

Rajnandan Choudhury Das



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RESEARCH PROJECTS

- Quantum Computer Hardware using Defect-free Assembly of Single Atom Array** *2020 - Present*
Ph.D. Thesis work
Supervisor : Dr. Kanhaiya Pandey, Associate Professor, Dept. of Physics, IIT Guwahati
- Temporal Evolution of Laser produced Plasma using Langmuir Probe** *2017 -2018*
Bachelor's Thesis work
Supervisor : Prof. Alika Khare, Professor, Dept. of Physics, IIT Guwahati
- Horizontal Rotation of Nano Dust Cloud in Cylindrically Symmetric Unmagnetized Dusty Plasma** *2016*
Internship project
Supervisor : Prof. Heremba Bailung, Professor, Physical Sciences Division, IASST
- Compact IC Tester Design using Arduino & Visual Basics** *2016*
Self project
- Cricket Scorecard Projection System for Lohit Premier League** *2015*
Self project

RESEARCH AREAS

Laser Cooling and Trapping
Single Atom Array
Quantum Computation

EXPERIENCES

- Prime Minister's Research Fellow (PMRF)** *Sept. 2020 - Present*
Dept. of Physics, IIT Guwahati
- Senior Research Fellow** *July, 2020 - Aug, 2020*
Dept. of Physics, IIT Guwahati
- Junior Research Fellow** *July, 2018 - June, 2020*
Dept. of Physics, IIT Guwahati
- Summer Intern** *May, 2016 - July, 2016*
Institute of Advanced Study in Science & Technology Guwahati

EDUCATION

- Ph.D. Physics** *9.54 / 10 Since 2018*
Dept. of Physics, IIT Guwahati
- B.Tech. Engineering Physics** *8.44 / 10 2014- 2018*
Dept. of Physics, IIT Guwahati
- Higher Secondary** *91.6 % 2011- 2013*
Cotton College, Guwahati
- High School Leaving Certificate Examination** *87.3 % 2010- 2011*
Sankardev Sishu Vidya Niketan Ambari

PUBLICATIONS

- Narrow-line cooling of 87Rb using 5S1/2 → 6P3/2 open transition at 420 nm**
R. C. Das, D. Shylla, A. Bera, K. Pandey, arXiv preprint 2205.040454 (2022)
- Effect of detuning on velocity induced population oscillation**
D. Shylla, E. O. Nyakango, R. C. Das, K. Pandey, Eur. Phys. J. D (2022) (*Accepted*)

AWARDS

- AWSAR Award** *Feb, 2022*
Dept. of Science & Technology, Govt. of India
- Shyama Prasad Mukherjee (SPM) Fellowship** *Dec, 2021*
Council of Scientific and Industrial Research (CSIR)
- Prime Minister's Research Fellowship** *Sept, 2020*
Ministry of Education, Govt. of India
- MHRD Teaching Assistantship** *July, 2018 - Sept, 2020*
Ministry of Human Resource, Govt. of India
- Institute Merit-cum-Means Scholarship** *2015 - 2016*
Indian Institute of Technology Guwahati
- Chief Minister's Scheme for Financial Assistance to Meritorious Students of Assam** *2014 - 2015*
Chief Minister, Govt. of Assam
- Chitra Visharad Award** *2011 -2012*
Pracheen Kala Kendra, Chandigarh
- Anundoram Borooh Award** *2011*
Education Dept, Govt. of Assam

TEACHINGS

Mathematical Physics: III	B.Sc. 4 th Sem.	2022
Dept. of Physics, North Gauhati College		
Mathematical Physics: I	B.Sc. 1 st Sem.	2021
Dept. of Physics, North Gauhati College		
Mathematical Methods:	B.Sc. 3 rd & 5 th Sem.	2021
Dept. of Physics, North Gauhati College		
Solid State Physics:	B.Sc. 6 th Sem.	2021
Dept. of Physics, North Gauhati College		
Adv. Math. Physics I:	B.Sc. 5 th Sem.	2021
Dept. of Physics, North Gauhati College		

TUTORIAL SESSIONS

PH 101: Physics – I	Since 2019
B.Tech. 1 st Sem, IIT Guwahati	
PH 102: Physics – II	Since 2019
B.Tech. 2 nd Sem, IIT Guwahati	

POSITIONS OF RESPONSIBILITY

Mentor	Since 2018
B.Tech. Engineering Physics and M.Sc. Physics, IIT Guwahati	
Teaching Assistant	Since 2019
B.Tech. 1 st Year, IIT Guwahati	
Course Instructor	Since 2021
B.Sc. Physics Major, North Gauhati College	
President	2020 - 2021
SPIE IIT Guwahati Student Chapter	
Technical Secretary	2019- 2020
SPIE IIT Guwahati Student Chapter	
Volunteer	2016
Pratham Khuj	
City-Representative	2014
Udaan, Alcheringa	

INTERESTS

Teaching Physics & Maths
 Playing Cricket
 Playing Chess
 Sketching
 App. Development
 Physics for Daily-life

GOAL : SCIENTIST

ACADEMIC ACHIEVEMENTS

- Secured the **Certificate of Quantum Excellence** in 2021 Qiskit Global Summer School on Quantum Machine Learning organized by IBM
- Qualified **CSIR-UGC NET JRF** 2019 in Physical Sciences with AIR **04**
- Qualified **GATE** 2019 in Physics with AIR **209**
- Completed Ph. D. course work in 2018 with department rank **01**
- Qualified **IIT-JAM** 2018 in Physics with AIR **172**
- Completed B.Tech. in Engineering Physics in 2018 with department rank **05**
- Qualified **JEE MAIN** 2014 and **JEE Advanced** 2014 with **99+** percentile.....
- Qualified **CEE** 2013 with state rank **88**
- Qualified **JEE MAIN** 2013 paper-I with state rank **67**
- Qualified **JEE MAIN** 2013 paper-II with state rank **55**

CONFERENCE/SCHOOLS ATTENDED

Student Conference on Optics and Photonics 2021,	Nov. 2021
Organized by PRL Ahmedabad	
QISKIT Global Summer School on Quantum Machine Learning	July, 2021
Organized by IBM	

CONFERENCE/ WORKSHOPS/ LECTURE SERIES/ WEBINERS/ COMPETITIONS ORGANIZED

Optics is Not only about Optics anymore 2.0	Nov, 2020
Speaker: Prof. Sile Nic Chormaic , OIST Graduate University, Japan	
Lecture	
Fantastic PHYSICS & How to Find Them!	Nov, 2020
Speaker: Prof. HC Verma , Padma Shri 2020	
Lecture	
Optics is Not only about Optics anymore.	Nov, 2020
Speaker: Dr. Biswajit Pathak , University of Oxford	
Lecture	
Fantastic THESES & where to find them!	Oct, 2020
A Lecture Series for the research scholars and master students.	
Design BRAIN-MAP & win rewards!	Oct, 2020
A competition for school and UG students for promoting science.	
Let's write in 3D!	Oct, 2020
A competition for school and UG students for promoting technical skills.	
Iron-Man to Spiderman: What if they were teachers!	Oct, 2020
A popular talk for school and UG students to encourage them towards scientific thoughts.	
Breaking Barriers in Science!	Oct, 2020
A lecture series cum interactive session to celebrate World Mental Health Day.	
Optics through Problems.	Aug, 2020
An online quiz competition to popularize optics among high school students.	
Virtual Conference on the International Day of Light	May, 2020
Day long event with participation from thousands of students and faculty members.	
SPIE Student's Symposium V: Bodoland University	Nov, 2019
Day long event with participation from school, college and university students.	