

## RESUME of Dr. Dhruba Gupta

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### **EDUCATION**

PhD Physics 2001 (Saha Institute of Nuclear Physics/University of Calcutta)  
MSc Physics 1st class, 1994 (University College of Science/University of Calcutta)  
BSc Physics 1st class, 1992 (Vivekananda College/University of Calcutta)  
High School 1st division, 1989 (St. Lawrence High School/WBCHSE)  
Secondary 1st division, 1987 (St. Lawrence High School/WBBSE)

### **EMPLOYMENT**

Associate Professor of Physics: Bose Institute (2013 - present)  
Assistant Professor of Physics: Bose Institute (2008 - 2013)  
Postdoctoral Research Associate/CSIR Pool Officer: Physics Group, Variable Energy Cyclotron Centre, Dept of Atomic Energy, Govt of India, Kolkata, INDIA (2006 - 2008)  
Postdoctoral Research Associate/Visiting Scientist: Institut de Physique Nucleaire, IN2P3-CNRS, Universite de Paris-Sud, 91406 Orsay Cedex, FRANCE (2004 - 2006)  
Postdoctoral Research Associate: Department of Physics & Astronomy, University of North Carolina at Chapel Hill & Triangle Universities Nuclear Laboratory, USA (2001 - 2004)

### **HONORS & AWARDS**

CSIR Senior Research Associateship (Scientists' Pool Scheme) 2007  
Young Physicist of The Indian Physical Society 2000  
Council of Scientific and Industrial Research Fellowship 1995  
Saha Institute of Nuclear Physics Fellowship 1995  
University of Notre Dame, USA Graduate Research Assistantship 1995  
University Grants Commission Fellowship 1994  
University of Calcutta Merit Scholarship 1992-94  
National Merit Scholarship in Higher Secondary 1989  
National Merit Scholarship in Secondary 1987

### **ACADEMIC VISITS ABROAD**

England, France, Germany, Finland, Poland, Switzerland, USA

## RESEARCH GRANTS

“Astrophysical S-factor from nuclear reactions with a rare isotope beam of  ${}^7\text{Be}$ ”

Sponsor: ISRO Respond (2015), 38.5 Lakh 3 years

Role: Principal Investigator

## RESEARCH INTERESTS

### Nuclear physics with rare isotope beams

One of the important science questions for the present century is how were the heavy elements from iron to uranium made? Some other questions are what is dark matter, nature of dark energy, how did the Universe begin, how do cosmic accelerators work and are there additional space-time dimensions. Addressing the first question requires study of nuclei which are unique systems with strong short-range forces. Nuclear science is primarily still a phenomenological, experimental science since most nuclear quantities need to be measured. Now it may be possible to develop a comprehensive theory that will allow approximations to be quantified. However, this requires measurements involving very neutron and proton rich exotic nuclei.

Presently a world-wide effort is put into pursuing rare isotope science. The goal is to study nuclear structure, reactions and astrophysics. Experiments with the new isotopes produced will lead to a detailed description of nuclei, explain the origin of the elements in the cosmos, provide an understanding of matter in neutron stars and establish the scientific foundation for novel applications of nuclear science to society. New rare isotope beam facilities as well as upgrades are coming up at NSCL, ANL, HRIBF, TAMU in USA, TRIUMF in Canada, GSI in Germany, GANIL in France, RIKEN in Japan. It is obvious that cutting edge experiments in nuclear science would pervade the next decade.

#### (a) Experiment

*Search for higher excited states of  ${}^8\text{Be}^*$  to study the cosmological  ${}^7\text{Li}$  problem*

Approved experiment (IS 554) at CERN-HIE-ISOLDE (2012)

Role: Principal Investigator

We would like to study the unresolved  ${}^7\text{Li}$  abundance anomaly by carrying out experiments that destroy the rare isotope  ${}^7\text{Be}$ , the main source of  ${}^7\text{Li}$ . Utilizing a 35 MeV  ${}^7\text{Be}$  beam from HIE-ISOLDE, we would like to measure the (d,p) and (d,d) reactions with T-REX. The higher beam energy, for the first time, would allow us to measure higher excitation energies in  ${}^8\text{Be}$  up to about 20 MeV. With a wider angular coverage, we can make improved average cross-section measurement without assuming isotropy done in earlier works.

*Astrophysical S-factor from nuclear reactions with a rare isotope beam of  ${}^7\text{Be}$*

Another experiment intended to be done at HIE-ISOLDE involves breakup of  ${}^7\text{Be}$  in the presence of heavy targets. This is due to the fact that the production of  ${}^7\text{Li}$  is linked to the production of  ${}^7\text{Be}$ , which in turn, is related to the reaction  ${}^3\text{He} + {}^4\text{He} \rightarrow {}^7\text{Be} + \gamma$ . Measuring this reaction rate is of utmost importance to shed light on  ${}^7\text{Li}$  abundance anomaly. The radiative capture cross sections at low energies are very hard to measure directly and thus need extrapolations. A new approach to measuring the reaction rate could be measuring the reverse reaction of Coulomb dissociation of  ${}^7\text{Be}$ , preferably in the presence of a heavy target. For low relative breakup energies of fragments, one can extract the inverse reaction at astrophysical energies. In future, Coulomb breakup experiments will be an important source of information about nuclear reactions of astrophysical interest inaccessible by other means. Related prior-form DWBA calculations are underway to shed light on expected count rates of the experiment.

### *Study of n-p pairing through two-nucleon transfer reactions*

At the rare isotope facility GANIL, Caen, France, we carried out an experiment aimed to study two nucleon n-p transfer reactions on two nuclei, a mid-shell nucleus  $^{48}\text{Cr}$ , a candidate for n-p pairing correlations, and the doubly magic nucleus  $^{56}\text{Ni}$  which will not show any pairing effects. On both these nuclei we measured (p, $^3\text{He}$ ) and (d,a) reactions in order to investigate the competition between T=1 and T=0 pairing and probe n-p pairing. We are carrying out a part of the data analysis in the NPTool framework in collaboration with IPN, Orsay, France. The preliminary analysis shows that n-p pairing in  $^{56}\text{Ni}$  is mainly of isovector type.

### *Two proton transfer reactions*

At GANIL in France, I was involved in the study of two proton transfer reactions. Two neutron transfer reaction is used to study the correlation of two halo neutrons in halo nuclei. Two proton transfer reactions are used to study very neutron rich nuclei but the recoil particles are unbound in this case and one has to detect the decay products. We carried out the ( $\alpha$ , $^6\text{Be}$ ) transfer reaction and  $^6\text{Be}$  has a narrow unbound ground state decaying to  $\alpha + p + p$ . This type of experiments require large solid angle and good granularity of the recoil particle telescope. The new MUST2 silicon strip detector array is particularly suited for this type of multiparticle events detection. We used this array at GANIL to measure the  $^{22}\text{Ne}(\alpha, ^6\text{Be})^{20}\text{O}$  reaction at 30 MeV/A in inverse kinematics, populating states in  $^{20}\text{O}$ . The idea is to remove two protons from an already neutron-rich RIB, and thus getting access to even more exotic nuclei. Future experiments are planned to measure  $^{26}\text{Ne}(\alpha, ^6\text{Be})^{24}\text{O}$ ,  $^6\text{He}(\alpha, ^6\text{Be})4\text{n}$ . In particular, there is no conclusive evidence yet of a bound/resonant multi-neutron. If the tetra-neutron (neutral nuclei) is observed, it will require important revisions of existing models of nuclear forces.

### *Giant monopole resonance in unstable nuclei*

At GANIL, I was involved in testing a new setup to study complete giant resonances spectra in exotic nuclei. To measure the  $^{56}\text{Ni}$  giant monopole resonance,  $^{56}\text{Ni}(d, d')$  reaction is used with a secondary 50 MeV/A  $^{56}\text{Ni}$  beam and the active target detector MAYA. The excitation energy spectrum of  $^{56}\text{Ni}$  presents some promising indications of isoscalar resonances. This test experiment may lead to exciting possibilities to study evolution of the nuclear incompressibilities  $K_\infty$  with isospin. This is a new detector concept ( $4\pi$  coverage, low energy threshold, effective thick target) and is an excellent tool for studying the properties of exotic nuclei by low intensity secondary beams, where highest efficiency and good resolution in inverse kinematics is essential.

### *Analyzing power puzzle*

At the University of North Carolina at Chapel Hill and Triangle Universities Nuclear Laboratory (TUNL) USA, I was involved in high precision measurements of analyzing powers in low energy  $p - p$  scattering. It is well known that such measurements are valuable means of probing the long-range nuclear interaction. Measuring the very small analyzing powers ( $\leq 10^{-3}$ ) to adequate accuracy, however, is extremely difficult. The polarized ion source generated intense beams and the gas jet target provided a thick target with virtually no background. The  $p - p$  scattering measurements would be immensely useful at  $E \leq 10$  MeV, since  $^3P_J$  interactions are not uniquely determined from existing  $p - p$  data. I also participated in other low energy experiments including  $\vec{p} + ^3\text{He}$  scattering. The results show discrepancies between data and rigorous theoretical calculations analogous to the existing "A<sub>y</sub> puzzle" in  $Nd$  scattering.

### *Fragment emission mechanisms in low energy light heavy-ion reactions*

At the Variable Energy Cyclotron Centre, Kolkata, I was involved in experiments studying the entrance channel dependence of fragment emission yield. This helps to decipher different reaction mechanisms

(quasi-elastic, deep-inelastic transfer and orbiting, fusion-fission) contributing to fragment emission. Several systems (e.g 145-220 MeV  $^{20}\text{Ne} + ^{12}\text{C}$ ,  $^{27}\text{Al}$ ) have been studied using heavy ion beams from VECC and BARC-TIFR pelletron. The enhanced yields of fragments indicate the survival of orbiting like process in  $^{20}\text{Ne}$ ,  $^{16}\text{O} + ^{12}\text{C}$  system.

#### *Direct and sequential breakup of $^7\text{Li}$*

At Saha Institute of Nuclear Physics, Kolkata, I worked on breakup reaction studies of the  $^7\text{Li}$  nucleus. The breakup of composite nuclear projectiles in the field of atomic nuclei is an important reaction mode. The nucleus  $^7\text{Li}$ , although loosely bound, is stable and its structure including its resonant excited states is known. At wide fragment separation angles, the breakup measurements are especially challenging due to low yield. The incident  $^7\text{Li}$  may be excited to a high lying particle unstable state which subsequently decays into an  $\alpha$  and  $t$  at large angular separation. Alternatively, the  $^7\text{Li}$  may be excited directly into the continuum with strong final-state interactions scattering the fragments to wide angles and consequently large  $\alpha - t$  relative energies. At the BARC-TIFR pelletron, India, we carried out experiments on breakup of 42 MeV  $^7\text{Li}$  with several targets. We found that unlike the direct part, the sequential breakup cross sections from resonant states do not diminish with angle appreciably and some indications of breakup from higher excited states were found. The DWBA and coupled channel calculations indicate significant contributions of multistep processes. The study also demonstrates that similar wide angle measurements involving unstable halo nuclei would be extremely useful as controversies exist regarding their resonant states.

#### **(b) Theory**

##### *Isospectral bound state potential from DDM3Y effective interaction*

Theoretical investigation of  $5/2^+$  resonance state of  $^{11}\text{Be}$  was carried out using Supersymmetric Quantum Mechanics (SQM). The original two-body potential ( $^{10}\text{Be} + n$ ) was constructed microscopically using a DDM3Y effective NN interaction. SQM converted this potential to an isospectral potential which is effective for detecting resonance states in the continuum. The resonance energies of the  $5/2^+$ ,  $3/2^-$  and  $3/2^+$  states are in good agreement with the experimental values. At present we are working on the resonance states of the newly discovered nucleus  $^{15}\text{Be}$  ( $^{14}\text{Be} + n$ ) in the above framework. Our preliminary calculations match very well the two lowest resonance states of  $^{15}\text{Be}$ .

##### *Folding model analysis of proton scattering from exotic nuclei*

I am involved in a theoretical study of proton scattering from exotic nuclei. A folding model framework is used to incorporate structure explicitly, where a suitable effective nucleon-nucleon interaction is folded with realistic densities of different nuclei. The goal is to study the scattering from normal to exotic nuclei with an effective NN interaction which gives a unified description of radioactivity, nuclear matter and nuclear scattering.

I studied the proton scattering on neutron rich oxygen isotopes  $^{18,20,22}\text{O}$  in a folding model formalism of nucleon-nucleus optical potential and inelastic form factor. Microscopic calculations using HFB and QRPA densities with the DDM3Y effective interaction were carried out. The results reflect a high neutron contribution to the excited state and a large  $\beta$  value for  $^{20}\text{O}$  as compared to  $^{18,22}\text{O}$ . The theoretical analysis of proton scattering from mirror nuclei  $^{18}\text{Ne}$  and  $^{18}\text{O}$  using two different effective interactions provide equivalent descriptions to the data. The density dependence parameters obtained from nuclear matter calculations and used in the analysis also provide a good estimate for the nuclear mean free path. The formalism unifies radioactivity, nuclear matter and nuclear scattering.

I have also carried out a detailed theoretical analysis of proton scattering from stable and neutron rich He and Li isotopes  $^{4,6,8}\text{He}$ ,  $^{6,7,9,11}\text{Li}$ . To understand the formation of halo around the core of these

exotic nuclei, a systematic study starting from their stable isotopes is essential. The scattering of protons differ as structure and reaction dynamics change with changing neutron numbers of nuclei from normal to exotic. The elastic scattering data are fitted in an optical model framework using phenomenological and microscopic potentials. The folded potentials required significant renormalizations, indicating channel coupling, which vary negligibly with energy for  ${}^6\text{He}$ ,  ${}^{11}\text{Li}$  as compared to  ${}^6\text{Li}$  and  ${}^8\text{He}$ . The fitted potentials are used in DWBA calculations of nuclear excitation with transferred angular momentum  $l$ . Interestingly, the inelastic scattering of  ${}^{11}\text{Li}$  reflects an excitation of the neutron halo and is also related to the  ${}^{11}\text{Li}$  ground state structure. The 1.3 MeV ( $l=1$ ) excited state of  ${}^{11}\text{Li}$  corresponds to a soft-dipole mode of excitation. In  ${}^8\text{He}$ , with four extra-core neutrons, exotic shell sequences are expected. Some ambiguities also exist regarding soft-dipole excitation in He isotopes. Using a new set of forward angle data for  ${}^8\text{He}$  inelastic scattering, we found that the 3.57 MeV excited state corresponds to  $l=2$  transition, as is normally expected for an even-even nucleus. For  ${}^6\text{He}$  inelastic scattering to the 1.8 MeV state, variation of the  ${}^6\text{He}$  density distribution (rms radius 2.32-2.76 fm) resulted in negligible changes in calculations. Such microscopic studies of nuclei with severe imbalances between neutron and proton numbers are important with increasing availability of rare isotope beams and larger data set.

### (c) Simulation

#### *The Geant4 simulations for the TREX detector array*

I carried out the Geant4 simulations at Bose Institute for our approved experiment IS554 at CERN-HIE-ISOLDE, using the Miniball-TREX detector array. The results carried out has been presented at the ISOLDE Workshop and Users Meeting 2015 at CERN. At present we are fine tuning the simulations.

#### *Simulations for the MUST2 detector array*

At the Institut de Physique Nucleaire in France, I developed a Monte Carlo simulation code for the MUST2 detector array. A test experiment with the array was carried out at GANIL to investigate the  $2p$  pickup reaction  ${}^{22}\text{Ne}(\alpha, {}^6\text{Be}){}^{20}\text{O}$  in inverse kinematics at  $E = 30$  MeV/A, which produces  $\alpha + p + p$  final state. The code simulates the response of three-body final state.

#### *Simulations for the VECC charged particle detector array*

I developed a simulation code to study the response of the charged particle detector array (CPDA) at VECC. The nuclear collisions events at intermediate energies were obtained from the phenomenological event generator HIPSE (heavy ion phase space exploration). The work shows that the probability of multiple hits in the reactions of interest are small implying high granularity of the array. The unique feature of the array is that it enables to carry out high precision multi particle correlation studies over a large solid angle.

### (d) Instrumentation

#### *Calibration of the polyethylene terephthalate (PET) passive detector at CERN*

We studied the charge response of the polyethylene terephthalate (PET) passive detector at CERN. Beams of 2.82 MeV/u  ${}^{129}\text{Xe}$ ,  ${}^{78}\text{Kr}$  and  ${}^{49}\text{Ti}$  from the REX-ISOLDE facility at CERN were utilized. A calibration curve for PET is generated and our work clearly demonstrates that PET can be effectively used as a solid state nuclear track detector (SSNTD) with a high detection threshold. This makes this detector particularly suitable for rare event search in cosmic rays as it eliminates the dominant low  $Z$  background.

#### *The charged particle detector array at VECC*

For the utilization of the upcoming K500 superconducting cyclotron at VECC, Kolkata, a charged particle detector array (Si-CsI) is being built. The array has 24 ( $5 \times 5 \text{ cm}^2$ ) telescopes, each with three elements,  $50\mu$  single sided Si strip,  $500\mu$  double sided Si strip with 3 mm strip pitch and 6 cm CsI(Tl). Behind each  $500\mu$  strip, 4 CsI(Tl) detectors ( $2.5 \times 2.5 \text{ cm}^2$ ) are placed. The target to detector distance is 20 cm. I was involved in the initial tests of the performance of some prototype array elements.

*The gas-jet target and gas-recirculation system at TUNL*

At TUNL, the analyzing power measurements required upgrading the gas-jet target and building an accompanying gas-recirculation system to clean and recompress the exhaust gas. This would allow long data acquisition times at reasonable cost. The system was designed and built, the gas lines were assembled and leak-tested. The programmable logic control unit and necessary software for the valve control and interlock logic were installed. The calibration of appropriate nozzle-catcher (for flow of  $\text{H}_2$  at various pressures) was carried out. A new chamber setup was designed, built and installed to detect scattered particles at very forward angles.

**(e) Skills**

I have operated tandem accelerator, worked with polarized ion source, gas jet target, active target detector, Si (strip) CsI(Tl) detector arrays. I have substantial experience with nuclear electronics and data acquisition. My computer skills include working with Mac, LINUX, Windows and VMS operating systems. I am proficient in FORTRAN programming language, MS Office,  $\sigma$ -plot and LaTeX. I have extensively used codes and scientific packages like DWUCK4, ECIS, SRIM, LISE.

**TEACHING**

PhD course of Bose Institute (2014 - present): Methods in Physics (B17) (Coordinator)

Int. M.Sc-Ph.D Physics course of Bose Institute and Univ. of Calcutta (2014 - present) : Fall Semester Nuclear Physics (full responsibility) : 30 hours

M. Sc. Physics Courses of St. Xavier's College and Bose Institute (2008 - 2014) : Fall Semester  
1) Nuclear Physics (full responsibility) : 30 hours; 2) Advanced Experiments I.

Guide in Science Academies' (IASc-INSA-NASI) Summer Research Fellowship Program for Students and Teachers (2009 - present).

## RESEARCH PUBLICATIONS

### (a) Refereed International Journals<sup>1</sup>

*Phys. Rev. Lett.* (2)

*Phys. Lett. B* (1)

*Phys. Rev. C* (12) (Includes 2 Rapid Communications)

*Jour. Phys. G: Nucl. Part. Phys.* (3) (Includes 1 Letter to the Editor)

*Eur. Phys. Jour. A* (1)

*Nucl. Phys. A* (6)

*Astroparticle Physics* (1)

*Nucl. Instr. Meth. A* (2)

*International Journal of Modern Physics E* (1)

*Acta Physica Polonica B* (1)

*Pramana - Jour. of Phys.* (1)

*Physica Scripta* (1)

*Study of resonance states of  $^{11}\text{Be}$  with isospectral bound state microscopic potential*

S. K. Dutta, **D. Gupta**, D. Das and Swapan K. Saha

*Jour. Phys. G: Nucl. Part. Phys.* 41, 095104 (2014)

**Times Cited: 0**

*Deformation in  $^{28}\text{Si}^*$  produced via  $^{16}\text{O} + ^{12}\text{C}$  reaction*

S. Kundu, C. Bhattacharya, S. Bhattacharya, T. K. Rana, K. Banerjee, S. Mukhopadhyay, **D. Gupta**, A. Dey, and R. Saha

*Phys. Rev. C* 87, 024602 (2013)

**Times Cited: 4**

*Study of the  $1p$  transfer channel in the  $^{12}\text{C} + ^{27}\text{Al}$  reaction at 6-7 MeV per nucleon*

A. Dey, S Kundu, T K Rana, K Banerjee, C Bhattacharya, M Biswas, T K Ghosh, H Pai, G Mukherjee, J K Meena, **D Gupta**, S Bhattacharya, S Mukhopadhyay, D Pandit, S R Banerjee, S. Kumar, A Chatterjee, K Ramachandran, K Mahata, S Santra and S Pandit

*Phys. Scr. T150, 014011 (2012)*

**Times Cited: 1**

*Onset of deformation at  $N = 112$  in Bi nuclei*

H. Pai, G. Mukherjee, R. Raut, S. K. Basu, A. Goswami, S. Chanda, T. Bhattacharjee, S. Bhattacharyya, C. Bhattacharya, S. Bhattacharya, S. R. Banerjee, S. Kundu, K. Banerjee, A. Dey, T. K. Rana, J. K. Meena, **D. Gupta**, S. Mukhopadhyay, Srijit Bhattacharya, Sudeb Bhattacharya, S. Ganguly, R. Kshetri, and M. K. Pradhan

*Phys. Rev. C* 85, 064317 (2012)

**Times Cited: 6**

*Complex-fragment emission in low-energy light-ion reactions*

S. Kundu, C. Bhattacharya, K. Banerjee, T. K. Rana, S. Bhattacharya, A. Dey, T. K. Ghosh, G. Mukherjee, J. K. Meena, P. Mali, S. Mukhopadhyay, D. Pandit, H. Pai, S. R. Banerjee, **D. Gupta**, P. Banerjee, Suresh Kumar, A. Shrivastava, A. Chatterjee, K. Ramachandran, K. Mahata, S. K. Pandit, and S. Santra

*Phys. Rev. C* 85, 064607 (2012)

**Times Cited: 3**

*Calibration of a solid state nuclear track detector (SSNTD) with high detection threshold to search for rare events in cosmic rays*

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<sup>1</sup>Citation Source: ISI Web of Science Core Collection (as of January 2017)

Publications : 32, Sum of the Times Cited : 461, Sum of Times Cited without Self-Citations : 419  
Average Citations per Item : 14.41, h-index : 11

S. Dey, **D. Gupta**, A. Maulik, Sibaji Raha, Swapan K. Saha, D. Syam, J. Pakarinen, D. Voulot, F. Wenander

*Astroparticle Physics* 34, 805 (2011)<sup>2</sup>

**Times Cited: 7**

*Pair and single neutron transfer with Borromean  $^8\text{He}$*

A. Lemasson, A. Navin, M. Rejmund, N. Keeley, V. Zelevinsky, S. Bhattacharyya, A. Shrivastava, D. Bazin, D. Beaumel, Y. Blumenfeld, A. Chatterjee, **D. Gupta**, G. de France, B. Jacquot, M. Labiche, R. Lemmon, V. Nanal, J. Nyberg, R. G. Pillay, R. Raabe, K. Ramachandran, J. A. Scarpaci, C. Schmitt, C. Simenel, I. Stefan, and C. N. Timis

*Phys. Lett. B* 697, 454 (2011)

**Times Cited: 25**

*Reactions with the double-Borromean nucleus  $^8\text{He}$*

A. Lemasson, A. Navin, N. Keeley, M. Rejmund, S. Bhattacharyya, A. Shrivastava, D. Bazin, D. Beaumel, Y. Blumenfeld, A. Chatterjee, **D. Gupta**, G. de France, B. Jacquot, M. Labiche, R. Lemmon, V. Nanal, J. Nyberg, R. G. Pillay, R. Raabe, K. Ramachandran, J. A. Scarpaci, C. Simenel, I. Stefan, and C. N. Timis

*Phys. Rev. C* 82, 044617 (2010)

**Times Cited: 37**

*Extreme nuclear shapes examined via giant dipole resonance lineshapes in hot light-mass systems*

D. Pandit, S. Mukhopadhyay, S. Bhattacharya, S. Pal, A. De, S. Bhattacharya, C. Bhattacharya, K. Banerjee, S. Kundu, T. K. Rana, A. Dey, G. Mukherjee, T. Ghosh, **D. Gupta**, and S. R. Banerjee

*Phys. Rev. C* 81, 061302(R) (2010)

**Times Cited: 23**

*Study of the  $^{20}\text{O}(d,t)$  reaction with the MUST2-TIARA-VAMOS-EXOGAM setup*

A. Ramus, N. L. Achouri, H. Al Falou, N. I. Ashwood, D. Beaumel, Y. Blumenfeld, S. M. Brown, W. N. Catford, R. Chapman, M. Chartier, N. Curtis, F. Delaunay, B. Fernandez-Dominguez, C. Force, G. De France, S. Franchoo, J. Guillot, **D. Gupta**, P. Haigh, F. Hammache, M. Labiche, V. Lapoux, R. C. Lemmon, F. Marechal, B. Martin, X. Mougeot, B. Mougnot, L. Nalpas, A. Navin, N. A. Orr, N. Patterson, B. Pietras, E. C. Pollacco, A. Le Prince, M. Rejmund, J. A. Scarpaci, N. De Sereville, I. Stefan, O. Sorlin, J. S. Thomas and G. L. Wilson

*International Journal of Modern Physics E* 18, 2056 (2009)

**Times Cited: 3**

*Variation of neutron detection characteristics with dimension of BC501A neutron detector*

K. Banerjee, T. K. Ghosh, S. Kundu, T. K. Rana, C. Bhattacharya, J. K. Meena, G. Mukherjee, P. Mali, **D. Gupta**, S. Mukhopadhyay, D. Pandit, S. R. Banerjee, S. Bhattacharya *et al*

*Nucl. Instr. Meth. A* 608, 440 (2009)

**Times Cited: 31**

*Light-charged-particle emission from hot  $^{32}\text{S}^*$  formed in  $^{20}\text{Ne} + ^{12}\text{C}$  reaction*

A. Dey, S. Bhattacharya, C. Bhattacharya, K. Banerjee, T.K. Rana, S. Kundu, S. R. Banerjee, S. Mukhopadhyay, **D. Gupta**, R. Saha

*Eur. Phys. Jour. A* 41, 39 (2009)

**Times Cited: 0**

*Fragment emission studies of the  $^{16}\text{O} + ^{12}\text{C}$  reaction*

S. Kundu, A. Dey, K. Banerjee, T. K. Rana, S. Mukhopadhyay, **D. Gupta**, R. Saha, S. Bhattacharya, C. Bhattacharya

*Phys. Rev. C* 78, 044601 (2008)

**Times Cited: 8**

*Consistency of nuclear thermometric measurements at moderate excitation*

T. K. Rana, C. Bhattacharya, S. Kundu, K. Banerjee, S. Bhattacharya, A. Dey, T. K. Ghosh,

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<sup>2</sup>Research Highlight in Nature India, doi:10.1038/nindia.2011.56

- G. Mukherjee, J. K. Meena, **D. Gupta**, S. Mukhopadhyay, D. Pandit, S. R. Banerjee, A. Roy, and P. Dhara  
*Phys. Rev. C* **78**, 027602 (2008) **Times Cited: 7**
- 1n and 2n Transfer With the Borromean Nucleus  ${}^6\text{He}$  Near the Coulomb Barrier<sup>3</sup>*  
A. Chatterjee, A. Navin, A. Shrivastava, S. Bhattacharyya, M. Rejmund, N. Keeley, V. Nanal, J. Nyberg, R. G. Pillay, K. Ramachandran, I. Stefan, D. Bazin, D. Beaumel, Y. Blumenfeld, G. de France, **D. Gupta**, M. Labiche, A. Lemasson, R. Lemmon, R. Raabe, J. A. Scarpaci, C. Simenel, and C. Timis  
*Phys. Rev. Lett.* **101**, 032701 (2008) **Times Cited: 83**
- Giant dipole resonance width in nuclei near Sn at low temperature and high angular momentum*  
S. Bhattacharya, S. Mukhopadhyay, D. Pandit, S. Pal, A. De, S. Bhattacharya, C. Bhattacharya, K. Banerjee, S. Kundu, T. K. Rana, A. Dey, G. Mukherjee, T. Ghosh, **D. Gupta** and S. R. Banerjee  
*Phys. Rev. C* **77**, 024318 (2008) **Times Cited: 18**
- First Measurement of the Giant Monopole and Quadrupole Resonances in a Short-Lived Nucleus:  ${}^{56}\text{Ni}$*   
C. Monrozeau, E. Khan, Y. Blumenfeld, C. E. Demonchy, W. Mittig, P. Roussel-Chomaz, D. Beaumel, M. Caamano, D. Cortina-Gil, J. P. Ebran, N. Frascaria, U. Garg, M. Gelin, A. Gillibert, **D. Gupta**, N. Keeley, F. Marechal, A. Obertelli and J-A. Scarpaci  
*Phys. Rev. Lett.* **100**, 042501 (2008) **Times Cited: 42**
- Characteristics of Gd-loaded liquid scintillators BC521 and BC525*  
K. Banerjee, S. Kundu, S. Mukhopadhyay, T. K. Rana, S. Bhattacharya, C. Bhattacharya, S. R. Banerjee, T. K. Ghosh, G. Mukherjee, T. Bandyopadhyay, A. Dey, J. K. Meena, P. Mukhopadhyay, **D. Gupta**, S. Pal, D. Pandit, S. Bhattacharya  
*Nucl. Instr. Meth. A* **580**, 1383 (2007) **Times Cited: 10**
- Characterization of fragment emission in  ${}^{20}\text{Ne}$  ( $\sim 7\text{-}10$  MeV/nucleon) +  ${}^{12}\text{C}$  reactions*  
A. Dey, C. Bhattacharya, S. Bhattacharya, S. Kundu, K. Banerjee, S. Mukhopadhyay, **D. Gupta**, T. Bhattacharjee, S. R. Banerjee, *et al*  
*Phys. Rev. C* **76**, 034608 (2007) **Times Cited: 11**
- Study of Dissipative Collisions of  ${}^{20}\text{Ne}$  ( $\sim 7\text{-}11$  MeV/nucleon) +  ${}^{27}\text{Al}$*   
A. Dey, C. Bhattacharya, S. Bhattacharya, T. K. Rana, S. Kundu, K. Banerjee, S. Mukhopadhyay, S. R. Banerjee, **D. Gupta**, R. Saha  
*Phys. Rev. C* **75**, 064606 (2007) **Times Cited: 4**
- Measurement of the GMR in the unstable  ${}^{56}\text{Ni}$  nucleus using the active target MAYA*  
C. Monrozeau, E. Khan, Y. Blumenfeld, W. Mittig, D. Beaumel, M. Caamano, D. Cortina-Gil, C. E. Demonchy, N. Frascaria, U. Garg, M. Gelin, A. Gillibert, **D. Gupta**, F. Marechal *et al*  
*Nucl. Phys. A* **788**, 182c (2007) **Times Cited: 8**
- Evidence of large nuclear deformation of  ${}^{32}\text{S}^*$  formed in  ${}^{20}\text{Ne} + {}^{12}\text{C}$  reaction*  
A. Dey, S. Bhattacharya, C. Bhattacharya, K. Banerjee, T. K. Rana, S. Kundu, S. Mukhopadhyay, **D. Gupta**, R. Saha  
*Phys. Rev. C* **74**, 044605 (2006) **Times Cited: 10**
- Folding model analysis of proton scattering from  ${}^{18,20,22}\text{O}$  nuclei*

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<sup>3</sup>Phys. Rev. Lett. Cover Page Article

- D. Gupta**, E. Khan, Y. Blumenfeld  
*Nucl. Phys. A 773, 230 (2006)* **Times Cited: 13**
- Survival of orbiting in  $^{20}\text{Ne}$  (7-10 MeV/nucleon) +  $^{12}\text{C}$  reactions*  
C. Bhattacharya, A. Dey, S. Kundu, K. Banerjee, S. Bhattacharya, S. Mukhopadhyay, **D. Gupta**,  
T. Bhattacharjee, S. R. Banerjee *et al*  
*Phys. Rev. C 72, 021601 (R) (2005)* **Times Cited: 17**
- Folding model analysis of proton scattering from mirror nuclei  $^{18}\text{Ne}$  and  $^{18}\text{O}$*   
**D. Gupta**, D. N. Basu  
*Nucl. Phys. A 748, 402 (2005)* **Times Cited: 22**
- Inelastic scattering of protons from  $^{6,8}\text{He}$  and  $^{7,11}\text{Li}$  in a folding model approach*  
**D. Gupta**, C. Samanta  
*Jour. Phys. G: Nucl. Part. Phys. 28, 85 (2002)*<sup>4</sup> **Times Cited: 10**
- Breakup of 42 MeV  $^7\text{Li}$  projectiles in the fields of  $^{12}\text{C}$  and  $^{197}\text{Au}$  nuclei*  
**D. Gupta**, C. Samanta, R. Kanungo, P. Basu, Subinit Roy, S. Kailas, A. Chatterjee *et al*  
*Pramana - Jour. of Phys. 57, 209 (2001)* **Times Cited: 0**
- Measurement of 42 MeV  $^7\text{Li}$  projectile breakup on  $^{208}\text{Pb}$  target near grazing incidence*  
**D. Gupta**, C. Samanta, A. Chatterjee, S. Kailas, B. J. Roy, K. Mahata, A. Shrivastava  
*Nucl. Phys. A 683, 3 (2001)*<sup>5</sup> **Times Cited: 8**
- Consistent analysis of proton elastic scattering from  $^{4,6,8}\text{He}$  and  $^{6,7,9,11}\text{Li}$  in the energy range of 25 - 75A MeV*  
**D. Gupta**, C. Samanta, R. Kanungo  
*Nucl. Phys. A 674, 77 (2000)* **Times Cited: 37**
- Channel coupling effects in resonant breakup of 42 MeV  $^7\text{Li}$  with  $^{58}\text{Ni}$  target*  
**D. Gupta**, C. Samanta, A. Chatterjee, K. Rusek, Y. Hirabayashi  
*Jour. Phys. G: Nucl. Part. Phys. 26, L81 (2000)* **Times Cited: 2**
- Effect of smeared  $^4\text{He}$ -core in  $^6\text{He} + p$  elastic scattering*  
**D. Gupta**, C. Samanta, R. Kanungo  
*Acta Physica Polonica B 31, 471 (2000)* **Times Cited: 1**
- Measurement of 42 MeV  $^7\text{Li}$  projectile breakup on  $^{58}\text{Ni}$  target beyond grazing incidence*  
**D. Gupta**, C. Samanta, R. Kanungo, M. Sharan, S. Kailas, A. Chatterjee, K. Mahata, A. Shrivastava  
*Nucl. Phys. A 646, 161 (1999)* **Times Cited: 10**

## (b) Selected Conference Proceedings

- Study of unbound states of  $^{15}\text{Be}$  using supersymmetric quantum mechanics*  
S. K. Dutta, **D. Gupta**, Swapan K. Saha  
*Proceedings of the DAE-BRNS Symposium on Nuclear Physics 61, 80 (2016)*

*Resonance excitation in  $^7\text{Be} + d$  reaction to study the cosmological lithium problem*

<sup>4</sup>Among the most highly accessed online articles in Jour. Phys. G during 1999-2002

<sup>5</sup>Feature in the hottest papers page, amongst the most downloaded papers (June - December 2000)

M. Sinha, **D. Gupta**, Swapan K. Saha

*Proceedings of the DAE-BRNS Symposium on Nuclear Physics 61, 886 (2016)*<sup>6</sup>

*Dissipative collision studies in  $^{11}\text{B} + ^{28}\text{Si}$ ,  $^{12}\text{C} + ^{27}\text{Al}$ ,  $^{12}\text{C} + ^{28}\text{Si}$*

S. Kundu, C. Bhattacharya, T. K. Rana, K. Banerjee, A. Dey, T. K. Ghosh, G. Mukherjee, S. Bhattacharya, J. K. Meena, S. R. Banerjee, S. Mukhopadhyay, D. Pandit, P. Mali, **D. Gupta**, A. Shrivastava, S. Kumar, A. Chatterjee, K. Ramachandran, P. Banerjee

*Proceedings of the DAE-BRNS Symposium on Nuclear Physics vol 56, 486 (2011)*

*Deformation in  $^{28}\text{Si}^*$  produced via  $^{16}\text{O} + ^{12}\text{C}$  reaction*

S. Kundu, C. Bhattacharya, T. K. Rana, K. Banerjee, S. Mukhopadhyay, **D. Gupta**, A. Dey, R. Saha, S. Bhattacharya

*Proceedings of the DAE-BRNS Symposium on Nuclear Physics vol 56, 562 (2011)*

*Fragment emission studies in  $^{12}\text{C} + ^{12}\text{C}$  reaction*

S. Kundu, C. Bhattacharya, T. K. Rana, K. Banerjee, T. K. Ghosh, G. Mukherjee, A. Dey, S. Bhattacharya, J. K. Meena, S. Mukhopadhyay, **D. Gupta**, Suresh Kumar, S. K. Pandit, S. Santra, K. Mahata, A. Chatterjee, K. Ramachandran

*Proceedings of the DAE-BRNS Symposium on Nuclear Physics vol 55, 326 (2010)*

*Simulations for The Charged Particle Detector Array at VECC*

**D. Gupta**, S. Bhattacharya, G. Mukherjee, C. Bhattacharya, K. Banerjee, A. Dey *et al*

*Proceedings of the DAE-BRNS Symposium on Nuclear Physics vol 53, 701 (2008)*

*Simulations for The VECC Charged Particle Detector Array*

**D. Gupta**, S. Bhattacharya, G. Mukherjee, C. Bhattacharya, K. Banerjee, A. Dey *et al*

*Intl Wkshop on Multifragmentation and Related Topics, Caen (France) November 4-7, 2007*

*Italian Physical Society, Conference Proceedings 95, 321 (2008)*

*A Gas-jet Recirculation System for p-p Scattering Analyzing Power Measurements at  $E \leq 10$  MeV*

**D. Gupta**, T. C. Black, E. J. Ludwig, H. J. Karwowski

*17th Intl IUPAP Conf on Few-Body Problems in Physics, TUNL, Durham, USA, June 5-10 (2003)*

*Proton- $^3\text{He}$  Elastic scattering at low Energies and the  $A_y$  Puzzle*

B. M. Fisher, T. C. Black, C. R. Brune, T. B. Clegg, **D. Gupta**, T. Katabuchi, H. J. Karwowski, D. S. Leonard, E. J. Ludwig, A. Kievsky, M. Viviani, S. Rosati

*17th Intl IUPAP Conf on Few-Body Problems in Physics, TUNL, Durham, USA, June 5-10 (2003)*

*Measurement of the vector analyzing power  $A_y$  for  $p + p$  elastic scattering at low energy*

**D. Gupta**, T. C. Black, E. J. Ludwig, H. J. Karwowski

*TUNL Progress Report XLI, 126 (2002)*

*Signature of channel coupling effect in proton elastic scattering from  $^{4,6,8}\text{He}$  and  $^{6,7,9,11}\text{Li}$  in the energy range of 25A-70A MeV*

C. Samanta, **D. Gupta**, R. Kanungo

*Bulletin of American Physical Society, April Meeting, P14.009 (2000)*

*Breakup of 42 MeV  $^7\text{Li}$ -projectile on  $^{58}\text{Ni}$  target*

**D. Gupta**

*University of Helsinki Report Series in Physics HU-P-263, 39 (1999)*

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<sup>6</sup>Awarded as best poster presentation in the 61<sup>st</sup> DAE-BRNS Symposium on Nuclear Physics 2016

## TALKS DELIVERED & VISITS FOR COLLABORATIVE RESEARCH

*Visited CERN, Geneva, Switzerland*

September 25 - October 5, 2016; December 1-9, 2015; December 14-18, 2014; December 16-21, 2012

*Visited Institut de Physique Nucleaire, Orsay, France*

September 21-25, 2016; December 9-17, 2015; December 8-14, 2014; December 13-16, 21-28, 2012

*Visited GANIL, Caen, France*

April 12-17, 2014

*The cosmological lithium problem in the context of resonant enhancement (poster)*

*ISOLDE Workshop and Users Meeting 2015*

CERN, Geneva, Switzerland, December 2-4, 2015

*Breakup and transfer reactions with  ${}^7\text{Be}$  to study  ${}^7\text{Li}$  abundance anomaly (poster)*

*ISOLDE Workshop and Users Meeting 2014 "50th Anniversary Edition",*

CERN, Geneva, Switzerland, December 17-19, 2014

*Nuclear Exotica with Rare Isotope Beams*

Bose Institute, Kolkata, India, August 20, 2014

*Resonance excitation in  ${}^7\text{Be} + d$  reaction to study  ${}^7\text{Li}$  abundance anomaly*

ISOLDE Workshop and Users Meeting 2012, CERN, Geneva, Switzerland, December 17-19, 2012

*Nuclear Astrophysics with Rare Isotope Beams at CERN-ISOLDE*

Institut de Physique Nucleaire, Orsay, France, December 14, 2012

*Astrophysical S-factor from nuclear reactions with a rare isotope beam of  ${}^7\text{Be}$*

ISRO Respond Review Meeting, Physical Research Laboratory, Ahmedabad, February 28-29, 2012

*Interaction of Radiation with Matter*

*Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 21-29, 2015*

*Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 20-28, 2013*

*Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 21-29, 2011*

Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 10-22, 2009

*Exotica in Nuclear Physics Experiments and Cosmic Rays*

Bose Institute, Kolkata, India, April 24, 2009

*Study of Nuclear Reactions with Rare Isotope Beams*

*Gesellschaft fur Schwerionenforschung mbH (GSI), Darmstadt, Germany, October 25, 2007*

*Nuclear Science Centre, New Delhi, India, September 11, 2007*

*Saha Institute of Nuclear Physics, Kolkata, India, August 21, 2007*

*Variable Energy Cyclotron Centre, Kolkata, India, July 24, 2007*

*Bose Institute, Kolkata, India, July 20, 2007*

*Hahn-Meitner-Institut, Berlin, Germany, December 4, 2006*

Forschungszentrum Rossendorf, Dresden, Germany, November 30, 2006

*Measurement of p-p Scattering Analyzing Power at Low Energy*

*Seminar Ions Lourds, Institut de Physique Nucleaire, Orsay, France, February 2, 2005*

*Nuclear Science Centre, New Delhi, India, October 9, 2004*

*Variable Energy Cyclotron Centre, Calcutta, India, April 7, 2004*

*Duke University, Durham, USA, January 22, 2004*

*Dept. of Physics & Astronomy, Univ. of North Carolina, Chapel Hill, USA, November 17, 2003*

Dept. of Physics, Argonne National Laboratory, Argonne, USA, October 10, 2003

*Scattering of Protons from  ${}^4,{}^6,{}^8\text{He}$ ,  ${}^6,{}^7,{}^9,{}^{11}\text{Li}$  in a Folding Model Approach*

*Second RIA Summer School on Exotic Beam Physics*

NSCL, Michigan State University, East Lansing, USA, August 4-9, 2003

*Breakup of 42 MeV  ${}^7\text{Li}$  projectiles*

Dept. of Physics & Astronomy, Univ. of North Carolina, Chapel Hill, USA, September 17, 2001

*Breakup of 42 MeV  ${}^7\text{Li}$  projectiles with  ${}^{12}\text{C}$ ,  ${}^{58}\text{Ni}$ ,  ${}^{197}\text{Au}$  and  ${}^{208}\text{Pb}$  targets*

The 18th IPS Colloquium for Young Physicists, SINP, Calcutta, India, August 24-25, 2000

*Discrepancy between  ${}^{11}\text{Li} + p$  and  ${}^6\text{He} + p$  scattering*

DAE Symposium on Nuclear Physics, Chandigarh, India, December 27-31, 1999

*Breakup of 42 MeV  ${}^7\text{Li}$  projectile on  ${}^{58}\text{Ni}$  target*

Department of Physics, University of Surrey, UK, September 16, 1999

*Effect of smeared  ${}^4\text{He}$ -core in  ${}^6\text{He} + p$  elastic scattering*

XXVI Mazurian Lakes School of Physics Krzyze, Poland September 1-11, 1999

*Visited Forschungszentrum Karlsruhe, Technik und Umwelt,*

Institute fur Kernphysik III, Germany, August 23-30, 1999

*Breakup of 42 MeV  ${}^7\text{Li}$  projectile on  ${}^{58}\text{Ni}$  target*

ICPS '99, University of Helsinki, Helsinki, Finland, August 14-20, 1999

*Breakup of 42 MeV  ${}^7\text{Li}$  projectile on  ${}^{58}\text{Ni}$  target*

Van-de-Graaff Seminar, NPD, Bhabha Atomic Research Centre, Mumbai, India, May 7, 1999

*Breakup of  ${}^7\text{Li}$  on  ${}^{58}\text{Ni}$  nuclei*

Saha Institute of Nuclear Physics, NRS Division, Calcutta, India April 9 and 16, 1999

*A study of light exotic nuclei near drip line*

Saha Institute of Nuclear Physics, Calcutta, India, August 1996

## CONFERENCE/WORKSHOP/SYMPOSIUM/SCHOOLS ATTENDED

*Workshop and Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 17-29, 2015*  
*ISOLDE Workshop and Users Meeting 2015, CERN, Geneva, Switzerland, December 2-4, 2015*  
*ISOLDE Workshop and Users Meeting 2014, CERN, Geneva, Switzerland, December 15-17, 2014*  
*Workshop and Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 17-28, 2013*  
*ISOLDE Workshop and Users Meeting 2012, CERN, Geneva, Switzerland, December 17-19, 2012*  
*4<sup>th</sup> School & Workshop on Low Energy Nuclear Astrophysics, SINP, Kolkata, November 26-29, 2012*  
*Workshop on Science with Rare Ion Beams (SCRIBE-2012), VECC, Kolkata, November 7-9, 2012*  
*NUSTAR Week 2012, Variable Energy Cyclotron Centre, Kolkata, October 8-12, 2012*  
*Intl Wkshop on Future Plan with Radioactive Ion Beam (FPRIB 2012), Kolkata, April 16-18, 2012*  
*ISRO Respond Review Meeting, Physical Research Laboratory, Ahmedabad, February 28-29, 2012*  
*Workshop and Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 17-29, 2011*  
*CAEN Digital Pulse Processing Workshop, Bose Institute, Kolkata, February 23-24, 2011*  
*Workshop and Winter School on Astroparticle Physics, Bose Institute, Darjeeling, Dec 10-22, 2009*  
*Homi Bhabha Centenary Wshop and Winter School on Astroparticle Physics, Ooty, Dec 18-29, 2008*  
*Cyclotrons : Rising Expectations and Mounting Challenges, VECC, Kolkata, June 25-26, 2008*  
*Intl Wkshop on Multifragmentation and Related Topics, GANIL, Caen, France, November 4-7, 2007*  
*Fourth Nuclear Theory Workshop "Clusters in Nuclei", IReS, Strasbourg, France, Feb 7-11, 2005*  
*Workshop on Nuclear Astrophysics using Low Energy Accelerators, SINP, Calcutta, April 29, 2004*  
*Second RIA Summer School on Exotic Beam Physics, NSCL, East Lansing, USA, August 4-9, 2003*  
*17th Intl IUPAP Conf on Few-Body Problems in Physics, TUNL, Durham, USA, June 5-10, 2003*  
*Science and History on Stage: A Raleigh Symposium on Copenhagen, Raleigh, USA, March 16, 2002*  
*Production of Radioactive Ion Beams (PRORIB 2001), Puri, India, February 11-17, 2001*  
*International Symposium on Nuclear Physics: Mumbai, India, December 21-24, 2000*  
*Physics with Multi Detector Array 2000, SINP, Calcutta, India, November 8-10, 2000*  
*DAE Symposium on Nuclear Physics, Chandigarh, India, December 27-31, 1999*  
*XXVI Mazurian Lakes School of Physics, Krzyze, Poland, September 1-11, 1999*  
*Intl. Conf. of Phys. Students (ICPS 1999), Univ. of Helsinki, Finland, August 14-20, 1999*  
*DAE Symposium on Nuclear Physics, Mumbai, India, December 26-30, 1998*  
*Conference on Physics & Technology of Accelerators, Calcutta, India, 1998*  
*Intl. Wkshop. on Physics with Radioactive Nuclear Beams, Puri, India, Jan 12-17, 1998*  
*DAE Symposium on Nuclear Physics, Bangalore, India, December 26-30, 1997*

## PROFESSIONAL SERVICES & ACTIVITIES

### Administrative Services

*Served in the election commission 2013 for election to the various committees of the academic council of Bose Institute*

*Served in the committees for recruiting JRF/MSc students at Bose Institute (2009 - present)*

### Conference Organization

*Convener of the Workshop and Winter School on Astroparticle Physics (WAPP 2009), Bose Institute, Darjeeling, December 10-22, 2009*

*Member of the organizing committee for the Workshop and Winter School on Astroparticle Physics (WAPP 2011, WAPP 2013, WAPP 2015), Bose Institute, Darjeeling*

### Membership of Academic Organizations

*Life Member of The Indian Physical Society*

## ADVISEMENT

### Postdoc

*Dr. Mandira Sinha, ISRO-RA (joined 2015)*

### PhD

- 1. Mr. Mustak Ali, JRF (joined 2016)*
- 2. Ms. Kabita Kundalia, JRF (joined 2016)  
(Joint supervision with Prof. Swapan K. Saha)*
- 3. Mr. Kaushik Naskar, CSIR-JRF (joined 2016)  
(Joint supervision with Prof. Partha Joardar)*
- 4. Ms. Dyutima Das, CSIR-SRF (joined 2012)  
Thesis title: Structure and reaction dynamics of exotic Beryllium nuclei*

### Masters

- 1. Mr. Abhijit Bera, INSPIRE scholar, DST, Govt. of India (2016); Next: MSc Physics (IISER Kolkata)*
- 2. Ms. Anwesha Panda, INSPIRE scholar, DST, Govt. of India (2016); Next: MSc Physics (IISER Kolkata)*
- 3. Mr. G Gurunadha Reddy, INSPIRE scholar, DST, Govt. of India (2016); Next: MSc Physics (NISER Bhubaneswar)*
- 4. Ms. Ankita Nemu, IASc-INSA-NASI Summer Research Fellow (2016); Next: MSc Physics*
- 5. Ms. K. R. Athira, IASc-INSA-NASI Summer Research Fellow (2016); Next: MSc Physics*
- 6. Mr. Sharba Bhattacharjee, IASc-INSA-NASI Summer Research Fellow (2015); Next: MSc Physics (NISER Bhubaneswar)*
- 7. Mr. Anurag Singh, INSPIRE scholar, DST, Govt. of India (2015); Next: MSc Physics (Visva-Bharati University)*
- 8. Ms. Debasmita Mondal, IASc-INSA-NASI Summer Research Fellow (2014); Next: MSc Physics (IISc Bangalore)*
- 9. Mr. Anshul Singh, IASc-INSA-NASI Summer Research Fellow (2012); Next: MSc Physics (U. Delhi)*
- 10. Ms. A. S. Ashwini, IASc-INSA-NASI Summer Research Fellow (2012); Next: B. Tech (Sastra Univ.)*
- 11. Mr. Nabarun Dev, IASc-INSA-NASI Summer Research Fellow (2011); Next: MSc Physics (IIT Delhi); Graduate student, Univ. of Notre Dame, Indiana, USA*
- 12. Ms. Pew Basu, INSPIRE scholar, DST, Govt. of India (2010); Next: MSc Physics (Univ. of Calcutta)*