Faculty Profile

Dr. SAJAN. P

Assistant Professor

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Google Scholar:- https://scholar.google.co.in/citations?user=ReaePwYAAAAJ&hl=en

Researchgate:- https://www.researchgate.net/profile/Sajan-p

LinkedIn:- https://www.linkedin.com/in/dr-sajan-p-a79b89162/

Personal Information

Nationality	:	Indian
Date of Birth	:	03/05/1988
Gender	:	Male
Marital Status	:	Married
Permanent Address	:	Palangadan House, Kambalakkallu P.O, Mamankara, Nilambur, Malappuram, 679333

Educational Qualifications

- **Postdoctoral Research (PDF)** from Cochin University of Science and Technology (CUSAT) Kochi, Kerala **(2019-2021)**
- **PhD (Physics**) from Cochin University of Science and Technology (CUSAT) Kochi, Kerala **(2010-2017)**.
- **CSIR-UGC NET (Physics), June 2015**
- **M.Sc (Physics) with first class** from Cochin University of Science and Technology (CUSAT) Kochi, Kerala, with **first class (2008-2010)**
- **B.Sc (Physics)** from Marthoma College, Chungathara, Malappuram (Affiliated to University of Calicut) with **first class (2005-2008)**
- **AISSCE (XII th - Science)** from Jawahar Navodaya Vidyalaya, Malappuram (CBSE) with **first class (2005)**
- **AISSE (X th)** from Jawahar Navodaya Vidyalaya, Malappuram (CBSE) with **first class (2003)**

Experiences

1. **Assistant Professor,** Devaswom Board Pampa College, Parumala, Pathanamthitta Dist., Kerala – From 30/07/2021 onwards.
2. **Assistant Professor (F.D.P)** – From 12/07/2017 to 28/06/2019 – T. M. Govt. College, Tirur, Vakkad, Malappuram, Kerala, India 676502

3. **Technical Assistant** (December 2016 – July 2017): Department of Physics, Cochin University of Science and Technology (CUSAT), Kochi, Kerala, India, 682022- **FESEM, XPS, XRD, UV Vis NIR Spectrophotometer, Flurimeter (PL), FTIR, and Stylus Profilometer (Thickness measurement of thin films) instrument operator**

Other Qualifications

Recipient of Rajiv Gandhi National Fellowship, UGC, Govt. of India.

Title of thesis:

"Solvo-hydrothermal growth and photoluminescence studies of micro and nano structured Zinc Sulfide for bio-imaging applications".

M. Sc Project:

Title: **"On the Prospects of Conducting Polyaniline for Effective Electromagnetic Shielding Applications**"

Projects Guided:-

1. Effect of CTAB on the crystal structure and morphology of hydrothermally grown cubic ZnS – M. Sc Physics, Calicut University, Kerala India, 2018
2. Effect of CTAB on the optical properties and morphology of hydrothermally synthesized ZnS- M. Sc. Physics, Calicut University, Kerala, India, 2018
3. Synthesis and DRS study of chemically synthesized ZnS particles via molarity variation, B. Sc. Physics, Calicut University, Kerala, 2018.
4. Effect of molarity on the X-ray diffraction studies of chemically synthesized ZnS particles- B. Sc. Physics, Calicut University, Kerala, India, 2018.
5. X-Ray diffraction studies of chemically synthesized ZnO nanoparticles - B. Sc. Physics, Calicut University, Kerala, India, 2019.
6. Concentration, Wavelength and Temperature dependent refractive index of sugar solutions:- B. Sc. Physics, Calicut University, Kerala, India, 2019.
7. On the prospects of wavelength determination of LEDs.: B. Sc. Physics, Calicut University, Kerala, India, 2019.
8. Structural and Optical and Morphological Studies of ZnO nanostructures grown at different temperatures by wet chemical method". **M. Sc Project, MG University Kottayam, 2022.**
9. On the prospects of Structural, Optical and morphological studies temperature assisted grown ZnS nanoparticles, **M. Sc Project, MG University Kottayam, 2022.**
10. Effect of PVP in the structural, morphological, and photoluminescence properties of ZnO nanostructures synthesised by chemical precipitation method, **M. Sc Project, MG University Kottayam, 2023.**

11. Structural, morphological, and photoluminescence properties of PVP assisted ZnO nanostructures synthesized by chemical precipitation method, **M. Sc Project, MG University Kottayam, 2023.**

Fields of major scientific interests

- Nanomaterials, semiconductors and dichalcogenides for electronic, magnetic and energy applications,
- Emerging 2-D materials
- Biological materials
- Semiconducting thin films for optoelectronic and magnetic applications
- Nanophosphors and metal oxide nanostructures.
- Conducting polymers

Special Skills

Hands on experience in different characterization tools like

- X-Ray Diffractometer (XRD)
- Field Emission Scanning Electron Microscope (FE-SEM)
- UV-Visible-NIR spectrophotometer
- Fluorescence Spectrometer
- FTIR Spectrophotometer
- FT-Raman Spectrophotometer
- Stylus Profilometer
- High Resolution X-Ray Diffractometer (HRXRD)
- Atomic Force Microscope
- Four and two probe for conductivity measurement

International peer reviewed journal publications

1) "Boosted UV emission at 349 nm from mesoporous ZnS"

   P. Sajan, Junaid M. Bushiri, R. Vinod, Appl. Phys A, **113,**2,321(2013). **IF: 2.584 (2020)**

2) "High luminescent yield from Mn doped ZnS at yellow-orange region and 367 nm"

   P. Sajan, R.Vinod and M. Junaid Bushiri, J Lumin. **158**, 110-115 (2015). **IF : 3.599 (2020).**

3) "Synthesis of cubic ZnS microspheres exhibiting broad visible emission for bioimaging applications" **P. Sajan**, R. S. Jayasree, S. Agouram and M. Junaid Bushiri,

Luminescence **31**, 544-550 (2016). **IF: 2.464 (2020).**

4) "Enhanced UV emission from ZnO nanoflowers synthesized by the hydrothermal process" R Vinod, **P. Sajan**, Sreekumar Rajappan Achary, Carmen Martinez Tomas, Vicente Muñoz-Sanjosé and M Junaid Bushiri, J. Phys. D: Appl. Phys. **45**, 425103 (2013).
IF: 3.207 (2020).

5) "Mn^{2+}-induced room-temperature ferromagnetism and spin-glass behavior in hydrothermally grown Mn-doped ZnO nanorods,
R. Vinod, M. Junaid Bushiri, **P. Sajan**, Sreekumar Rajappan Achary, and Vicente Muñoz-Sanjosé, Phys. Status Solidi A, **211** (5), 1155 (2014). **IF: 1.981 (2020).**

6) "In situ crystallization of highly conducting and transparent ITO thin films deposited by RF magnetron sputtering"
K. Aijo John, Rachel Reena Philip, **P. Sajan**, T. Manju, Vacuum. **132**, 91-94 (2016). **IF: 3.627 (2020).**

7) **"**Room temperature Near-IR photoluminescence from ethylenediamine assisted solvo- Hydrothermally grown wurtzite ZnS:Nd2O3 system", **P. Sajan**, Krishna Sagar C.K, Divya N. G, G. Subhodh and M. Junaid Bushiri, J. Mat. Chem. and Phy**.** **257**, 123713 (2021). **IF: 4.094 (2020).**

8) "Eu^{3+} and Cu^{2+} ions doped ZnS microspheres emission in the yellow–orange region" C. K. Krishna Sagar, **P. Sajan**, M. Junaid Bushiri, J.Mat Sc: Mat in Elec. **30**, 18220 (2019). **IF: 2.478 (2020).**

9) "Hybrid nanomaterial of $ZnFe_2O_4$/α-Fe_2O_3 implanted graphene for electrochemical glucose sensing application" Divya Neravathu, Abdul Rasheed Paloly, **Sajan P**, Satheesh M and M. Junaid Bushiri**,** Diamond and Related Materials, **106**,107852 (2020), **IF : 3.315 (2020).**

Conference publications

1). "Optical studies of nanocrystalline ZnS grown by hydrothermal method", **P. Sajan**, R. Vinod, and M.Junaid Bushiri, The second international conference on optoelectronic materials and thin film for advanced technology (OMTAT-2013), January 3-5 2013,

CUSAT, Kochi.

2). "Grain size engineering of ZnS quantum dots prepared via molarity variation by chemical method", **P. Sajan**, R. Vinod, K.R.Nithinraj, and M.Junaid Bushiri, National conference- NANO INDIA 2013, February19-20, 2013.CSIR-NIIST Trivandrum,

3). "Optical properties of ZnS quantum dots synthesized by hydrothermal method at a reaction temperature of 200 ^{0}C". (Oral Presentation), P. **Sajan**, R.Vinod and M.Junaid Bushiri, National Conference on Recent Trends in Electronics and Instrumentation, NCRTEI- 2013, September 20- 21, 2013, Bharathiar University, Coimbatore.

4). "Synthesis and characterization of Mn doped ZnS Nanostructures", **P. Sajan**, R. Vinod, M. Junaid Bushiri, 26th Kerala Science Congress, January 28-31, 2014, Kerala Veterinary and Animal Sciences University, Pookode, Wayanad,

5). "Hydrothermal growth of Manganese Oxide nanostructures", **P. Sajan**, R. Vinod, and M. Junaid Bushiri, National Symposium on Advances in Material Science and Technology (AMST- 2012), February03-04, 2012, Gujarat University, Ahmedabad, Gujarat.

6). "Synthesis of flower like ZnO nanorods", R. Vinod, **P. Sajan** and M. Junaid Bushiri, National Symposium on Advances in Material Science and Technology (AMST-2012), February 03-04, 2012, Gujarat University, Ahmedabad, Gujarat.

7). "Photoluminescence and Raman studies of Mn doped ZnO nanorods", R. Vinod, **P.** Sajan and M. Junaid Bushiri, The second international conference on optoelectronic materials and thin film for advanced technology (OMTAT-2013), January 3-5 2013, CUSAT, Kochi.

8). "Optical studies of Ni doped ZnO nanoflowers", R. Vinod, **P. Sajan** and M. Junaid Bushiri, National conference on Innovative trends in Material Science (ITMS-2013), August 23-24, 2013, Arignar Anna College, Nagarcoil, Tamil Nadu.

9). "Photoluminescence from Solvo-hydrothermally grown Cu doped ZnS", Sajan. P and M. Junaid Bushiri, National Conference on Nanomaterials and Nanobiotechnology, Chennai Nanogathering (CNG-NCNN'17), Feb 7-8, 2017, University of Madras, Guindy Campus Chennai-25.

10). “Synthesis and characterisation of ZnO nanorods grown by chemical precipitation method”
Athira Suresh, Sneha Sajeevan, Sruthi P, Theja Ashok, Sheeja P, Sathyajith S and Sajan P*, National Conference on Nanomaterials (NANOPHILIA -2022), 25-08-2022 to 27-08-2022, Department of Science and Humanities, Providence College of Engineering, Chengannur, Kerala.

11). “Chemical precipitation growth of ZnS nanoparticles”, Jishnu P, Drishya Umesh, Bithov P, Sheeja P, Kavitha S, Sathyajith S and Sajan P*, National Conference on Nanomaterials (NANOPHILIA -2022), 25-08-2022 to 27-08-2022, Department of Science and Humanities, Providence College of Engineering, Chengannur, Kerala.

12). Solvo-hydrothermal growth of Two Dimensional MoS2 nanoflakes, P Sajan, Ihsan Ahamed K, M. Juanid Bushiri. Advanced Functionalized Materials for Analytical, Environmental and Biomedical Applications (NSAFM-2022), ISBN 978-93-5620-274-0, 23-25 March 2022, University of Kerala.

Training Programs/Workshops/Seminar/Conference organized.

1. Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano - 2009), Cochin University of Science and technology, Kochi, India.
2. NWRTTP- 2011, National Workshop on Recent Trends in Theoretical Physics 19-21 March 2011, Cochin University of Science and technology, Kochi, India Kochi, Kerala, India
3. The Third International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2011) from 14-17 August 2011, Cochin University of Science and technology, Kochi, India
4. Workshop on Physics: Scope and Awareness, for school children (April 25 – 30, 2011)- Cochin University of Science and technology, Kochi, India.
5. Workshop on Physics: Scope and Awareness, for school children (April 23 – 28, 2012) Cochin University of Science and Technology, Kochi, India.
6. OMTAT-2013, International Conference on Optoelectronic Materials and Thin Films for Advanced Technology, 2-5 January 2013, Cochin University of Science and Technology, Kochi, India, Kochi, India.
7. Workshop on Physics: Scope and Awareness, for school children (April 01 – 06, 2013-)- Cochin University of Science and Technology, Kochi, India.
8. National Workshop on “Advanced Materials”(AM-2013), 31st October 2013, Department of Physics, Cochin University of Science and Technology, Kochi, India.
9. Workshop on Physics: Scope and Awareness, for school children (March 31- April

5,2014)- Cochin University of Science and Technology, Kochi, India.

10. National Workshop on "Energy Materials"(EM-2014), 04 December 2014, Department of Physics, Cochin University of Science and Technology, Kochi, India.
11. Physics Open house; 2015, 16th and 17th January 2015), Cochin University of Science and Technology, Kochi, India.
12. The international conference on " Energy Harvesting, Storage and Conversion-IC- EEE 2015,5-7th of February 2015, Cochin University of Science and Technology, Kochi, India.
13. National Workshop on Technology for Aged (NWTA- 201 5); March 06,2015),Centre for Enabling Technologies for the Aged, Cochin University of Science and Technology
14. National Workshop on Material Characterization Tools & Techniques, 19 – 21 March 2015, Centre for Advanced Materials, Cochin University of Science and Technology, Kochi, India
15. Workshop on Physics: Scope and Awareness, for school children (April 06-10, 2015)- Cochin University of Science and Technology, Kochi, India.
16. National Workshop on Recent Trends in Nanotechnology for Age Old (RTNO-2016), 10 March 2016, Cochin University of Science and Technology, Kochi, India.