

## BIO-DATA

1. Name and full correspondence address: Dr. Nelsa Abraham  
Assistant Professor in ECE  
Government Engineering College, BartonHill  
Vanchiyoor P.O  
Trivandrum, Kerala 695035
2. Email(s) and contact number(s): [nelsaarun2016@gmail.com](mailto:nelsaarun2016@gmail.com),  
[nelsa.abraham@gecbh.ac.in](mailto:nelsa.abraham@gecbh.ac.in), 9495975074
3. Institution: Government Engineering College, BartonHill, Trivandrum, Kerala
4. Date of Birth: 18-03-1980
5. Gender (M/F/T): F
6. Category Gen/SC/ST/OBC: General
7. Whether differently abled (Yes/No): No
8. Academic Qualification (Undergraduate Onwards)

Degree	Year	Subject	University/Institution	% marks	
1 B.Tech	2002	Electronics & Communication	College of Engineering, Adoor	72.1%	
2 M.Tech	2010	Optoelectronics & Optical Communication	Optoelectronics Department, University of Kerala	78.9%	
3 Ph.D	2019	Optoelectronics	University of Kerala		

9. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Synthesis of ZnO based nanostructures for catalytic and dye sensitized solar cell applications, Dr. Unni C., Professor(retired), T.K.M College of Engineering, Kollam, University of Kerala, 2019

10. Work experience (in chronological order).

S.No	Position held	Name of the	From	To	Payscale
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		institute			
1.	Assistant Professor in ECE	Government Engineering College, Barton Hill, Trivandrum	2-06-2008 to	13-06-2014	15600-39100 (AGP 6000)
2	Assistant Professor in ECE	Government Engineering College, Idukki	14-06-2014	9-06-2015	15600-39100 (AGP 7000)
3	Assistant Professor in ECE	Government Engineering College, Barton Hill, Trivandrum	10-06-2015	Till date	15600-39100 (AGP 8000)

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

Nil

12. Publications (*List of papers published in SCI Journals, in year wise descending order*).

S.No	Authors	Title	Name of Journal	Volume	Page	Year
1.	Aseena S., Nelsa Abraham, V.Sureshbabu	Simulation based investigation on the performance of metal oxides as charge transport layers in lead/Tin perovskite solar cells using SCAPS ID	ECS Journal of solid state science and Technology	10		2021
2.	Aseena S., Nelsa Abraham, V.Sureshbabu	Synthesis of CNT based nanocomposites and their application as	Ceramic international	46	28355-28362	2020

		photoanode material for improved efficiency in DSSC				
3	Beena S., <b>Nelsa Abraham,</b> V.Sureshbabu	Facile synthesis and characterization studies of Mn Co-doped ceria nanoparticles: A promising nanomaterial for supercapacitors	Materials Today Proceedings			2021
4	Aseena S., <b>Nelsa Abraham,</b> V.Sureshbabu	Morphological and optical studies of zinc doped cerium nanoparticles prepared by single step co-precipitation method	Materials Today Proceedings			2021
5	Aseena S., <b>Nelsa Abraham,</b> V.Sureshbabu	Optimization of layer thickness of ZnO based perovskite solar cells using SCAPS 1D	Materials Today Proceedings			2021
6	<b>Nelsa Abraham,</b> Aseena S	Dielectric studies of CuO-ZnO heterojunction nanocomposites synthesized by co-precipitation method	Materials Today Proceedings			2021
7	K. L. Sreevidya, <b>Nelsa Abraham</b>	Simulation studies of CZTS thin film solar cell using different buffer layers	Materials Today Proceedings			2021
8	Chaithra Sajeev, <b>Nelsa Abraham,</b> K.L.Sreevidy	Defect state and grading induced bandgap variability analysis of CIGS	Materials Today Proceedings			2021

	a	solar cells through device simulations				
9	Nelsa Abraham, R.Reshma krishnakumar, Dr. C. Unni, Dr. Daizy Philip	Simulation studies on the responses of ZnO-CuO/CNT nanocomposite based SAW sensor to various organic chemicals	Journal of science: Advanced materials and devices	4	125-131	2019
10	Nelsa Abraham, Alex Rufus, Dr. C. Unni, Dr. Daizy Philip	Studies on bandgap tuning of visible light active heterojunction CuO/ZnO nanocomposites for DSSC application	Journal of Materials Science: Materials in Electronics	29	21002-21013	2018
11	Nelsa Abraham, Alex Rufus, Dr. C. Unni, Dr. Daizy Philip	Dye sensitized solar cells using catalytically active CuO/ZnO nanocomposite synthesized by single step method	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	200	116-126	2018
12.	Nelsa Abraham, Alex Rufus, Dr. C. Unni, Dr. Daizy Philip	Nanostructured ZnO with bio-capping for nanofluid and dye based solar cell applications	Journal of Materials Science: Materials in Electronics	28	16527-16539	2017

### 13. Detail of patents

Nil

### 14. Books/Reports/Chapters/General articles etc.

Sl.No	Title	Authors name	Publisher name	Year of
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				publication
1.	Textbook on Nanoelectronics	Dr.Nelsa Abraham	Oravackal Publishers	2018

15. Any other Information (maximum 500 words)

### **Research & Development**

Became co-supervisor in A.P.J. Abdul Kalam Technological University in 2019 after the completion of Ph.D. Presently I am the supervisor of one full time Scholar with JRF. Her research is on performance optimization of perovskite based solar cells. She has SCI and Scopus indexed international journal publications. She has completed her work and presently writing the thesis.

I am also holding the post of co-supervisorship of two part time scholars registered under Kerala Technological University. One of my research scholar is in the area of energy storage using supercapacitors and other one in the area of modeling and simulation of negative capacitance devices. As a faculty in the department of ECE, started a new research lab in Nanoelectronics at GEC, Barton Hill with facilities for nanomaterial synthesis and thin film solar cell fabrication and characterization. I have completed two student project funded by CERD and TEQIP. Presently I got research seed money from TEQIP of our college for an amount of Rupees two lakhs for the project titled synthesis of metal oxide based nanocomposites and their application as charge transport layers in emerging solar photovoltaic technologies.