

Prabal Modi

B.Tech. Metallurgical and Materials Engineering
UG (III Year I Semester)
IIT Roorkee, Uttarakhand, India-247667

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ACADEMIC DETAILS

Year	Degree/Examination	Institution/Board	CGPA/Percentage
2019	B.Tech. (Till 5 th semester)	Indian Institute of Technology Roorkee	7.84/10
2017	Class XII	Madhya Pradesh Board of Secondary Education	86.2%
2015	Class X	Indian Certificate of Secondary Education (ICSE) Board	89.5%

TECHNICAL SKILLS

- **Computer Languages:-** Python, C++, \LaTeX
- **Software Packages:-** MATLAB, X'Pert HighScore, Origin
- **Utilities:-** Git, Vim, VS Code, Jupyter, Linux shell utilities

RESEARCH EXPERIENCE

- **Performance analysis of low-bandgap perovskite solar cells using ML tools** *January'20 to present*
(Guide: [Dr. Abhishek Tewari](#))
 - Currently working on extraction of performance datapoints from publications on the (organo)-lead-halide perovskite solar cell for creation of database.
 - The aim is to capture the major patterns in the past and analyze the database using machine learning tools to develop heuristics and models to predict the cell performance.
- **Evaluation of recycling potential of discarded Photovoltaic Modules** *July'19 to November'19*
(Guide: [Dr. Nikhil Dhawan](#))
 - Cu-Sn wires were manually recovered, Si and Ag values were upgraded in the crushed feed by means of density-based water fluidization technique.
 - Hydrometallurgical route recovered Ag values in the form of AgCl (purity> 99%) and the resulting residue consisted of more than 99% Si values.
 - Research paper under review in **Journal of Materials Cycles and Waste Management**.
- **Grinding studies of Banded Iron Ores** *August'19 to October'19*
(Guide: [Dr. Nikhil Dhawan](#))
 - Simulation of grinding of banded iron ores was investigated in order to identify the optimal mill operating parameters.
 - Population balance modeling was used to determine the specific rate of breakage and the cumulative breakage parameters.
- **Recovery of Metal Values from discarded Li-ion batteries** *May'19 to July'19*
(Guide: [Dr. Nikhil Dhawan](#))
 - Assessed the feasibility of recovery of cobalt and manganese values from discarded Li-ion batteries.
 - Studied the thermodynamics of process along with experiments with an attempt to understand the mechanism of the process.
 - Project was done as a part of **Summer Research Internship** provided by Design and Innovation Center - IIT Roorkee.

ACHIEVEMENTS

- Awarded with HoD's Letter of Appreciation for highest improvement in SGPA in Academic Session 2018-2019.
- Secured All India Rank - 4707 in JEE-Advanced, 2017 among 0.2 million students.
- Secured All India Rank - 12163 in JEE-Mains, 2017 among 1.2 million students.
- Awarded with MP Board meritorious student scholarship.

POSITIONS OF RESPONSIBILITY & EXTRA-CURRICULARS

- **UG Representative in DAPC(Department Academic Program Committee)** *August'19 to Present*
 - Represents undergraduates in DAPC(Department Academic Program Committee) meeting.
 - Assists in setting up courses, syllabus, and curriculum for undergraduates.
- **Executive Member | Cultural Affairs Committee, IIT Roorkee** *October'17 to Present*
 - Planned and managed flagship of cultural events of IIT Roorkee.
 - Coordinated with students for pre-event and post-event management including reimbursements, certificates, invitations, posters etc.
- **Cadet, NCC, IIT Roorkee** *July'17 to July'18*
 - Enrolled as a cadet in National Cadet Corps(NCC) 3UK CTR
 - Participated in various activities like firing, training, parading, etc.
- **Voluntary Member | SOPAN group, IIT Roorkee** *July'18 to Present*
 - Conducts and participate in weekly discussions on topics such as Human Psychology, Sociology, Economics, Modern Science, and Technology.
 - Regular visit to rural areas of society to witness the grass root level problems. We closely study the systems evolved to tackle these challenges alongside ideating technological solutions to address the aforementioned problems without disrupting indigenous way of life.

REFERENCES

- **Dr. Nikhil Dhawan**
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