Curriculum Vitae

Prof. Dr. M. K. Jayaraj
Vice Chancellor.
University of Calicut

PROFESSIONAL PROFILE:

Professor and Head: Department of Physics, Cochin University of Science and Technology 2019-2020

Member of the syndicate: Cochin University of Science and Technology (2016- 2019)

Director Strategic Planning: Cochin University of Science and Technology (2018-2020)

Dean of Faculty of Environmental studies: Cochin University of Science and Technology2019-continuing.

Hon. Director: Founder director of Centre of Excellence in Advanced materials (2010-2020)

Entrepreneur: Mentor of 'Delgado Coating & Technology Solutions Private Limited'

Scientific social service: (co-organiser or co-chair of symposiums/conferences, SPIE and ECS student chapter advisor, reviewer, expertise contributor/ agencies on material science, optoelectronic devices, delivering invited technical and popular talks on transparent and flexible electronics)

. Google Scholar: https://scholar.google.co.in/citations?user=6R721OIAAAAJ&hl=en

RESEARCH AND DEVELOPMENT EXPERTISE AND INTERESTS:

Thin film and nano-composite devices including sensors/detectors and energy converters, especially transparent flexible electronics. Transparent metal oxide films as transparent conductors for photovoltaic, transparent flexible electronic devices like thin film transistors. Luminescent nanomaterials for bio imaging applications, upconversion phosphors for security printing, solar cell applications. Surface enhanced Raman scattering substrates for detection of food adulterants, DNA detection cancer detection, and Metal oxide based sensor for breath analysis. Science and technology of thin films: Domain matched epitaxial, polycrystalline, nano-crystalline composite thin films with special emphasis on semiconductors and metal oxides. Characterisation of layers, surfaces and interfaces, especially for structural, chemical, optical and electrical properties.

EMPLOYMENT RECORD

Duration	Institution	Nature of Work Done
2019 Continuing	CUSAT	Dean Faculty of environmental studies
2019-2020	CUSAT	Head, Department of Physics
2018- 2020	Cochin University of Science and Technology	Director, Strategic planning
2010-2020	Centre of Excellence in Advanced Materials, CUSAT	Hon. Director
2009-2020	Dept. of Physics, CUSAT	Professor
2006 Dec-2007 April	Tokyo Institute of Technology, Japan	Visiting Professor
2001-2009	Department of Physics, CUSAT	Reader
1992-2001	Department of Physics, CUSAT	Lecturer
1999-2001	Oregon State University, USA.	Research Associate
1995-1996	AOMC, Uni. P et M. Curie, France	European Commission Fellow
1994-1995	ENEA, CRIF, C.P.32, Portici, Italy	Visiting Scientist.
1991-1992	Regional Research Laboratory, Trivandrum, India	SERC Young Scientist Fellow

1990-1991	Physical Research Laboratory, Ahmedabad, India	Post-Doctoral fellow

Degree	Year	University	Class
B. Sc.	1981	Calicut University	First
M. Sc.	1983	Cochin University	First
Ph. D.	1990	Cochin University	
	Thesis title: "Fabrication ZnS based electroluminescent devices" **Thesis Supervisor:** Prof. C. P. Girijavallabhan		

EDUCATION

ADMINISTRATIVE RESPONSIBILITIES:

- Head, Department of Physics 2019 -2020
- Hon Director Centre for Excellence in Advanced Materials 2010- continuing.
- Director Strategic Planning - 2018 -2020
- Syndicate Member 2017--2019

PUBLICATIONS AND PRESENTATIONS: (Listed at the end of the document)

- Peer reviewed articles : **201**
- Conference presentations and proceedings : **155**

INVITED TALKS:

- International : **15**
- National : **30**

PATENTS (GRANTED/PENDING/APPLIED)

1. Sreekumar Rajappan Achary and Madambi Kunjukuttan Jayaraj Automated low-pressure spray pyrolysis machine capable of coating single/multiple layers of large area (15cm × 15cm) transparent conductive oxides and semiconducting thin films. (Applied 2017)
2. M. K. Jayaraj, and Jasna.M High performance flexible and free-standing PVA/PEDOT: PSS polymer film as electromagnetic interference (EMI) shield in the X-band region. (Applied 2018)
3. Honey John. Divya Jose, K.J.Saji, Jelmy Johney,V.K.Vinoy.M.K.Jayaraj, Sharon Antony, Reduced Graphene Oxide-Conducting Polymer-Polydimethylsiloxane Composite, Process for Preparation Thereof, And Energy Harvester.(applied Feb 2020)

R& D PROJECTS FUNDED THROUGH COMPETITIVE AGENCIES: (Annexure I)

- As Principal Investigator : **18 (total estimate ~ 6.33 crores)**

- As Co- Principal Investigator : **8**

ENTREPRENEURIAL ENGAGEMENT

1. MENTOR of the Start-up "Delgado Coating & Technology Solutions Private Limited" incubated at CITTIC. The Start-up incubated at Maker village, Kalamassery since Dec. 2017. The company has got orders from DRDO, and universities worth 50 lakhs.

TECHNOLOGY TRANSFER AND LABORATORY DEVELOPMENT

1. As the Principal Investigator, implemented 17 projects total cost 633.35 lakh, Nano mission, DST funded 3.3 crore and established the state of art laboratory.
2. Founder director of Centre of Excellence in Advanced Materials a unique Centre established in Cochin University of Science and Technology in the year 2011, with a single goal of promoting and coordinating research in the broad area of material science. This centre conceived to be an interdisciplinary Centre coordinating and combining the research activities of six departments (Physics, Chemistry, Polymer science and rubber technology, Electronics, Instrumentation and Photonics) to better understand material properties and design and create new materials for optoelectronics, photonics, electronic and biological applications.

BOOKS AND BOOK CHAPTERS

1. Nanostructured Metal Oxides and Devices Optical and Electrical Properties, Editor and author. M. K. Jayaraj, Springer Publishers, 2020, ISBN 978-981-15-3313-6.
2. Oxide thin film Transistors, K. J. Saji and M. K. Jayaraj Nova Science Publishers, New York USA 2017,
3. ZnO nanostructures and its luminescent properties by P. M. Aneesh and M. K. Jayaraj in Advanced Nanomaterials: Synthesis, Properties, and Applications edited by Sabu Thomas, Nandakumar Kalarikkal, A. Manuel Stephan, B. Raneesh and A. K. Haghi, Apple Academic press New Jersey 2014
4. Optoelectronic Materials and Thin films Ed. M. K. Jayaraj, AIP conference proceedings volume 1576 (2014) published by American Institute of Physics.
5. Optoelectronic Materials and Thin Films, Editor M. K. Jayaraj, Allied Publishers Pvt. Ltd, New Delhi (2006)
6. Thin film electroluminescent devices by C. P. G. Vallabhan, M. K. Jayaraj, in Luminescence: phenomena, materials, and devices, ed R. P. Rao, Nova science publishers 1992.

SUPERVISION OF POST-DOCTORAL STUDENTS: (Annexure II)

No. of students (completed) : 3
No. of students (in progress) : 2 (one university PDF, One Kothari fellow)

SUPERVISION OF Ph.D. THESIS: (Annexure III)

No. of PhDs produced (completed and degree awarded)	:	**26**
Submitted	:	2
No. of PhDs (in progress)	:	**7**

SUPERVISION OF M.PHIL. THESIS: (Annexure IV)

No. of students (completed and degree awarded) : 31

AWARDS / RECOGNITIONS

- MRSI Medal 2019
- Dr. S. Vasudev Award for the best project completed under the Science Research Scheme(SRS) of KSCSTE 2019.
- UGC Mid-Career Award Grant – 2017
- Elected as SPIE senior member for achievements in optoelectronic materials and devices (web site: http://spie.org/x19144.xml).ting
- Visiting professor Tokyo Institute of Technology 2006 December - 2007 April
- UGC Junior Research Fellowship. 1984

CONFERENCES/WORKSHOPS ORGANISED

INTERNATIONAL CONFERENCES:

- Third International conference on Optoelectronic and nanomaterials for advanced technology (icONMAT2019) to be held at Kochi, India during January 2-5, 2019.
- Second International conference on Optoelectronic materials and thin films for advanced Technology (OMTAT 2013) held at Kochi, India Jan 3-5, 2013.
- First international conference on Optoelectronic materials and thin films for advanced technology (OMTAT 2005) held Kochi. India 2005.

NATIONAL WORKSHOP AND CONFERENCES:

- Recent Trends in Photovoltaics March 16-17, 2018
- National workshop on contemporary advances in materials for energy CAME 2017,3-4 Feb, 2017
- National conference ψ - Fest 2017, 18-22 March 2017
- Workshop on “Nanophotonics” 18-19 March 2016
- ISSS- NC 7 (Institute of Smart Structure and Systems) 23-25 September 2015 held at Kochi (co-convener)
- Ten day workshop for school children on “Physics-Scope and Awareness” convener for the events organised in the years 2007, 2008, 2009 and 2010.

CO-ORGANISER/CO-CHAIR INTERNATIONAL EVENTS:

- Session Chair, IUMRS-ICA Nagoya Japan, 2008.
- Co-Chair, International Workshop on Physics of Semiconductor Devices’ IWPSD 2015, Bangalore.

- MRSI 30th MRSI annual general body and first Indian materials conclave, oxide electronics, Co-chair.
- 15th International conference on Nano composites/Nanoengineering 2007. Oxide Nano composite symposium 2007 (organising member).

PRESIDENT: ACADEMY OF PHYSICS TEACHERS 2012-14 and 2014- 2018
http://aptkerala.org/

During this period started new seminar series. APT celebrated the International year of Light, International year Bohr Atom model, 150 the birth anniversary of Madam Curie. Under these three programme one day seminars were organised in ten colleges. A qui competition for college students. Essay writing competition for college students were conducted. A work shop series was initiated for college teachers and till now about 30 workshop of two to three day duration were organised at various colleges.

HONOURS / RESPONSIBILITIES: (Annexure V)

1. Member Board of Governors, APJ Abdul Kalam Technical University.
2. Member Syndicate Cochin University of Science and technology. (2017-19)
3. Member Senate – Cochin university of Science and Technology 2015-2019
4. Member academic council CUSAT
5. Chairman Board of studies Physical Sciences
6. President: Academy of Physics Teachers 2012—14 and 214- 2018. http://aptkerala.org/
7. Staff advisor: SPIECUSAT for last 12 years (http://physics.cusat.ac.in/spie/spie.htm
8. Staff Advisor: ECS student Chapter- http://physics.cusat.ac.in/ECS/ECS.htm
9. Started Physics Alumni association, CUSAT http://physics.cusat.ac.in/alumni/alumni.php Secretary for the past 13 years
10. Member Faculty of Science- Cochin university of Science and Technology
11. Member Board of Governors- College of engineering, Thalasseri.
12. Member Board of Studies in Instrumentation- CUSAT
13. Member Faculty of science; CUSAT
14. Subject expert/Member Board of studies in physics, St Albert's college, Maharaja's college, and St Therese's colleges of M.G University. Also member at Christ College Irinjalakuda, St Joseph's College Irinjalakuda of Calicut Universities.
15. Member-Board of studies Nanoscience: CUSAT (2009)
16. Member of Academic council 2010-2011

MEMBERSHIP IN PROFESSIONAL BODIES:

1. Life Member Plasma Society of India
2. Life Member National laser Association
3. Life Member Material Research Society of India
4. Senior member SPIE, The International society for optics and photonics. USA
5. Member Electrochemical Society, USA

Publications of Prof. M. K. Jayaraj (until February 2020)

Publications in peer reviewed journals

1. Selective Detection of Hydrogen Sulphide from the Background of Low Concentration Reducing Gases for Halitosis Diagnosis, MJ Priya, PP Subha, PM Aswathy, KW Merin, MK Jayaraj, KR Kumar, Materials Chemistry and Physics, 124038(2020) https://doi.org/10.1016/j.matchemphys.2020.124038

2. Novel Boron-Doped p-Type Cu2O Thin Films as a Hole-Selective Contact in c-Si Solar Cells,K K. Markose, M Shaji, S Bhatia, PR Nair, KJ Saji, A Antony, MK Jayaraj,ACS Applied Materials & Interfaces 12 (11), 12972-12981 (2020)
3. Clean synthesis of Er, Yb doped fluorapatite upconversion luminescent nanoparticles through liquid phase pulsed laser ablation, R Anjana, TK Krishnapriya, MK Jayaraj, Optics & Laser Technology 131, 106452 (2020).
4. Envisaging radio frequency magnetron sputtering as an efficient method for large scale deposition of homogeneous two dimensional MoS2, VJC Rigi, MK Jayaraj, KJ Saji, Applied Surface Science, 147158 (2020)
5. Facile Preparation of Lightweight and Flexible PVA/PEDOT: PSS/MWCNT Ternary Composite for High-Performance EMI Shielding in the X-Band Through Absorption Mechanism, M Jasna, NK Pushkaran, M Manoj, CK Aanandan, MK Jayaraj, Journal of Electronic Materials 49 (3), 1689-1701(2020)
6. Hydrothermal synthesis of WO3 nanoparticles: Characterization and sonocatalytic study, MV Santhosh, KS Devaky, MK Jayaraj, Materials Today: Proceedings (2020)
7. Effect of Sr and La co-doping on structural and electrical properties of RF sputtered PZT thin films, M Kathiresan, C Manikandan, S Premkumar, E Varadarajan, V Natarajan, Madambi K Jayaraj, T Santhanakrishnan, Materials Research Express (2020)
8. Optimization of piezoelectric MEMS process on Sr and La co-doped PZT thin films, M Kathiresan, J Jose, E Varadarajan, R Ramesh, V Natarajan, MK Jayaraj, ,Journal of Advanced Dielectrics (in press) 2020
9. A facile surfactant assisted hydrothermal synthesis of ZnO and graphene loaded ZnO for efficient photocatalytic self-cleaning, J Louis, MK Kavitha, V Anjana, MK Jayaraj, H John, Materials Research Express (2020)
10. Nonlinear optical absorption and asymmetric charge carrier conduction in chemical vapor deposited single-layer graphene, S Thomas, S Nalini, MK Jayaraj, LS Vikas, R Kumar, Materials Research Express (2020)
11. Sustainable carbon dots as “turn-off” fluorescence sensor for highly sensitive Pb 2+ detection, S Ravi, MK Jayaraj, Emergent Materials, 1-6 (2020)

12. Complementary Inverter Circuits Based on p-Cu2O and n-ZTO Thin Film Transistors, MR Shijeesh, PA Mohan, MK Jayaraj, Journal of Electronic Materials 49 (1), 537-543 (2020)
13. Enhanced room temperature gas sensing properties of low temperature solution processed ZnO/CuO heterojunction, PP Subha, MK Jayaraj, BMC Chemistry 13 (1), 4 (2019)
14. Electrodeposition of ZnO nanostructures on graphene for optoelectronic applications, L George, S Thomas, S Nalini, MK Jayaraj, AIP Conference Proceedings 2162 (1), 020014 (2019)

15. C-axis oriented growth of ZnO nanorods over Mg: GaN for improved heterojunction device performance, LS Vikas, MK Jayaraj, AIP Advances 9 (10), 105318 (2019)
16. Graphene hybridized high energy faceted titanium dioxide for transparent self-cleaning coatings, NT Padmanabhan, MK Jayaraj, H John, Catalysis Today (2019)
17. Fabrication and characterization of p-type boron doped Cu2O thin film and Cu2O: B/n-Si heterojunction, M Shaji, KJ Saji, MK Jayaraj, Nanoengineering: Fabrication, Properties, Optics, Thin Films, and Devices XVI (2019)
18. Synthesis of mono/few layered MoS2 thin films and graphene: MoS2 van der Waal heterostructures using pulsed laser deposition, PS Midhun, A Jayaraj, S Nalini, AS Asha, KR Kumar, MK Jayaraj, Nanoengineering: Fabrication, Properties, Optics, Thin Films, and Devices XVI (2019)
19. Stokes shift engineered, stable core-shell perovskite nanoparticle–Poly (methyl methacrylate) composites with high photoluminescence quantum yield, CVM Vijila, KR Kumar, MK Jayaraj, Optical Materials 94, 241-248(2019)
20. Zinc stannate flakes for optoelectronic and antibacterial applications, J Joseph, SB Saseendran, SR Achary, AA Sukumaran, MK Jayaraj, AIP Conference Proceedings 2115 (1), 030026 (2019)
21. Optimally distributed Ag over SiO2 nanoparticles as colloidal SERS substrate, KS Anju, R Gayathri, PP Subha, KR Kumar, MK Jayaraj, Microchemical Journal 147, 349-355(2019)
22. The field effect behavior of graphene films in air and vacuum, S Nalini, S Thomas, MK Jayaraj, KR Kumar, AIP Conference Proceedings 2082 (1), 070007
23. Facile fabrication of surface enhanced Raman scattering active optical fiber, KS Anju, KR Kumar, MK Jayaraj, AIP Conference Proceedings 2082 (1), 070001(2019)
24. Fabrication of CNT-PEDOT: PSS/Si heterojunction carrier selective solar cell KM Kurias, M Jasna, MRR Menon, A Antony, MK Jayaraj, AIP Conference Proceedings 2082 (1), 050008(2019)
25. Perovskite quantum dot based resistive memory with very low operating power, CVM Vijila, PS Subin, M Shaji, KR Kumar, MK Jayaraj, AIP Conference Proceedings 2082 (1), 070004 (2019)
26. Synthesis of carbon nanotubes by chemical vapor deposition technique, M Jasna, MK Jayaraj, AIP Conference Proceedings 2082 (1), 040001(2019)
27. Development of Au doped TiO2 nanofibers for photocatalytic applications, PM Aswathy, P Sarina, MK Kavitha, MJ Priya, H John, MK Jayaraj, AIP Conference Proceedings 2082 (1), 030007(2019)
28. Improved acetone sensing properties of electrospun Au-doped SnO2 nanofibers, MJ Priya, PM Aswathy, MK Kavitha, MK Jayaraj, KR Kumar, AIP Conference Proceedings 2082 (1), 030026 (2019)
29. Preface: The 3rd International Conference on Optoelectronic and Nano Materials for Advanced Technology (icONMAT 2019), MK Jayaraj, H John, KJ Saji, PA Mohan, KS Anju, AIP Conference Proceedings 2082 (1), 01000.(2019)
30. Rolling and unrolling of graphene sheets via in-situ generation of superparamagnetic iron oxide nanoparticles, M Sathyan, MK Jayaraj, H John, Physical Chemistry Chemical Physic, 2019, 21, 16413-16417s,

31. Enhanced optical, magnetic and hydrogen evolution reaction properties of Mo 1− x Ni x S 2 nanoflakes, L Chacko, PK Rastogi, TN Narayanan, MK Jayaraj, PM Aneesh, RSC Advances 9 (24), 13465-13475(2019)
32. Structural, Spectral, Electrical and Nonlinear Optical Characterizations of rGO-PANI Composites, VG Sreeja, G Vinitha, R Reshmi, MK Jayaraj, EI Anila Materials Today: Proceedings 10, 456-465(2019)
33. Analysis of graphene films grown on copper foil at 845 °C by intermediate pressure chemical vapor deposition Savitha Nalini, Subin Thomas, M.K. Jayaraj, and K. Rajeev Kumar, Materials Research Express (2018)
34. Synthesis of Yb3+/Er3+ co-doped Y2O3, YOF and YF3 UC phosphors and their application in solar cell for sub-bandgap photon harvesting, KK Markose, R Anjana, A Antony, MK Jayaraj, Journal of Luminescence 204, 448-456 (2018)
35. PANI/MWCNT composite electrode for supercapacitor applications, M Jasna, M Manoj, S Jayalekshmi, MK Jayaraj, Low-Dimensional Materials and Devices (2018) 10725, 107250Q.
36. Mechanistic insights into CTAB assisted TiO2 crystal growth with largely exposed high energy crystal facets, Nisha T. Padmanabhan, Madambi K. Jayaraj, Honey John, Journal of Environmental Chemical Engineering) 6,5510–5519 (2018)
37. Upconversion and downconversion photoluminescence and optical limiting in colloidal MoS2 nanostructures prepared by ultrasonication AP Sunitha, P Praveen, MK Jayaraj, KJ Saji, Optical Materials 85, 61-70 (2018)
38. Luminescent MoS_2 Quantum Dots with Reverse Saturable Absorption Prepared by Pulsed Laser Ablation A. P. Sunitha, P. Hajara, M. Shaji, M. K. Jayaraj, K. J. Saji, Journal of Luminescence , 203 , 313–321 (2018)
39. Solution Processable PEDOT: PSS/Multiwalled Carbon Nanotube Composite Films for Flexible Electrode Applications M. Jasna, M. R. Shijeesh, S. Jayalekshmi, R. Reshmi, and M. K. Jayaraj Physica Stat Sol Phys. Status Solidi A , 1701003
40. Investigating the evolution of local structure around Er and Yb in ZnO: Er and ZnO: Er, Yb on annealing using X-ray absorption spectroscopy, R Anjana, MK Jayaraj, AK Yadav, SN Jha, D Bhattacharyya Journal of Applied Physics 123 (15), 153102 (2018)
41. Low temperature fabrication of Cu_xO thin-film transistors and investigation on the origin of low field effect mobility, MR Shijeesh, MK Jayaraj, Journal of Applied Physics 123 (16), 161538 (2018)
42. Investigations on the reasons for degradation of zinc tin oxide thin film transistor on exposure to air, MR Shijeesh, AC Saritha, MK Jayaraj, Materials Science in Semiconductor Processing 74, 116-121 (2018)
43. Enhanced green upconversion luminescence in ZnO: Er3+, Yb3+ on Mo6+ co-doping for temperature sensor application, R Anjana, PP Subha, MK Kurias, MK Jayaraj, Methods and applications in fluorescence 6 (1), 015005 (2017)
44. Surface modification of TiO_2 nanorod arrays by Ag nanoparticles and its enhanced room temperature ethanol sensing properties, PP Subha, K Hasna, MK Jayaraj, Materials Research Express 4 (10), 105037 (2017)
45. Room temperature ferromagnetism in Zn1− x Ni x O nanostructures synthesized by chemical precipitation method, L Chacko, KM Shafeeq, R Anjana, MK Jayaraj, PM Aneesh, Materials Research Express 4 (10), 105905 (2017)

46. Clean synthesis of YOF:Er3+, Yb3+ upconversion colloidal nanoparticles in water through liquid phase pulsed laser ablation for imaging applications, R.Anjana, K.M.Kurias, M.K.Jayaraj, Optical Materials 72, 730-736 (2017)
47. Biocompatible Er, Yb co-doped fluoroapatite upconversion nanoparticles for imaging applications, R Anjana, K M Kurias, M K Jayaraj, Nanophotonic Materials, (2017)
48. Synthesis and characterization of Au-MWCNT/PEDOT: PSS composite film for optoelectronic applications, M Jasna, R Anjana, M K Jayaraj, Low-Dimensional Materials and Devices, (2017)
49. Excitation wavelength dependent upconverting surfactant free MoS_2 nanoflakes grown by hydrothermal method, Levna Chacko, M.K.jayaraj and P.M.Aneesh, Luminescence (2017)
50. Zinc tin oxide thin film transistor: Effect on channel isolation and channel width, MR Shijeesh, MK Jayaraj, Invertis Journal of Science & Technology 10 (3), 155-160 (2017)
51. Study of nonlinear absorption properties of reduced graphene oxide by Z-scan technique, VG Sreeja, G Vinitha, R Reshmi, EI Anila, MK Jayaraj, AIP Conference Proceedings 1832 (1), 140010,(2017)
52. Structural and electrical properties of pulsed laser deposited BaPbO3 conductive thin films and its effect on the ferroelectric properties of PbZr0.52Ti0.48O3 /BaPbO3 heterostructures, B Satish, M K Jayaraj, Ferroelectronics, 510,(2017)
53. Fabrication of p-CuO/n-ZnO heterojunction diode via sol-gel spin coating technique, RR Prabhu, A. C. Saritha, MR Shijeesh, MK Jayaraj, Materials Science and Engineering: B 220, 82-90(2017)
54. Effect of reduction time on third order optical nonlinearity of reduced graphene oxide, VG Sreeja, G. Vinitha, R Reshmi, EI Anila, MK Jayaraj, Optical Materials 66, 460-468(2017).
55. Wasp-waisted magnetism in hydrothermally grown MoS_2 nanoflakes, L Chako, A K Swetha, R Anjana, M K Jayaraj, P M Aneesh, Materials Research Express, 3(11),116102(2016)
56. Effect of thickness on nonlinear absorption properties of graphite oxide thin films, VG Sreeja, A Cheruvalathu, R Reshmi, E I Anila, S Thomas, M K Jayaraj, Optical Materials, 60,450-455(2016)
57. Fabrication of cost effective, highly reproducible large area arrays of nanotriangular pillars for surface enhanced Raman scattering substrate, Kudilatt Hasna, Aldrin Antony, Joaquim Puigdollers, Kumaran Rajeev Kumar, and Madambi Kunjukuttan Jayaraj, Nano research,9(10),3075-3083(2016)
58. Enhancement of a-Si: H solar cell efficiency by Y2O3: Yb^{3+}, Er^{3+} near infrared spectral upconverter, KK Markose, R Anjana, PP Subha, A Antony, MK Jayaraj, Proc. SPIE 9937, Next Generation Technologies for Solar Energy Conversion VII, 99370X (September 23, 2016)
59. Development of high-sensitive, reproducible colloidal surface-enhanced Raman spectroscopy active substrate using silver nanocubes for potential biosensing applications, Kudilatt Hasna ; Kiran Lakshmi ; Madambi Kunjukuttan Ezhuthachan Jayaraj; Kumaran Rajeev Kumar ; Murukeshan Vadakke Matham , J. Nanophotonics 10(2), 026020 (May 23,2016).

60. Growth and characterization of p-ZnO:Cu thin film and its homojunction application. A C Saritha, M R Shijeesh, L S Vikas, Rajeev R Prabhu and M K Jayaraj, J. Phys. D: Appl. Phys. 49 ,295105, (2016)
61. Fast UV sensing properties of n-ZnO nanorods/p-GaN heterojunction, L S Vikas, K A Vanaja, P P Subha, M K Jayaraj, Sensors and Actuators A: Physical 242, 116-122
62. Synthesis of silver nanowires using hydrothermal technique for flexible transparent electrode application , C. V. Mary Vijila, K. K. Arsina Rahman, N. S. Parvathy, and M. K. Jayaraj , AIP Conference Proceedings , 1731, 080073(2016)
63. Preparation of ZnO nanopatricles showing upconversion luminescence through simple chemical method, Anjana R , Subha P P , Markose K K , Jayaraj M.K, AIP Conference Proceedings, 1731, 080073(2016)
64. Structural and optical properties of la doped $BaSnO_3$ thin films grown by PLD, KK James, PS Krishnaprasad, K Hasna, M K Jayaraj, Journal of Physics and Chemistry of Solids, 76, 64-69(2015).
65. Observation of Room Temperature Photoluminescence from Asymmetric $CuGaO_2$/ZnO/ZnMgO Multiple Quantum Well Structures, P M Aneesh, M K Jayaraj, R Reshmi, R S Ajishma, L M Kukreja, Aldrin Antony, F Rojas, Joan Bertomeu, J Lopez Vidrier and S Hernandez, Journal of Nanoscience and Nanotechnology 15, 3944(2015)
66. Domain matched epitaxial growth of (111) $Ba_{0.5}Sr_{0.5}TiO_3$ thin films on (0001) Al_2O_3 with ZnO buffer layer, P S Krishnaprasad, A Antony, F Rojas, M K Jayaraj, Journal of Applied Physics 117, 124102(2015)
67. Defect assisted tuning of electroluminescence from p-GaN/n-ZnO nanorod heterojunction, Vikas L S, Sruthi C K, Jayaraj M K, Bullettin of Materials Science, 38(4),901-907(2015)
68. Solar photocatalytic degradation of methyl orange dye using TiO_2 nanoparticles synthesised by sol-gel method in neutral medium, P P Subha, M K Jayaraj, Journal of Experimental Nanoscience 10(14), 1106-1115 (2015)
69. Low temperature fabrication and characterisation of wurtzite structured ZnS quantum dots by chemical spray pyrolysis, T A Safeera, N Johns, E I Anila, Arturo I Martinez, PV Sreenivasan, R Reshmi, Mallick Sudhanshu, M K Jayaraj, Journal of Analytical and Applied Pyrolysis 115, 96-102 (2015).
70. Domain matched epitaxial growth of $Bi_{1.5}Zn_1Nb_{1.5}O_7$ thin films by pulsed laser deposition, P S Krishnaprasad, A Antony, F Rojas, J Bertomeu and M K Jayaraj, J. Alloys Compd.,586, 524(2014).
71. Development of p-type amorphous $Cu_{1-x}B_xO_{2-\delta}$ thin films and fabrication of pn hetero junction, K C Sanal and M K Jayaraj, Materials Science and Engineering B,185,109(2014).
72. Degradation study and calculation of density-of-states in PTCDI-C8 channel layer from the electrical characteristics of thin-film transistors, MR Shijeesh, LS Vikas, MK Jayaraj and J Puigdollers, Journal of Applied Physics,116, 024507(2014).
73. Structural and dielectric properties of Ba0. 7Sr0. 3TiO3 thin films grown by PLD, K K James, B Satish and M K Jayaraj, AIP Conference Proceedings, 1576, 212(2014).

74. Annealing effects on the structural and electrical properties of pulsed laser deposited BaPbO3 thin films, B Satish and M K Jayaraj, AIP Conference Proceedings, 1576, 215(2014).
75. Room temperature deposited transparent p-channel CuO thin film transistors, K C Sanal, L S Vikas and M K Jayaraj, Applied Surface Science,297, 153(2014).
76. Growth, structural, thermal, optical, and electrical properties of potassium succinate–succinic acid crystal, A Arunkumar, P Ramasamy, K Vishnu and M K Jayaraj, J. Mater Sci. ,49, 3598(2014).
77. Optical Emission Spectroscopic Analysis of Plasma Plume during Pulsed Laser Deposition of PZT, S Sasanka Kumar, R Reshmi, N V Joshy, A C Saritha and M K Jayaraj, Journal of Atomic and Molecular Physics,2014, 1(2014).
78. Impurity mediated large three photon absorption in ZnS:Cu nanophospors, R Sreeja, Kishore Sridharan, Reji Philip and M K Jayaraj, Optical Materials,36,861(2014).
79. Observation of Room Temperature Photoluminescence from Asymmetric CuGaO2/ZnO/ZnMgO Multiple Quantum Well Structures, P M Aneesh, M K Jayaraj, R Reshmi, R S Ajishma, L M Kukreja, Aldrin Antony, F Rojas, Joan Bertomeu, J Lopez Vidrier and S Hernandez, Journal of Nanoscience and Nanotechnology,14,1(2014).
80. Preface: Optoelectronic Materials and Thin Films, MK Jayaraj, Optoelectronic Materials and Thin Films: OMTAT 2013 AIP Conference Proceedings, 1576, 1(2014).
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