Shikhar Arvind

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Education

2015–present **BSc**, *Indian Institute of Science*, Bengaluru.
- 4th Year UG , **Materials Science and Engineering Major**
- CPGA : 6.3/8- **Ranked first amongst the Materials Majors as of Jan-April 2018**
- **Relevant Courses:**
  - Material Synthesis (Crystal growth)
  - Electronic Properties of Materials
  - Functional Properties of Materials
  - Electron Microscopy
  - Materials Thermodynamics
  - Materials Kinetics

High School (11th and 12th Grade), *VVS Pre University College*, Bengaluru.
- KVPY National Level Rank : 106
- Karnataka CET(State Level Medical Entrance Exam): 327

Primary and High School, *Venkat International Public School*, Bengaluru.
- CGPA(10th Grade CBSE Curriculum): 10/10

Experience

Research

July 2018 - present **Bachelor's Thesis**, *Institute of Microstructure, Karlsruhe Institute of Techonology*, Karlsruhe,Germany.

Encapsulation strategies for Perovskite solar cells (PSC)
Supervisor : *Dr. Ulrich W. Paetzold*
PSC have made rapid progress in terms of efficiency and manufacturing methods in the past decade with the reported efficiencies over 20 %. Whilst this is great a thrust for the commercialization of PSC, there are still some major problems with regards to stability of the cells. Encapsulation is one of the methods to improve the stability and lifetime of PSC and this project involves testing different methods and encapsulants for the optimal encapsulation strategy for PSC.

May - July 2017 **Summer Research Project**, *Materials Research Center, Indian Institute of Science*, Bengaluru,India .

Solvothermal Synthesis of Tellurium(Te) Nanotubes and Lead Telluride(PbTe) as a thermoelectric device and its growth mechanism
Supervisor : *Prof. N Ravishankar*
In today's world, energy waste by industries is a big concern. Most of the energy thrown out by the industries is in the form of heat. This is where thermoelectric devices are most useful. They convert the heat output into usable electrical energy. PbTe is one such thermoelectric material which has been shown to convert thermal energy with reasonable efficiency. Different methods are being employed to increase this efficiency and one such method is nanostructuring PbTe. In this project, we aimed at economical methods to synthesize PbTe nanotubes and understand its growth mechanism.

November 2015 **VIJYOSHI**, *Indian Institute of Science*, Bengaluru,India .

National Science Camp
National science camp organized by Department of Science and Technology (DST), Govt. of India. Attended interactive lectures presented by professors from various universities worldwide, on modern research areas and techniques.

Community

June 2017 **Voluntary Work**, Bijapur,Karnataka.
In the present day and age, the mentality of the youth of India is primarily constricted to pursue medicine or engineering. This is quelling the research potential from this huge population of youth in India. To help this situation I volunteered to deliver talks and speeches at various schools in the city of Bijapur, Karnataka, India to increase the awareness among students and adults on pursuing **"Research as a career in India"**.

2016 **Notebook Drive**.
Facilitator, NoteBook Drive (NBD) Programme, IISc : This is a student run voluntary organization to promote science education among students of the underprivileged sections of society in and around Bengaluru by creating awareness and motivating 10th standard students towards higher education.

Achievements and Leadership

- Fellow of KVPY (Kishore Vaigyanik Protsahan Yojana),a National Program of Fellowship in Basic Sciences, initiated and funded by the Department of Science and Technology, Government of India, to attract exceptionally highly motivated students for pursuing basic science courses and research career in science.
- GRE General Test (2018) - 321/ 340 , Verbal section - 160/170 and Quantitative section - 161/170
- Scored highest in High School for academics - Class X.
- Took initiative to increase the awareness of students and adults on pursuing research as a career in a smaller town of India.
- Was House Captain in High School and an active member of student council.

- Member of the gaming committee which organized a state-wide **"E-Sports Event"** ***(Counter Strike: Global Offensive)*** as a part of the annual fest Pravega organized by undergrads at IISc.

Skills

Languages	English, Hindi, Kannada
Programming	C, Java, Python, Algorithms
Miscellaneous	Adobe Photoshop, Linux, TEM Analysis

Interests

Research

- Functional nanomaterials synthesis and characterization
- Energy Materials
- Novel materials for semiconductor devices

Personal

- Computers - Hardware and Software
- Competitive E-Sports - Counter Strike : Global Offensive
- Calisthenics, Swimming, Trekking

References

Available on request.