

Alex Shaji

Research Scholar

✉ alexshaji22@gmail.com ☎ +918078375531

Education

August 2017 – Ongoing	IISER Thiruvananthapuram <i>BS-MS in Physics Major (5-year course)</i> <ul style="list-style-type: none">Completed 4 years of Bachelors and Masters courseworkCurrently pursuing Final year Major Project (till May 2022)
August 2017 – September 2021	Undergraduate Record – Integrated BS-MS program <ul style="list-style-type: none">Overall GPA [at the end of 4 years] : 8.55/10
Till March 2017	School Record – CENTRAL BOARD OF SECONDARY EDUCATION (CBSE) <i>All India Secondary School Exam (AISSE-2015) : 10/10 GPA</i> <i>All India Senior School Certificate Exam (AISSCE-2017) : 93.8</i>

Research Experience

MAJOR PROJECT Asst. Prof. Dr.Bikas C Das IISER Thiruvananthapuram August 2021 – Ongoing	SEMI-TRANSPARENT SOLAR CELL DESIGN USING SILVER NANOWIRE BASED TRANSPARENT TOP ELECTRODE <i>Optimising silver nanowires for functioning as the transparent top electrode in a photovoltaic device</i> <ul style="list-style-type: none">Characterisation techniques such as Scanning Tunneling Microscopy, Atomic Force Microscopy were performed on photovoltaic thin films.Techniques learned : Substrate cleaning, Materials preparation, UV-ozone treatment, doctor blading, spin coating, Performance analysis using Solar simulator
RESEARCH INTERN Prof. Dr.Joby Joseph IIT Delhi January 2021 – July 2021	An Overview of Photonic Structures <ul style="list-style-type: none">Irradiance profiles and Fabrication techniques of Photonic Structures were studied.MATLAB software was used for generating these structures
RESEARCH INTERN Assoc. Prof. Dr.Jobin Cyriac IIST Thiruvananthapuram 2019 May to 2019 July	Low Energy Cluster Beam Deposition System: A SIMION Approach <ul style="list-style-type: none">Using SIMION software to study about Ion Beam Deposition.This technique is used to prepare thin films, which is different from usual deposition techniques such as spin-coating and drop-casting
RESEARCH INTERN Asst.Prof Dr. Shadak Alec IISER Thiruvananthapuram May 2018 – July 2018	Thin film Characterization Studies <ul style="list-style-type: none">Synthesis and Optimisation of PDMS,PVA and PVK thin films for Opto-electronic ApplicationsPreparation of PDMS, PVA and PVK thin films and optimisation of thickness using spin coating.
Course project Prof. Dr.Hema Somanathan IISER Thiruvananthapuram August 2017 – November 2017	Colour learning in Fish : A Study <ul style="list-style-type: none">Examine whether Zebra fish can learn colour and associate it with food.Measured various parameters and analysed the data graphically

Conferences and Seminars

INTERNATIONAL CONFERENCE
22nd – 23rd July 2019

International workshop on Advances in 2D Materials (IW2DM)
IISER Thiruvananthapuram

WEBINAR
5th September 2021

Semiconductor Nanostructures for Optoelectronics Applications
Speaker: Prof. Chennupati Jagadish, Australian National University
IEEE Photonics Chapter Bombay Section

Experimental Expertise

Nanodevices Fabrication and
characterization techniques

- Proficient in : Physical vapour deposition, Magnetron sputtering deposition, Pulsed layer deposition, Spray Pyrolysis, Spin coating, Dip coating, Spray coating, semiconductor electrical characterization, Raman spectroscopy, UV-Vis spectroscopy, Optical Spectroscopy, Scanning Tunneling Microscopy
- Familiar with : TEM imaging, SEM imaging, XRD, XPS, FT-IR

Software and Computational
Skills

- Proficient in Python, Matlab, Originlab, Latex, Labview
- Familiar with Comsol, ImageJ
- Familiar with C++ , Mathematica, Blender

Field of Interest

• Condensed Matter Physics • Semiconductor Physics • Thin-film Characteristics • Optoelectronic Devices • Nano-device fabrication and characterization

Important course work

• Condensed Matter Physics • Advanced Physics Experiments Lab • Semiconductor Physics and Technology • Experimental Methods • Computational Techniques and Programming

References

- 1) | Dr Jobin Cyriac
Associate Professor, IIST Thiruvananthapuram
jobincyriac@iist.ac.in
- 2) | Dr Joby Joseph
Professor, IIT Delhi
joby@iitd.ac.in
- 3) | Dr Bikas Das
Associate Professor, IISER Thiruvananthapuram
bikas@iisertvm.ac.in