the Presentation:** *Experiments & Challenges: Search of Needles in the Haystack.*
Department of Physics, Jammu University, Jammu, 19th July 2013
23. **Title of the Presentation:** *Effect of superfluity and few nucleon rearrangement collisions near mass 100 region.*
Workshop on Science with rare ion Beams (SCRIBE) 2012, 7th -9th November, Variable Energy Cyclotron Centre (VECC), Kolkata.
24. **Title of the Presentation:** *Tracking Detectors for Low energy Branch.*
"NuSTAR WEEK 2012", 8-12 October 2012, Variable Energy Cyclotron Centre, Kolkata
25. **Title of the Presentation:** *A new approach for signal enhancement and its application to Pulse Shape Analysis.*
Technische Universität Darmstadt, Germany, 18th September 2012
26. **Title of the Presentation:** *Pulse shape analysis of a segmented Germanium detector and a new technique for noise filtration.*
Le Grand Accélérateur National d'Ions Lourds (GANIL), Caen, France 11th September 2012
27. **Title of the Presentation:** *Multi-nucleon transfer: a probe to investigate the reaction mechanism around Coulomb barrier.*
International workshop on 'Future plan with radioactive beam' from April 16 - 18, 2012, Saha Institute of Nuclear Physics, Kolkata
28. **Title of the Presentation:** *Multi-nucleon transfer and their effect on the mechanism of near barrier fusion reaction.*
Bhabha Atomic Research Centre, Trombay, Mumbai, 15th March 2012
29. **Title of the Presentation:** *Pulse shape analysis of Ge-detectors : A new technique for noise filtration.*
International conference on **Frontier In Gamma Spectroscopy – FIG12**, from March 5 to 7, 2012, Inter-University Accelerator Centre, New Delhi

International/National Conferences, Workshops (2012-2016 only) :

International:

1. Pulse shape analysis of a two fold clover detector with empirical mode decomposition based algorithm
Davinder Siwal, S. Mandal et al., AIP Conference Proceedings 1609 (2014) 25 ISSN: 0094-243X
2. Dipole bands in high spin states of ${}_{57}^{135}\text{La}_{78}$
Ritika Garg with S. Mandal et al., AIP Conference Proceedings 1609 (2014) 125 ISSN: 0094-243X
3. Effect of fissility in fission time scales for O+ Pt systems

R Sandal with **S. Mandal** et al., AIP Conference Proceedings 1524 (2013) 167 ISSN: 0094-243X

4. Development of EMD based signal improvement technique and its application to pulse shape analysis
D Siwal, V Suyal, A Prasad, **S Mandal**, R Singh, AIP Conference Proceedings 1524 (2013) 271
ISSN: 0094-243X
5. Unusual rotational behaviour of $^{120,122,124}\text{Te}$ nuclei
M. Saxena with **S. Mandal** et al., Proceeding of International Symposium on Nuclear Physics, 58
(2013) 110 ISBN: 81-8372-076-5
6. Compton imaging with a two fold clover HPGe detector
D Siwal, R Palit and **S.Mandal**, Proceeding of International Symposium on Nuclear Physics 58
(2013) 892 ISBN: 81-8372-076-5
7. Probing dissipation effects via evaporation residue excitation function for the $^{16,18}\text{O} + ^{198}\text{Pt}$ reactions
R Sandal with **S. Mandal** et al., Proceeding of International Symposium on Nuclear Physics 58
(2013) 528 ISBN: 81-8372-076-5
8. Mass distribution studies in the fission of ^{216}Ra compound system
H Singh with **S. Mandal** et al., Proceeding of International Symposium on Nuclear Physics 58
(2013)378 ISBN: 81-8372-076-5

National Conference (peer reviewd proceeding):

1. *Mass-gated neutron multiplicity measurements for $^{48}\text{Ti} + ^{208}\text{Pb}$ reaction*
Meenu Thakur with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 388,
ISBN: 81-8372-076-5
2. *Binary fragmentation study of near super-heavy nucleus ^{256}Rf using mass-angle distribution probe*
Meenu Thakur with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 392,
ISBN: 81-8372-076-5
3. *Transfer reaction measurements for $^{28}\text{Si} + ^{92,96}\text{Zr}$ systems*
Khushboo,S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 484, ISBN: 81-
8372-076-5
4. *Measurement of cross-section of the radioisotope ^{27}Mg @ low energy neutron induced reactions,*
Unnati Gupta with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 614,
ISBN: 81-8372-076-5
5. *Fast timing readout for silicon strip detectors,*
A. Jhingan with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 964,
ISBN: 81-8372-076-5
6. *An Annular Parallel Plate Proportional Counter*
A. Jhingan with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 966,
ISBN: 81-8372-076-5

7. *Testing and characterization of a scintillator based position sensitive detector assembly for a one-shot gamma ray scanning setup*,
A. Banerjee, S. Mandal Proc. of the DAE Symp. on Nucl. Phys. Vol. 61 (2016) 1080, ISBN: 81-8372-076-5
8. *High spin negative parity states in ^{135}Pr*
Ritika Garg with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 60 (2015)96 ISBN: 81-8372-076-5
9. *Polarization Measurements and Re-investigation of Intermediate states in ^{86}Rb*
10. Suresh Kumar with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 60 (2015) 198 ISBN: 81-8372-076-5
11. *Systematic study of anomalous features of ^{241}Am , Poonam Jain, Alpana Goel, S.K. Mandal, Proc. of the DAE Symp. on Nucl. Phys. Vol. 60 (2015) 302 ISBN: 81-8372-076-5*
12. *Neutron emission from near super-heavy nuclei ^{256}Rf*
Meenu Thakur with S. Mandal et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 60 (2015) 358 ISBN: 81-8372-076-5
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16. *Collectivity and nuclear structure of $^{120,122,124}\text{Te}$*
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17. *Life time measurements for positive parity dipole bands in ^{85}Sr using DSAM*
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18. *High Spin states in $^{86}_{38}\text{Sr}_{48}$*
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19. *Investigation of dissipation in fission of $^{220,222,224}\text{Th}$ isotopes formed in $^{16}\text{O} + ^{204,206,208}\text{Pb}$ fusion reactions*.
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20. *Quasi-elastic Scattering Measurements for $^{28}\text{Si}+^{154}\text{Sm}$ System*
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21. *Exploration of reaction mechanism at deep sub-barrier region for $^{28}\text{Si}+^{96}\text{Zr}$ system.*
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22. *High Spin States in ^{86}Sr and their discription using shell model calculations,*
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23. *Measurement of Half life of exotic nuclei near proton drip-line,*
M. Roy with **S. Mandal et al.**, Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)366 ISBN: 81-8372-076-5
24. *De-excitation of hot rotating nuclei near proton dripline,*
J Ray with **S. Mandal et al.**, Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)368 ISBN: 81-8372-076-5
25. *Evaporation residue excitation function measurement for the $^{16,18}\text{O} + ^{198}\text{Pt}$ reactions,*
Rohit Sandal with **S. Mandal et al.**, Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)532
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26. *Measurement of the Fission Cross Sections for the $^{16,18}\text{O} + ^{198}\text{Pt}$ Systems,*
Rohit Sandal with **S. Mandal et al.**, Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)534
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27. *Pulse Shape Analysis of a two fold clover detector with EMD based algorithm,*
Davinder Siwal,**S. Mandal** et al., Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)890
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28. *Development of Magnet and associated power supply system for g - factor measurement setup,*
Rajesh Kumar with **S. Mandal et al.**, Proc. of the DAE Symp. on Nucl. Phys. Vol. 57(2012)922
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Total Publication Profile optional

Books

Nil

In Indexed/ Peer Reviewed Journals/conferences etc.

| | |
|---|------|
| A) Refereed Journals : | ~125 |
| B) International Conferences : | 58+ |
| C) National Symposia/Workshops/Meetings : | 74+ |
| D) Technical reports : | 02 |
| E) Invited talks & Seminars: | 70+ |

Articles

Nil

Conference Presentations

~110 in national and international conferences

Public Service / University Service / Consulting Activity

- 1.) Convener, AERB committee, Appointed by University of Delhi
- 2.) Convener, A Training programme "Radiation Safety Aspect of Use of Ionizing Radiation Application at Delhi University", 01-03, December, 2010, organized by Atomic Energy Regulatory Board (AERB), Mumbai
- 3.) Local convener, DAE-BRNS Nuclear Physics Symposium 2012 (which was held at University of Delhi from 3rd -7th Dec. 2012)
- 4.) Convener, Student Orientation Program 2012 (which was held at University of Delhi on 2nd Dec. 2012)
- 5.) Convener, VISITORS Programme 2015 (organized by Dept. of Physics & Astrophysics, University of Delhi)

Professional Societies Memberships

Life Member, Indian Physical Association (presently : Joint Secretary)

Projects (Major Grants / Collaborations)

Member of the following collaboration :

1. **PRESPEC** collaboration: GSI, Germany
2. **AGATA** collaboration: European collaboration
3. **FAIR** collaboration: GSI, Germany
4. **INO** Collaboration: India

Beam Time Projects at IUAC, New Delhi (completed /on going):

1. *Investigation of multi-nucleon transfer reactions in ^{40}Ca on $^{68,70}\text{Zn}$ at and near the Coulomb barrier*, Beam time project at IUAC, Funding agency: Inter University Accelerator Center (IUAC), New Delhi
2. *Investigation of multi-nucleon transfer reactions in medium mass nuclei at and near the Coulomb barrier using IUAC accelerator facility*. Funding agency: DU, New Delhi
3. *Few nucleon transfer between ground states and excited states in $^{34}\text{S} + ^{90,94}\text{Zr}$ around the Coulomb barrier*. Beam time project at IUAC, Funding agency: IUAC, New Delhi
4. *Investigation of one phonon mixed symmetry states in even-even isotopes of Tellurium*, Funding agency IUAC
5. *Investigation of Fission reaction dynamics and Neutron multiplicity in the mass region ~ 200*, Funding agency: IUAC.

Major projects (on going):

1. **Principal Investigator, IUAC-project:** *Investigation of few-nucleons transfer and fusion reaction mechanism in medium mass nuclei at and near the Coulomb barrier (2015 -*
2. **Principal Investigator, DST-Project:** *FAIR project: Pre-Operative Programme for Indian participation in the FAIR Project at GSI, Darmstadt, Germany – Accelerator and Detector-Related R&D and Prototyping" under the project Gamma Spectroscopy at NUSTAR (2009-2014)*
3. **Principal Investigator, IUAC-project:** *Investigation of few-nucleons transfer reaction in medium mass nuclei at and near the Coulomb barrier (2012 -15)*
4. **Co-principal Investigator, DST-Project:** *Proposal of a National Array of Neutron Detectors*

(NAND) for Studies of Nuclear Reaction Dynamics from near Barrier Energy to Intermediate Energy (2010-17)

5. **Principal Investigator:** *Investigation of multi-nucleon transfer dynamics by heavy ion induced reactions using stable and exotic projectiles. Indo-German (DST-DAAD) PPP-2009*
6. **Co-Investigator:** *Study of exotic nuclei far from stability by means of high intensity ion beams. Indo-Italian Executive Programme of S&T Co-operation 2008-2010,*
7. **Co-principal Investigator,** *DST-Project: Resistive plate chamber research & development, fabrication, testing & neutrino simulation studies for INO-ICAL experiments. (2011-13)*
8. **Co- Principal Investigator: DST project,** *A proposal by Indian Physicists to Collaborate on Neutrino Project at Fermilab. (2012 –17)*
9. **Co- Principal Investigator: DST project:** *R & D Efforts by University Groups for INO project. (2013-)*