

ANKIT RANA

Doon University, Dehradun

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OBJECTIVE

Curious and dedicated physics major seeking a teaching opportunity to enhance my academics knowledge and to gain teaching experience and essential skills to build my career as a physics teacher.

EDUCATION AND TRAINING

Courses / Education	Institute / University	Year of Passing	Performance
M.Sc. in Physics	Doon University	2024	Cumulative performance index= 8.50/10.0
B.Sc. (Hons) Physics	Doon University	2022	8.01/10 CGPA
Science, 12 th	Saraswati Vidya Mandir Inter College, Uttarkashi	2019	90% (450/500)
Matriculation, 10 th	Saraswati Vidya Mandir Inter College, Uttarkashi	2017	96.8% (484/500)

PROJECTS

Investigation of Iron-Nickel alloys using Electronic Structure calculations.

[Jan 2024– present].

- Using *Quantum ESPRESSO* software that simulates the systems of Fe and Ni alloys.
- Using *DFT calculations* for the electronic structure.
- Calculated the energy and measured stability of the unit cell at different values of different parameters (e.g. lattice parameters, ecutrho , ecutwfc and k-points)
- Gaining more experience using LINUX, GNUPLOT, VESTA, etc.

Simulation of Planetary Motion in a Binary star system using computational methods.

[21/11/2022 - 20/12/2022]

- It is a three-body problem having two stars and a planet orbiting them in different paths. Different initial conditions were tried to find some stable orbits.
- Runge- Kutta method and FORTRAN programming language were used to simulate the motion of the system.
- Gained knowledge of the three-body problem, FORTRAN programming language, GNU plot and Runge-kutta method.

TECHNICAL SKILLS

Software: - Quantum Espresso, GNU plot, VESTA, CodeBlocks, ORCA, BURAI, MS Office.

Programming Languages: - Basics of Python, FORTRAN, Shell Scripting and C++.

Methods Used: - DFT(Density Functional Theory), Runge Kutta Method.

SCHOLASTIC ACHIEVEMENTS

	Achievements	Year
1	Qualified USET with 59.33%	2024
2	Awarded INSPIRE scholarship from DST, Govt. Of India every year (Eligible for DST-INSPIRE fellowship)	2020-present
3	Scored among the top 1% marks in 12 th standard	2019
4	Acquired 7 th rank in 10 th boards exam	2017

MENTORSHIP ROLES

Physics tutor at High Performance Centre [1 Jan 2023 – 30 Mar 2023]

Taught school students physics for board exams of CBSE and ICSE. Advised them on homework, projects, question-solving skills, understanding physics better, etc.

Took tuition at my home [May 2020 – August 2022]

Taught students of class 8th to 12th. Guided them for their higher studies.

WORKSHOPS/ TRAINING/ CERTIFICATION

1- Attended **AIP Hands-on Training on “QUANTUM LEAP: DFT CODE MASTERY”** of two days on 11th and 12th May 2024.

2- Attended **Numerical Computation, Modelling, and Simulation with Python** workshop on April 15th, 2023 in Doon University, Dehradun.

3- Participated in the **Professional Advancement Program for Indian Women Researchers in STEM** during June 02 – 03,2022 at Doon University, Dehradun.

4- Attended **3rd Dehradun International Science and Technology Festival 2022** on 23rd April 2023 at Dehradun.

5- Attended **INSPIRE Science Camp** of 7 days at HNBGU Srinagar Campus in **December 2018**.

6- Attended **NSS (National Service Scheme) Camp** in **Jan 2019** for 7 days in Chinyalisaur, Uttarkashi.

REFERENCES

1- Dr. Vikas Sharma: - Assistant Professor, Doon University, Dehradun.

Contact- vsharma.ph@doonuniversity.ac.in

2- Dr. Himani Sharma: - Associate Professor, Head of Department, Doon University, Dehradun.

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