DR. SHAMJID P

Designation: Assistant Professor
Qualification: PhD in Physics
Email-ID: pshamjid@gmail.com

He has completed his Postgraduation in Physics from Farook College, University of Calicut, and earned a Doctorate in Physics from NIT Calicut in 2019. His doctoral research focused on improving the performance of polymer solar cells by using metal nanostructures' plasmonic effects. With a research experience of five years in the field of Organic/polymer solar cells, he has specialized in fabricating, characterizing, and simulating Plasmonic Polymer Solar Cells. He is also skilled in synthesizing metal nanostructures using a wet-chemical process. Additionally, he is proficient in optical simulations using the Finite-Difference Time-Domain (FDTD) method and has expertise in utilizing Lumerical simulation software. His work has been recognized through the publication of six papers in international peer-reviewed journals and seven papers in international conferences. He is particularly interested in teaching subjects such as Quantum Mechanics, Nuclear Physics, Condensed Matter Physics, and Electrodynamics.

EDUCATION

Assistant Professor	SAFI Institute of Advanced Study, Kerala, India (2023 - Present)
Assistant Professor	Dayapuram Arts and Science College, Kerala, India (2021 – 2023)
Content Writer	Sree Narayanaya Guru Open University, Kerala, India (2020 – 2021)
Guest Lecturer	MES Mampad College, Kerala, India (2019 – 2020)
PhD in Physics	NIT Calicut, Kerala, India (2013 – 2019)
MSc Physics	Farook College, Kerala, India (2010 – 2012)
BSc Physics	MES Mampad College, Kerala, India (2007 – 2010)

RESEARCH INTERESTS

- Organic and Perovskite solar cells
- Plasmonic structures and devices
- Synthesis of metal nanoparticles
- Finite-Difference Time-Domain (FDTD) method for optical simulations

PUBLICATIONS

Journals

1. **Shamjid P**, Anjusree S, Yoosuf Ameen M and V S Reddy, "Performance enhancement of polymer solar cells by incorporating Ag nanoparticles at an indium tin oxide/MoO3 buffer layer interface," Semiconductor Science and Technology 32, 065010 (2017). (https://iopscience.iop.org/article/10.1088/1361-6641/aa6e9e)
2. **Shamjid P**, Abhijith T, Vivek P, Joel C S and V S Reddy, "Plasmonic effects of Ag nanoparticles for absorption enhancement in polymer solar cells with MoO3 passivation layer," Physica B: Condensed Matter 560, 174-184 (2019). (https://www.sciencedirect.com/science/article/abs/pii/S0921452619300523)
3. Abhijith T, **Shamjid P**, and V S Reddy, "Influence of Ag Nanostructure Location on the Absorption Enhancement in Polymer Solar Cells," ACS Applied Materials and Interfaces 10, 32483-32491 (2018). (https://pubs.acs.org/doi/10.1021/acsami.8b13560)
4. Abhijith T, **Shamjid P**, and V S Reddy, "Multi-positional silver nanostructures for high absorption enhancement in polymer solar cells," Organic Electronics 73, 311-316 (2019). (https://www.sciencedirect.com/science/article/abs/pii/S1566119919303271)
5. Yoosuf Ameen M, **Shamjid P**, Abhijith T and V S Reddy, "Solution-processed transition metal oxide anode buffer layers for efficiency and stability enhancement of polymer solar cells," Optical Materials 75, 491-500 (2018). (https://www.sciencedirect.com/science/article/abs/pii/S0925346717306948)
6. Yoosuf Ameen M, **Shamjid P**, Abhijith T, Thulasi Radhakrishnan and V S Reddy "Stability enhancement of P3HT:PCBM polymer solar cells using thermally evaporated MoO3 anode buffer layer," Physica B: Condensed Matter 530 (2018), 201–207. (https://www.sciencedirect.com/science/article/abs/pii/S0921452617309456)

Conferences

1. **Shamjid P** and V S Reddy, "Efficiency enhancement of PCDTBT:PCBM polymer solar cells by plasmonic effects of Ag nanoparticles," XIX International Workshop on The Physics of Semiconductor Devices (IWPSD), Indian Institute of Technology (IIT) Delhi, New Delhi, India (2017).
2. **Shamjid P** and V S Reddy, "Plasmonic effects of Ag nanoparticles for efficiency enhancement of P3HT:PCBM based polymer solar cells," Fourth International Conference on Nanostructured Materials and Nanocomposites (ICNM), Mahatma Gandhi University, Kottayam, Kerala, India, p. 213 (2017).
3. **Shamjid P** and V S Reddy, "Molybdenum oxide anode buffer layer for P3HT:PCBM based polymer solar cells," International Conference on Sustainable Environment and Energy (ICSEE), Hindustan University, Padur, Chennai, India, p. 134 (2017).

4. **Shamjid P**, Lakshmi Rajan, Yoosuf Ameen M and V S Reddy, "Effect of substrate temperature on organic solar cell characteristics," International Conference on Energy Harvesting, Storage and Conversion (IC-EEE), Cochin University of Science and Technology, Cochin, Kerala, India, p.71 (2015).
5. Abhijith T, **Shamjid P** and V S Reddy, "Light absorption enhancement in P3HT:PCBM based polymer solar cells by embedding Ag nanostructures within the active layer," International Conference on Advanced Nanostructures (ICAN), Catholicate College, Pathanamthitta, Kerala, India, p.68 (2018).
6. Yoosuf Ameen M, **Shamjid P**, and V S Reddy, "Tris(acetylacetonato) ruthenium (III) as cathode buffer layer in CuPc/PTCDI-C8 based small molecular organic solar cells," International Conference on Energy Harvesting Storage and Conversion (IC-EEE), Cochin University of Science and Technology, Cochin, Kerala, India, p. 59 (2015).
7. Abhijith T, **Shamjid P** and V S Reddy, "Synthesis of silver nanoparticles for organic bistable memory device applications", International Conference on Nanoscience and Nanotechnology (ICONN), SRM University, Chennai, India, International Journal of ChemTech Research 7, p. 1000 (2015).
8. **Shamjid P**, "Growth and characterization of KDP crystals", UGC Sponsored National Conference on Emerging Trends in Theoretical and Experimental Physics, Farook College, Kerala, India (2012)

FACULTY DEVELOPMENT PROGRAMMES ATTENDED

- Two-week Hybrid FDP: Sustainable and Robust Electrochemical Technologies for Industrial Applications, ATAL Academy, NIT Calicut, Kerala (21st Nov – 2nd Dec 2022)
- One-week Online FDP: E-Content Development, Ramanujan College, University of Delhi (20th Aug – 26th Aug 2022)
- Ten-day Online FDP: Hands-on Training on Moodle Administration, SNM College Maliankara, Ernakulam, Kerala (17th Aug – 26th Aug 2020)

MAJOR INVITED TALKS

- Workshop on "Python Programming" conducted by the School of Linguistics on 11th March 2022.
- Preconference workshop on "Scientific Research Writing" organized by MESMAC Center for Interdisciplinary Studies, MES Mampad College on 19th Sep 2019

AWARDS AND ACHIEVEMENTS

- Attained a commendable achievement by passing the C-level examination in the National Cadet Corps (NCC) program.
- Successfully cleared the Graduate Aptitude Test in Engineering (GATE-2013) in the field of Physics.
- Achieved the honour of serving as the chairperson for a scientific research paper presentation section at the esteemed MESMAC international conference.