ACADEMIC QUALIFICATIONS

- Pursued Secondary (**10th class**) education from **West Bengal Board of Secondary Education** in **2003** with **84.85%** (1st Division).
- Completed Higher secondary (**12th class**) education from **West Bengal Council of Higher Secondary Education in 2005** with (68.9%1st Division).
- Achieved **B. Sc degree** in Physics (Hons.) from **The University of Burdwan, West Bengal in 2009** with 63.38% (1st Division).
- Pursued **M. Sc** in Physics from **Indian Institute of Technology Roorkee in 2011** with 89% (1st Division).
- **Ph. D.** in Experimental Nuclear Physics (July 2012 – May 2018) at **Indian Institute of Technology, Roorkee, India.**

RESEARCH EXPERIENCE

Ph. D. student at Indian Institute of Technology (I. I. T.), Roorkee and Tata Institute of Fundamental Research (TIFR), Mumbai, India (July 2012 – August 2017):

Supervisors: Dr. Anil Kumar Gourishetty(IIT Roorkee) and Prof. Indranil Mazumdar (TIFR, Mumbai)

- ✓ The cross sections and S-factors measurements for $d(p, \gamma)\,^3He$ capture reaction at three new beam energies namely, 100 keV, 175 keV, 250 keV relevant in BBN region using a large volume $LaBr_3$:Ce detectors.

- ✓ In-depth measurements of cross section and branching ratios of 4.43 MeV, 9.64 MeV, 12.71 MeV and 15.1 MeV energy state of ^{12}C nucleus using $^{12}C(p,p'\gamma)^{12}C$ reaction for beam energies from 8 MeV to 22 MeV.

- ✓ High energy response of 2×2 array of the large volume square bars of $LaBr_3$:Ce detectors with gamma rays up to 22.5 MeV .

- ✓ Development of Geant4 simulation code for array geometry to compare with the measured high energy γ-response (22.5 MeV) and efficiency of the detector.

- ✓ Efficiency calibration and coincidence summing correction for a large volume $LaBr_3$:Ce detector using positron emitter (^{22}Na).

- ✓ Development of Geant4 simulation code for the positron emitter with the inclusion of the plastic material to generate efficiency vs energy curve.

- ✓ In depth study of testing of NaI(Tl), $LaBr_3$:Ce detectors of different shapes and different sizes, liquid scintillators (BC501A) , GM counter detectors and related electronics.

- ✓ Performed experiment and analysis of Study on giant dipole resonance decay from hot rotating ^{196}Hg and ^{192}Pt.

OTHER RESEARCH EXPERIENCE

- Worked on a DAE project as a Junior Research Fellow (JRF) in the project topic **'Improved nuclear structure and decay data for nuclear models in the heavy nuclides region'** from November' 2011 to July' 2012 under the supervision of Prof. A. K. Jain (Prof. and Head in Dept. of Physics, IIT Roorkee, India**).**

- I have done Master's Project on **"Gamma tunneling in K- isomers"** under the guidance of Prof. A. K. Jain (Prof. and Head in Dept. of Physics, IIT Roorkee, India**).** This work has completed on April'2011.

- Worked on the "**Generation of linearly polarized laser output from Yb-doped double-clad fibers"** under the guidance of Shri**.** Brahma Nand Upadhyaya (Scientific Officer-'F'), **under Young Scientist Research programme (YSRP) 2010,** at Raja Ramanna Centre for Advanced Technology, Indore, India during 17th May to 9th July, 2010

GEANT4 SIMULATION EXPERIENCE

- Done Geant4 simulation of response of NaI(Tl),$LaBr_3$(Ce) detectors with ɣ-rays.
- I have caaried out Geant4 Monte carlo simulation of response of an array of 4π of 32 NaI(Tl) dectectors, 7element array of NaI(Tl) detectors, 10"×12" (HIGRASAP) NaI(Tl) detector, an array of 2"×2" square-bar array of $LaBr_3$ detector with high energy gamma rays as well as low energy gamma rays.
- I have made realistic Geant4 Monte Carlo simulations of absorption coefficient for gammas with different materials such as lead, alumni, copper, etc.

PARTICIPATION OF RESEARCH EXPERIMENTS

- Actively participated in the **"Single crystal growth experiment of SrI_2:Eu"** using Bridgman Method carried out at BARC Mumbai, during 1st July to 6th July'2013.
- I have also taken part in the experiment on "**Giant Dipole Resonance and Shape transitions in ^{196}Hg nuclei**" during 7th July to 14th July 2013 at IUAC, New Delhi.
- Actively participated in the experiment " **The characterization and response of an square-bar array of $LaBr_3$ detector with high energy gamma rays coming from $^{11}B(p,\gamma)^{12}C$ reaction"** carried out at TIFR Mumbai, during 2nd April to 6th April'2015.
- Participated in the experiment **"Studies in proton capture in ^{12}C"** carried out at TIFR Mumbai, during December 20th to 25th, 2015.
- Participate in the experiment **"Measurement of cross sections and astrophysical S-factors for p(d,^{3}He)γ reaction at astrophysically relevant energies using a large volume LaBr3:Ce detector"** carried out at TIFR Mumbai, during May 15th to 25th. 2016.
- Participated in the experiment **"Study of $^{12}C(p,p'\gamma)^{12}C$ reaction using proton beam energies 8 to 22 MeV"** carried out at TIFR Mumbai, during June 17th to 25th, 2016.

CONFERENCES/SCHOOLS/WORKSHOPS/MEETINGS ATTENDED

- Participated **62th DAE symposium on Nuclear Physics -2017** held at Thapar University Patiala, Punjab, India during Dec. 19-24, 2017.
- Attended **"Thematic workshop on UNDERGROUND ACCELERATOR BASED NUCLEAR ASTROPHYSICS FACILITY"** organized by UGC-DAE Consortium for Scientific Research, Kolkata, India during May 17th to 18th , 2017.

- Participated **61th DAE symposium on Nuclear Physics -2016** held at Saha Institute of Nuclear Physics (SINP), Kolkata- 700064, West Bengal, India during Dec. 5-9, 2016.

- Attended **60th DAE symposium on Nuclear Physics -2015** held at SSSIHL, Prashanti Nilayam-515134, AP, India during Dec. 7-11, 2015.

- Participated in SERC School on "**Modern Theories of Nuclear Structure**" during 23rd Feb.to 5th March, 2015 at IIT-Roorkee.

- I have attended **CNT Winter School on Nuclear Astrophysics** held at VECC Kolkata from 19th January to 31st January, 2015.

- Attended **59th DAE symposium on Nuclear Physics -2014** held at Banaras Hindu University, Varanasi during Dec. 8-12, 2014.

- Attended "**Nuclear Structure School-2014**" held at IUAC New-Delhi during 20th April to 27th April, 2014.

- Participated in **DAE International symposium on Nuclear Physics -2013** held at BARC, Mumbai during 1st December to 6th December 2013.

- I have taken part in SERC School on **"Modern Theories of Nuclear Reactions"** during 23rd September to 4th October 2013 at Department of Physics, Indian Institute of Technology Roorkee.

- Attended **"PARIS" (Photon Array for studies with Radioactive Ion and stable beams)** India collaboration meeting which was held at Tata Institute of Fundamental Research, Mumbai during January 9th to 12th, 2013.

- Participated in the DST-SERC School on **"Modern trends in Nuclear structure and dynamics"** organized by Department of Physics, Indian Institute of Technology Roorkee, Roorkee – 247667, India during the period 6th February to 24th February'2012.

- Attended **"National conference on advanced in Physics"** held at IIT Roorkee, Department of Physics from 25th February to 26th February' 2012.

- Take part in the School cum Workshop on **"Workshop on Recent Trends in Nuclear and Particle Physics (WRTNPP-2011)"** organized by Department of Physics, Banaras Hindu University (BHU), Varanasi-221005, India during the period 7th March to 13th March'2011 under UGC Networking Program.

- Participated in the **"Young Scientist Research Programme" (YSRP' 2010)** at Raja Ramanna Centre for Advanced Technology, Indore during 17th May-9th July 2010.

COMPUTER SKILLS

- **PROGRAMMING LAGUAGES:** C++, ROOT, Fortran, MATLAB.
- **SOFTWARES EFFICIENCIES:** GEANT4 Simulation, Radware, Xmgrace, Gnuplot, Latex, MS Office.
- **OPERATING SYSTEMS:** Linux, Windows.

List of Publications

(a) Journals - International

1. **M. Dhibar,** D. Mankad, I. Mazumdar, G. Anil. Kumar, *" Efficiency calibration and coincidence summing correction for a large volume (946cm^3) LaBr$_3$ (Ce) detector: GEANT4 simulations and experimental measurements"* Applied Radiation and Isotopes 118, (2016) 32.

2. **M. Dhibar**, I. Mazumdar, G. Anil Kumar, S. M. Patel, P. B. Chavan. *"Characterization of a 2 ×2 array of large square bars of LaBr$_3$:Ce detectors with γ-rays upto 22.5 MeV "*. Nuclear Inst. and Methods in Physics Research, A 883 (2018) 183–190.

3. V. Ranga, S. Rawat, Snigdha Sharma, ….,**M. Dhibar**, G. Anil Kumar. "Intrinsic Resolution of Compton Electrons in CeBr$_3$ Scintillator Using Compact CCT". IEEE TRANSACTIONS ON NUCLEAR SCIENCE, VOL. 65, NO. 1, JANUARY 2018.

4. Priya Sharma, B.R. Behera, Ruchi Mahajan, Meenu Thakur, Gurpreet Kaur, Kushal Kapoor, Kavita Rani, N. Madhavan, J. Gehlot, S. Nath, R. Dubey, I. Mazumdar, S.M. Patel, **M. Dhibar,** M.M. Hosamani, Khushboo, Neeraj Kumar, A. Shamlath, G. Mohanto and Santanu Pal. *"Evaporation residue cross-section measurements for the ^{48}Ti induced reactions"*. Physical Review C 96, 034613, 2017.
5. **M. Dhibar**, I. Mazumdar, G. Anil Kumar, A. K. Rhine Kumar, S. M. Patel, P. B. Chavan, C. D. Bagdia and L.C. Trivedi. *"Measurement of cross sections and astrophysical S-factors for p(d,^{3}He)γ reaction at astrophysically relevant energies using a large volume LaBr3:Ce detector"*. Submitted to Nuclear Physics A (Manuscript under).

(b) Conferences -International

1. Indranil Mazumdar, S. Basu, P.B. Chavan, D.A. Gothe, S.M. Patel, S. Roy, **M. Dhibar**, A. K. Gourishetty, M.W. Ahmed, A. Kafkarkou, J.M. Mueller, L.S. Myers, M.H. Sykora, H.R. Weller, W. R. Zimmerman *"Studies in Lathanum Bromide Detectors"* ***http://comex5.ifj.edu.pl/abstracts/posters/mazumdar.pdf***
2. **Monalisha Dhibar,** I. Mazumdar and G. Anil Kumar., *"GEANT4 Simulations and Experimental Measurements of Absolute Source Activity using Modified Sum-Peak method"* conference proceedings, in 2015 IEEE Nuclear Science Symposium and Medical Imaging Conference, SANDIEGO, US.

(c) Conferences -National

1. **Monalisha Dhibar,** Chandan Singh, Anil Kumar Gourishetty., *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 58 (2013) 956.*
2. **Monalisha Dhibar,** Anil Kumar Gourishetty, S. G. Singh, S. C. Gadkari., *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 59 (2014) 832.*
3. Indranil Mazumdar, S. Basu, **M. Dhibar,** S.M. Patel, S Roy, S.N. Mishra., *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 59 (2014) 980.*
4. S. Roy, I. Mazumdar, P.B. Chavan**, M. Dhibar**, G. Anil Kumar. *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 59 (2014) 994.*
5. Indranil Mazumdar, **M. Dhibar**, D.A. Gothe, P.B Chavan, G Anil Kumar, A.K. Rhine Kumar, P. Arumugam., *Proceedings of the DAE-BRNS Symp. on Nucl. Phys.60 (2015) 114.*
6. N. Goel, **M. Dhibar**, G. Anil Kumar, *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 60 (2015)1024.*
7. Indranil Mazumdar, S. Basu, P. B Chavan, **M. Dhibar,** D. A. Gothe, S. M. Patel, S. Roy, G. Anil Kumar., *Proceedings of the DAE Symp. on Nucl. Phys. 60 (2015) 1082.*
8. K. Thakur, S.K. Anand, S. Mittal, Abhishek, **M. Dhibar,** G Anil Kumar, *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 60 (2015)1034.*

9. Priya Sharma , B.R. Behera1 , N. Madhavan, I. Mazumdar , Ruchi Mahajan, Meenu Thakur , Gurpreet Kaur, Kushal Kapoor, Kavita Rani , J. Gehlot , S. Nath, R. Dubey , A. Shamlath , M.M. Hosamani , Khushboo , Neeraj Kumar , Sameer Patel , S. Roy, **M. Dhibar,** and G. Mohanto, *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 60 (2015) 502.*

10. S. Sharma, V. Ranga, **M. Dhibar**, S. Rawat, G. A. Kumar, *Proceedings of the DAE-BRNS Symp. on Nucl. Phys 61, (2016) 1020.*

11. **M. Dhibar,** G. Anil Kumar, I. Mazumdar, A. K. Rhine Kumar, S. M. Patel, P. B. Chavan, C. D. Bagdia, K. V. Thulasi Ram, W. A. Fernandes, L. C. Trivedi., *Proceedings of the DAE-BRNS Symp. on Nucl. Phys 61, (2016) 874.*

12. Priya Sharma, B. R. Behera, N. Madhavan, I. Mazumdar, Ruchi Mahajan, Meenu Thakur, Gurpreet Kaur, K Kapoor, Kavita Rani, J. Gehlot S. Nath, **M. Dhibar**, S. M. Patel, M. M. Hosamani, *Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 61 (2016) 560.*

13. **M. Dhibar,** *Proceedings of the DAE-BRNS Symp. on Nucl. Phys 61, (2017) 874.*

QUALIFIED NATIONALWIDE ENTRANCE EXAMS

- Participated in **"National Graduate Physics Examination**", 2009 organized by the All India Physics Teachers Association, India and selected among the top10%, & won a certificate.
- Qualified the **Joint Admission test for M.Sc. (JAM-2009**), conducted jointly by
- IITs. Qualified **Graduate Aptitude Test in Engineering (GATE)** exam on 2010.

OTHER ACTIVITIES

- **Life Member of IPA** (Indian Physics Association), Roorkee Chapter, India.
- **IEEE (The Institute of Electrical and Electronics Engineers) Member** since 2013.
- Member of Physics Department organizing team during **Cognizance, 2010** (A Technical Fest) held at Indian Institute of Technology Roorkee, Roorkee, India from March 20-22, 2010.
- Cultural Secretary of **Physics Association,** Department of Physics, Indian Institute of Technology Roorkee, India for the session 2010-2011 and 2013 to 2014.