UNIVERSITY OF CALICUT
(IQAC)

INFORMATION FOR

ACADEMIC AND ADMINISTRATIVE AUDIT OF THE DEPARTMENT

Year: 2020-21

(Provide information for last three years from 2016-17 to 2020-21)

1. **Name of the Department : Department of Physics**
2. **Year of establishment :** 1971
3. **Courses offered :** PG, M. Phil., Ph.D.

Year	PG	M.Phil	Ph.D.	Others
2016-17	M.Sc Physics	M.Phil Physics	Physics	M.Sc Radiation Physics
2017-18	M.Sc Physics	M.Phil Physics	Physics	M.Sc Radiation Physics
2018-19	M.Sc Physics	M.Phil Physics	Physics	M.Sc Radiation Physics
2019-20	M.Sc Physics	M.Phil Physics	Physics	M.Sc Radiation Physics
2020-21	M.Sc Physics	M.Phil Physics	Physics	M.Sc Radiation Physics

4. **Courses introduced during last 4 years:** Nil
5. **Does the department have Academic flexibility? If yes since when?** No
6. **Interdisciplinary programs offered and departments involved:** Nil
7. **Courses conducted in collaboration with other universities and Institutions:** MOU for M.Sc. Radiation with Malabar Cancer Centre , etc.
8. **Details of programmes discontinued, if any, with reasons:** Nil
9. **Examination System: Annual/ Semester/Choice Based Credit System/ Credit and Grading system/ any other system, specify:** Choice Based Credit Semester System
10. **Participation of the department in the curriculum development for courses offered by the Departments. Activity from Board :** The board of studies with members and chairman from the department conducted workshops and played a key role in revising the syllabus as per the regulations implemented in 2017 and 2019.
11. **Does the department have different syllabus than the one used by university for PG courses?** Yes
12. **Number of teaching posts sanctioned, filled and vacant.** 14,7,7

Designation	Sanctioned	Filled	Filled under CAS
Professor	2	0	4
Associate Professor	4	1	1
Assistant Professor	8	7	3
Total	14	8	8

13. Faculty profile with name, qualification, designation, experience, nature of appointment (confirmed/ probation/temporary):

a) **Appointed on Government Sanctioned Post.**

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment
Dr. Antony Joseph	Professor	PhD	1. Two years at UG level 2. 24 years at PG level 3. 26 years of research experience	Permanent
Dr. Libu K Alexander	Assistant Professor	PhD	10 Years	Permanent
Dr. M. Mohamed Musthafa.M	Professor	M.Phil, PhD	25 years of teaching experience in PG Level 24 years of research after PhD	Permanent
Dr. Mohamed Shahin Thayyil	Assistant Professor	PhD	15 years teaching experience, 22 years of research experience	Permanent
Dr. P. P. Pradyumnan	Professor	M.Sc PhD	Teaching Experience: 1. 24 years in PG-University level. Research Experience 2. 27 years research experience 3. 3 Months GCOE visiting researcher, Waseda University, Tokyo, Japan, in NanoMaterials	Permanent
Dr. C. D. Ravikumar	Associate Professor	PhD	15	Permanent
Dr. A . M. Vinodkumar	Professor	PhD	11 years Teaching and 31 years Research	Permanent
Dr Zuhail KP	Assistant Professor	PhD	Joined 20.2.2021 1 year of research experience	Permanent

b) **Appointed from University Fund (Ad-hoc/Guest/contract Faculty).**

Name	Designation	Qualifications	Teaching/Research Experience	Nature of appointment,.
Shafna M V	Assistant Professor	M.Sc. Radiation Physics	7	Contract

14. **List of Visiting Fellows/Teachers, Adjunct and Emeritus Professors, (for last 4 years).** Nil

15. **Percentage of classes taken by temporary/visiting faculty (programme- wise information):** Nil

16. **Programme-wise Student Teacher Ratio: (*Average of 4 Years*)**

    MSc Physics- 5:1

    MPhil- 1:1

17. **Number of academic support staff (technical) and administrative staff sanctioned, filled and vacant:**

Sr. No.	Posts	Sanctioned posts	Filled	Actual
1	Laboratory Assistant	0	0	0
2	Clerk (office)	4	3	3
3	Laboratory Attendant	3	3	
4	Peon	1	1	1
5	Other	0	0	0

18. **Thrust areas of research as identified by the department:** Nuclear Physics, Condensed Matter Physics, Astrophysics
19. **Information about research grants, projects completed and ongoing during the period of last 4 years**
    a) **From National funding agencies (like UGC, CSIR, DST, DBT etc):**

Sr. No.	Name of the Principle Investigator (C0-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lakh)	Remarks if any
1	Dr Libu K Alexander	Study and Development of Graphene based Composites and Magnetically Recoverable Composites for Water Purification by Photocatalysis	KSCSTE 4 years June 2016	31.00	Finished in Nov 2020
2	Dr. A M Vinodkumar	R & D Efforts by Univ. Groups for INO	DST 2013-19	35.0 Lakhs	
3	Dr. A M Vinodkumar	Neutron Multiplicity Measurements for Md (Z=101) isotopes and their relevance to super heavy element production	IUAC-UGC 3 years 15.10.2018	11.00	
4.	Dr P.P.Pradyumnan	Studies on Oxide Materials for Thermoelectric generation	SERB,4 yr 05/07/2013	54 Lakhs and Twenty Thousand	Final report and Account submitted to SERB

5	Dr P.P.Pradyumnan (Mentor)	4.'Studies on Multicomponent Transparent Conducting oxide Thinfilms for Device	Council (P) order No 1015/2013/KSCSTE Scientist Mentor, KSCSTE, Govt of Kerala, India	15,96,000	Completed 0n 2017
6	Dr. Mohamed Shahin Thayyil, Asst. Professor	Relaxation process in glass forming pharmaceuticals	UGC (MRP), 2013 – 17, Impl: 17/07/2013	13.41	
7	Dr. Mohamed Shahin Thayyil, Asst. Professor	Critical study of relaxation processes in organic glass formers using broadband dielectric spectroscopy	KSCSTE (SRS), 2014 – 17 Impl: 01/04/2014	16.91	
8	Dr. Mohamed Shahin Thayyil, Asst. Professor	Thermal and dielectric study of relaxation process in glass forming systems	UGC-DAE (BARC Centre, Mumbai), 2015 – 17 Impl: 26/03/2015	6.30	
9	Dr. Mohamed Shahin Thayyil, Asst. Professor	Reviving the Interest in Science through Electronics	KSCSTE – SPS, 2016 – 18 Impl: 26/05/2017	3.50	
10	Dr. Mohamed Shahin Thayyil, Asst. Professor	Microcontrollers & Embedded Systems for Students, Farmers and Small Scale Entrepreneurs	Extension Activities, UGCXII Plan, University of Calicut, 2013 – 17 Impl: 04/03/2014	10.10	
11	Dr. Mohamed Shahin Thayyil, Asst. Professor	'RemoLock™ (Remotely controlled Smart Security Lock for Shared Mobile Tower Stations), an industrial collaborative project with M/s. Tulus Networks LLP, Bangalore	University Industry Linkage, UGCXII Plan, University of Calicut, 2016 – 17 Impl: 01/12 /2016	4.95	
12	Dr. Mohamed Musthafa M	Investigation of the dependence of isomeric cross section ratio on various factors	UGC-DAE-CSR, Kolkata Centre 1.1.2014 31.12.2016.	8.56 Lakhs	Completed
13	Dr. Mohamed Musthafa M	Measurement Analysis, evaluation and compilation of Nuclear reaction data at low and medium energies.	Department of Atomic Energy (DAE-BRNS) 01.04.2018-31.03.2021	44.47	Will be completed by 31.3.2022

14	Dr. Mohamed Musthafa M	Formulation of Quality Standard for Ayurvedic Compounds using PIXE and XRF	UGC-XII-plan 01.04.2014 - 31.03.2016	2.5	Completed
15	Dr. M.M.Musthafa	Pre-equilibrium neutron emission at high excitation energies and validation with nuclear reaction models	Inter University Accelerator Centre, (IUAC) New Delhi	9.75	started
16	Dr. A M Vinodkumar	IUAC-UGC Project	IUAC-UGC 2018-2021	JRF+25, 000/- Contingent grant/year	

b) From International funding agencies:

Sr. No.	Name of the Principle Investigator (C0-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lacs)	Remarks if any
	Nil	NA			

20. Funds received at Departmental level through DST-FIST; CSIR, UGC-SAP/CAS, DAE, DBT, BRNS, ICSSR, AICTE, etc

Sr. No.	Scheme and Funding Agency	Non- Recurring	Recurring	Project Fellow	Total
1	KSCSTE (SARD) Title: Thermal and spectroscopic investigations on amorphous materials, Impl: 26/03/2015	34 Lalks	1.5 Lakhs	NIL	35.5
2	Fund for Improvement in S&T Infrastructure (FIST2010)	104 Lakhs	DST, 5 yr 10-03-2011		Project settlement certificate of the project SR/FIST/PSI-159/2010 was received by 2019
3	UGC SAP DRS-II PROJECT	71.44 lakhs(including interest)	UGC, 2013-18		Final settlement not yet over

21. Research facilities available in the department and recognition received, if any?

Microraman Spectrometer : Rs 49 Lakhs
UV Visible spectrophotometer : 9 Lakhs
HPGe Detector and Electronics : Rs. 20 lakhs
Xe-arc lamp set up : Rs 4 lakhs

22. Special research laboratories sponsored by / created by industry or corporate bodies.

Nil

23. Publications:

Sr. No.	Papers published in peer reviewed journals	Monographs, Books, Chapters in books	Citations	*h*-index	Impact factor range/Average Impact factor
1	A. R. Nanakkal and L. K. Alexander Photocatalytic activity of graphene/ZnO nanocomposite fabricated by two-step electrochemical route. **Journal of Chem. Sciences**.vol 129, 95-102		19		1.41
2	A. R. Nanakkal and L. K. Alexander, pH modulated graphene based tin oxide heterovalent heterojunction nanocomposites with photocatalytic application AIP Conference Proceedings 1832, 050058 (2017); https://doi.org/10.1063/1.4980291				
3		B. Thomas, LK Alexander, **Advanced Materials Processing and Characterisation**/ Photocatalytic Reduction of Cr(VI) over super-paramagnetic $Zn_{0.9}Co_{0.1}Fe_2O_4$ ferrite under visible light irradiation ISBN: 978-93-86724-04-5			
4	A. Shamlath et al, A M Vinodkumar, Fusion and quasi fission studies in reactions forming Rn via evaporation residue measurements Physical Review C 95, 034610 APS (March 2017)				**3.146**
5	A Kumar et al. A M Vinodkumar, C D Ravikumar Invited review: Physics potential of the ICAL detector at the India-based Neutrino Observatory (INO) Pramana – J. Phys. (2017) 88: 79 Springer				1.688
6	MM Musthafa, Fabrication of carbon sandwiched thin targets of 138 Ba by evaporation technique _ **Vacuum, 141, 230 (2017)**		8		2.96

7	MM Musthafa, Chemical compositions and kinematics of the Hercules stream, Monthly Notices of the Royal Astronomical Society, 460(2),1356,(2016)	-	15		5.356
8		A Shamlath et al., Dr. A M Vinodkumar, Evaporation residue excitation function for 30Si +180Hf DAE Nuclear Physics Symposium 2015 , B29,384			
9		P V Laveen et al, Dr. A M Vinodkumar, ER excitation function measurement for the 35,37Cl+181Ta DAE Nuclear Physics Symposium 2015 , B116,558			
10	Synthesis and fabrication of porous activated carbon/nano ZnO composite electrode for supercapacitor **M. Shahin Thayyil**, MP Pillai American Institute of Physics Conference Series 1832 (1), 050027 1		1		
11	Molecular mobility in the supercooled and glassy states of nizatidine and perphenazine U Sailaja, **M. Shahin Thayyil**, NSK Kumar, G Govindaraj, KL Ngai European Journal of Pharmaceutical Sciences 99, 147-151 8 2017		8		Impact Factor: 3.76
12	The entrapment of BaIb in PVP additives to form stable double active amorphous drug by hydrogen bonds KP Safna Hussan, **M. Shahin Thayyil**, SK Deshpande, TV Jinitha AIP Conference Proceedings 1832, 070011 7 2017		7		
13	Synthesis and molecular dynamics of double active pharmaceutical ingredient-benzalkonium ibuprofenate KPS Hussan, **M. Shahin Thayyil**, SK Deshpande, TV Jinitha, VK Rajan, KL Ngai Journal of Molecular Liquids 223, 1333-1339 16 2016		16		Impact Factor: 5.06
14	Molecular dynamics of amorphous pharmaceutical fenofibrate studied by broadband dielectric spectroscopy U Sailaja, **M.Shahin Thayyil**, NSK Kumar, G Govindaraj Journal of pharmaceutical analysis 6 (3), 165-170		22		Impact Factor: 2.67

15	Synthesis and fabrication of porous activated carbon/nano ZnO composite electrode for supercapacitor **M. Shahin Thayyil**, MP Pillai American Institute of Physics Conference Series 1832 (1), 050027 1 2017		1		
16	Synthesis, Z-Scan and Degenerate Four Wave Mixing characterization of certain novel thiocoumarin derivatives for third order nonlinear optical applications, K.Jayakrishnan, Antony joseph , Paulson Mathew, T.B.Siji, K.Chandrasekharan, N.K.Siji Narendran, M.A.Jaseela, K. Muraleedharan, Optical Materials, 58 (August 2016)171-182		8		2.238
17	SN 2015bp: adding to the growing population of transitional Type Ia supernovae', Srivastav, Shubham; Anupama, G. C.; Sahu, D. K.; Ravikumar, C.D., Monthly Notices of Royal Astronomical Society (MNRAS), 2017, 466, 2436-2449		7	10	5.1
18	Hazard indices and annual effective dose due to terrestrial radioactivity in Northern Kerala, India', Reshma Bhaskaran, C. D. Ravikumar, A. M. Vinodkumar, I. Vijayalakshmi, B. Danalakshmi, N. Chitra, S. Bala Sundar, M. T. Jose & B. Venkatraman, , Journal of Radioanalytical and Nuclear Chemistry, 2017, 314(3), 2171-2179, doi: 10.1007/s10967-017-5583-5			10	0.983
19	T.P. Jaya and **P.P.Pradyumnan**, 'Plasma vapor deposited n-indium tin oxide heterojunctions for optoelectronic device applications', Japanese Journal of Applied Physics 56, 125502 (2017) https://doi.org/10.7567/JJAP.56.125502				1.471
20	E.C. Jumanath, P P Pradyumnan, 'Structural, spectroscopic and thermal property studies of cobalt adipate tetrahydrate single crystals, Journal of Crystal Growth 479(2017) 83 https://doi.org/10.1016/j.jcrysgro.2017.09.025		5		1.573
21	M P Binitha and **P P Pradyumnan,** 'Structural and magnetic studies on copper succinate dihydrate single crystals' Bull.Mater.Sci. Vol.40, No 5 September 2017 pp 1007-1011 DOI 10.1007/s12034-017-1459-0				1.264
22	**P. P. Pradyumnan,** Anju Paulson, Muhammed Sabeer N. A., and Deepthy N.Enhanced power factor in Ho doped ZnO: A new material for TE application AIP Conference Proceedings 1832, 110055 (2017); http://dx.doi.org/10.1063/1.4980679		4		

23	Jaya T Pilakavil and P P Pradyumnan, 'High transmittance hetero junctions based on n-ITO/p-CuO bilayer thin films., Mater. Res. Express 3 (2016)126401, doi: 10.1088/2053-1591/3/126401		4		1.93
24	N.K.Divya and P P Pradyumnan, 'Enhancement of photocatalytic activity in Nd doped ZnO with increase in dielectric constant', **Journal of Materials Science: Materials in Electronics (ISSN 0957-4522) (2016)**		11		2.2
25	Jaya T Pilakavil and P P Pradyumnan, 'Micro structural and dielectric property analysis on hydrothermally grown gadolinium doped SnO2 crystals., Mater. Res. Express 3 (2016) 095905, doi: 10.1088/2053-1591/3/9/095905		3		1.93
26	P P Pradyumnan, 'Superparamagnetism in FeCo nanoparticles", NANOSYSTEMS: PHYSICS, CHEMISTRY, MATHEMATICS, 2016, 7 (4), P. 675–677, DOI 10.17586/2220-8054-2016-7-4-675-677		3		
27	P Jayaram, P P Pradyumnan, S.Zh Karazhanov, ' Micro-strain, dislocation density and surface chemical state analysis of multication thinfilms, Physica B 2016, **http://dx.doi.org/10.1016/j.physb.2016.08.018**.		5		
28	M P Binitha and P P Pradyumnan,'Spectroscopic, thermal and dielectric studies of copper maleate monohydrate single crystals' Indian Journal of Pure and Applied Physics, Vol.54, July 2016, pp. 453-457		6		1.2
29	Jayakrishnan P, P P Pradyumnan and M. T Ramesan, 'Thermal and Electrical Properties of Polyindole/ Magnetite Nanocomposites', The Chemist, Journala of the American Institute of Chemists, Volume 89 Number 1 The Chemist pg 27 2016.		7		1.3
30	N.K.Divya and P P Pradyumnan, 'ZnO:Gd nanocrystals for fluorescent applications', AIP conference proceedings 1731, 050005 (2016), doi 10.1063/1.4947659		20		
31	P U Aparna, N.K.Divya, and P P Pradyumnan,'Structural and Dielectric Properties of Gd Doped ZnO Nanocrystals at Room Temperature', Journal of Materials Science and Engineering, 2016, 4, 79-88		25		0.93
32	N.K.Divya and P P Pradyumnan, 'Solid state synthesis of erbium doped ZnO with excellent photocatalytic activity and enhanced visible light emission, Materials Science in Semiconductor Processing, 41 (2016) 428-435		38		2.82

33	AR Nanakkal, LK Alexander, Journal of Chemical Sciences 2017, 129 (1), 95-102		10		1.495
34	AR Nanakkal, LK Alexander, AIP Conference Proceedings 2017, 1832 (1), 050058				
35	N Vidya Rajan, LK Alexander AIP Conference Series 2017, 1849 (2)		2		
36	AR Nanakkal, LK Alexander Journal of Materials Science 2017, 52 (13), 7997-8006		38		3.44
37	Bintu Thomas, LK Alexander Applied Nanoscience 2018, 8 (1-2), 125-135		14		3.2
38	N Vidyarajan, LK Alexander Materials Research Express 2018, 6 (1), 015610		4		1.445
39	Bintu Thomas, LK Alexander Journal of Alloys and Compounds, 2019, 788, 257-266		4		4.175
40	Bintu Thomas, LK Alexander AIP Conference Proceedings 2019, 2162 (1), 020063		-		-
41	Bintu Thomas, LK Alexander Journal of Solid State Chemistry,2020, 288, 121417				2.291
42	Fusion and quasifission studies in reactions forming Rn via evaporation residue measurements - A. Shamlath, E. Prasad, N. Madhavan, P. V. Laveen, J. Gehlot, A. K. Nasirov, G. Giardina, G. Mandaglio, S. Nath, Tathagata Banerjee, **A. M. Vinodkumar,**M. Shareef, A. Jhingan, T. Varughese, DVGRKS Kumar, P. Sandya Devi, Khushboo, P. Jisha, Neeraj Kumar, M. M. Hosamani, and S. Kailas, Phy. Rev. **C 95**(2017)034610.		8		**3.146**
43	Invited review: Physics potential of the ICAL detector at the India-based Neutrino Observatory (INO) - A Kumar, **A M Vinodkumar** et al., Pramana – J. Phys. (2017) 88:79.		105		1.185
44	Hazard indices and annual effective dose due to terrestrial radioactivity in Northern Kerala, India. Reshma, C D Ravikumar, **A M Vinodkumar,** I Vijyalakshmi, B Dhanalakshmi, N Chitra, S. Bala Sundar, M T Jose, B Venkatramanan, Journal of Radioanalytical Chemistry 314(2017)2171.		2		0.983

45	Sub-barrier fusion of 11Li with 208Pb - W. Loveland, **A. M. Vinodkumar**, Ricardo Yanez, Larry Yao, Jonathan King, Jens Lassen, and Alex Rojas, European Physical Journal A - Hadrons Nuclei, 54(2018)140.		0		2.481
46	Nuclear dissipation at high excitation energy and angular momenta in reaction forming 227Np - M. Shareef, E. Prasad, A. Jhingan, N. Saneesh, K. S. Golda,**A. M. Vinodkumar**, Mohit Kumar, A. Shamlath, P. V. Laveen, A. C. Visakh, M. M. Hosamani, S. K. Duggi, P. Sandya Devi, G. N. Jyothi, A. Tejaswi, P. N. Patil, Jhilam Sadhukhan, P. Sugathan, A. Chatterjee, and Santanu Pal, Phy. Rev. **C 99**(2019)024618.		2		3.146
47	Evaporation residue cross-section measurements for 16O + 203,205Tl - J. Gehlot, **A. M. Vinodkumar**, N. Madhavan, S. Nath, A. Jhingan, T. Varughese, Tathagata Banerjee, A. Shamlath, P. V. Laveen, M. Shareef, P. Jisha, P. Sandya Devi, G. Naga Jyothi, M. M. Hosamani, I. Mazumdar, V. I. Chepigin, M. L. Chelnokov, A. V. Yeremin, A. K. Sinha, and B. R. S. Babu, Phy. Rev. **C 99**(2019)034615.		1		3.146
48	Evaporation residue measurements for compound nuclei in the A = 200 region -P. Jisha, **A. M. Vinodkumar**, B. R. S. Babu, S. Nath, N. Madhavan, J. Gehlot, A. Jhingan, T. Banerjee, Ish Mukul, R. Dubey, N. Saneesh, K. M. Varier, E. Prasad, A. Shamlath, P. V. Laveen, and M. Shareef, Phys. Rev. C 101(2020)02461.		0		3.146
49	N A Muhammad Sabeer, Anju Paulson and **P P Pradyumnan, '**Band modification of tin nitride thin films for green energy generation'Journal of Physics and Chemistry of Solids 138 (2020) 109294,https://doi.org/10.1016/j.jpcs.2019.109294				2.752
50	Jumanath, E.C., **Pradyumnan, P.P.** Thermal degradation and spectroscopic studies of single-crystalline organometallic calcium adipate monohydrate. *J Therm Anal Calorim* 140**,** 567–575 (2020). https://doi.org/10.1007/s10973-019-08916-z				2.471

51	E.C. Jumanath, **P P Pradyumnan,** 'Biomimetic growth, dielectric and magnetic features of copper ascorbate dihydrate crystals' Journal of Solid State Chemistry 277 (2019) 538–547https://doi.org/10.1016/j.jssc.2019.07.001				2.291
52	E.C. Jumanath, **P P Pradyumnan,** **'**Growth and structural studies of hybrid single crystal of cadmium citrate hexahydrate', Journal of Molecular Structure 1193 (2019) 231-238https://doi.org/10.1016/j.molstruc.2019.04.129		2		2.011
53	Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan,**'A synergetic approach of band gap engineering and reduced lattice thermal conductivity for the enhanced thermoelectric property in Dy ion doped ZnO' Journal of alloys and compounds 786 (2019) 581-58 doi.org/10.1016/j.jallcom.2019.01.336		6		4.175
54	E.C. Jumanath, **P P Pradyumnan,** 'Growth, Characterization and Dielectric Proprty Studies of Zinc Adipate Dihydrate Crystals'AIP Conference Proceedings **2082**, 070003(2019) https://doi.org/10.1063/1.5093878				
55	N A Muhammad Sabeer, Anju Paulson and **P P Pradyumnan**, 'Doubling the thermoelectric power factor of rare earth abundant tin nitride thin films through tuned (311) orientation by magnetron sputtering' Journal of Applied Physics 124, 185107 (2018)https://doi.org/10.1063/1.5049535		2		2.328
56	Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan**, 'Enhanced thermoelectric property of oxygen deficient nickel doped SnO_2 for high temperature application', Mater. Res. Express 5 045511 2018 https://doi.org/10.1088/2053-1591/aabd64		4		1.449
57	P Maneesha, Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan**,' Thermoelectric measurement of nanocrystalline cobalt doped copper sulphide for energy generation, Materials Letters 225(2018) 57-61 https:// doi.org/10.1016/j.matlet.2018.04.075		4		3.019

58	Muhammed Sabeer N. A., Anju Paulson, and **P. P. Pradyumnan**, 'An experimental approach of decoupling Seebeck coefficient and electrical resistivity'AIP Conference Proceedings 1942, 110054 (2018); doi: 10.1063/1.5029037				
59	**P. P. Pradyumnan,** Anju Paulson, Muhammed Sabeer N. A,**'**Cobalt doped SnO 2 : A New Material for thermoelectric application', Advanced Materials Proceedings 2018, 3(1), 08-12 DOI: 10.5185/amp.2018/660				
60	N.K.Divya and **P P Pradyumnan,** 'Photoluminescence quenching and photocatalytic enhancement of Pr-doped ZnO nanocrystals' Bll.Mater.Sci https:// doi.org/10.1007/s12034-017-1507-9,		13		1.264
61	T.P. Jaya and **P.P.Pradyumnan**, 'Plasma vapor deposited n-indium tin oxide heterojunctions for optoelectronic device applications', Japanese Journal of Applied Physics 56, 125502 (2017) https://doi.org/10.7567/JJAP.56.125502				1.471
62	E.C. Jumanath, P P Pradyumnan, 'Structural, spectroscopic and thermal property studies of cobalt adipate tetrahydrate single crystals, Journal of Crystal Growth 479(2017) 83 https:// doi.org/10.1016/j.jcrysgro.2017.09.025		5		1.573
63	M P Binitha and **P P Pradyumnan,** 'Structural and magnetic studies on copper succinate dihydrate single crystals' Bull.Mater.Sci. Vol.40, No 5 September 2017 pp 1007-1011 DOI 10.1007/s12034-017-1459-0				1.264
64	**P. P. Pradyumnan,** Anju Paulson, Muhammed Sabeer N. A., and Deepthy N.Enhanced power factor in Ho doped ZnO: A new material for TE application AIP Conference Proceedings 1832, 110055 (2017); http://dx.doi.org/10.1063/1.4980679		4		
65	K.P. Safna Hussan, **Mohamed Shahin Thayyil**, 'Charge transport and glassy dynamics in a room temperature ionic liquid-[BMPyr][TFSI]' J. Non-Crystalline Solids. 541, 120133 (2020)				**2.12**
66	KK Thasneema, **M.Shahin Thayyil**, T Rosalin, KK Elyas, ... 'Thermal and spectroscopic investigations on three phosphonium based ionic liquids for industrial and biological applications'**J. Mol. Liquids 307**, 112960(2020)				**4.51**

67	Jinitha T.V, Safna Hussan K.P., **M. Shahin Thayyil,** E. Purushothaman, 'The interplay between the fragility and mechanical properties of styrene–butadiene rubber composites with unmodified and modified sago seed shell powder', Accepted in J. Applied Polymer Science, e, 49180 (2020) https://doi.org/10.1002/app.49180				**2.19**
68		**Chapter in Book** Safna Hussan K.P, **M. Shahin Thayyil**, TS Ahamed, K. Muraleedharan, 'Biological Evaluation and Molecular Docking Studies of BenzalkoniumIbuprofenate' a chapter in the book **Computational Biology and Chemistry, IntechOpen**(2020) DOI:10.5772/intechopen.90191			
69	Shabeeba P., **M. Shahin Thayyil**, M. P. Pillae, Thasneema K.K, 'PMMA-RTIL electrolyte for high-energy supercapacitors: A comparison of different anions' **J. Mol. Liquids 294**, 111671(2019)https://doi.org/10.1016/j.molliq.2019.111671				**4.51**
70	Safna Hussan K.P, **M. Shahin Thayyil**, AshnaPoulose, K.L. Ngai, 'Glassy Dynamics and Translational-Rotational Coupling of an Ionically Conducting Pharmaceutical Salt-Sodium Ibuprofen, **J. Phys. Chem. B123**, 7764–7770 (2019) https://doi.org/ 10.1021/acs.jpcb.9b03929				**3.15**
71	Aboothahir Afzal, **M. Shahin Thayyil**, et.al, 'Anti-Cancerous Brucine and Colchicine: Experimental and Theoretical Characterization', Chemistry Select **4**, 11441 – 11454 (2009), DOI: 10.1002/slct.201902698				**1.76**
72	Safna Hussan K.P, **M. Shahin Thayyil**, Vijisha K Rajan, Anu Antony, 'The interplay between charge transport and CO_2 capturing mechanism in [EMIM][SCN] ionic liquid - A broadband dielectric study, **J. Phys. Chem. B123** (30), 6618-26 (2019), https://doi.org/10.1021/acs.jpcb.9b03929		**3**		**3.15**

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75	Safna Hussan K.P, **M. Shahin Thayyil**, Jinitha TV, Jayant Kolte, 'Development of an ionogel membrane PVA/[EMIM] [SCN] with enhanced thermal stability and ionic conductivity for electrochemical application, **Journal of Molecular Liquids 274**, 402 –413 (2019)		**5**		**4.51**
76	JitheshKavil, ShabeebaPilathottathil, **M. Shahin Thayyil**, PradeepanPeriyat, 'Development of 2D nanoheterostructures based on g-C3N4 and flower shaped MoS2 as electrode in symmetric supercapacitor device '**Nano-Structures & Nano-Objects' 80**, 46 – 53 (2019)		**2**		**1.10**
77	Safna Hussan K.P, **M. Shahin Thayyil**, Vijisha K Rajan, K. Muraleedharan, 'DFT studies on global parameters, antioxidant mechanism and molecular docking of amlodipine besylate' **Computational Biology and Chemistry 80**, 46 – 53 (2019)		**3**		**1.01**
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82	Shabeeba P.**,** Thasneema K.K, **M. Shahin Thayyil**, M.P Pillai, Jemshihas A.P, 'Inorganic salt grafted ionic liquid gel electrolytes for efficient solid state supercapacitors' **Journal of Molecular Liquids264**, 72-79 (2018), e-ISSN: 0167-7322		**4**		**4.51**
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112	P T Muhammed Shan, **M.M.Musthafa**… Eur. Phys. J Plus 135,385(2020)				2.61
113	C V Midhun, **M M Musthafa**, Shaima Akbar, Swapna Lilly Cyriac, and Antony Joseph ___Nucl.Sci. Engg. 194,207(2020)				1.6
114	Manoj Kumar Sharma, Mohd Shuaib, Mahesh Kumar, Vijay Raj Sharma, Abhishek Yadav,Pushendra P. Singh, B. P. Singh, and R. Prasad Phys. Rev. C 99, 014608 (2019)				3.13
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123	B. Lalremruata, S. Kailas, V.N. Bhoraskar, S.Ganesan, Alok Saxena, B.K. Nayak, Ajay Tyagi, **M.M.Musthafa**, S. Mukherjee, G. Mukherjee, H. Naik and S.D. Dhole. *INDC(IND)-0050 Distr. G. November 2017*				
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Sr. No.	**Papers published in peer reviewed journals**	**Monographs, Books, Chapters in books**	**Citations**	***h*-index**	**Impact factor range/Average Impact factor**
125	Bintu Thomas, LK Alexander Journal of Solid State Chemistry,2020, 288, 121417		4		2.726
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129	Trace elemental finger printing of Ayurvedic formulation Nishakatakadi using XRF and NAA, *Journal of Radioanalytical and Nuclear Chemistry* *328, 435 (2021)*		0		1.137
130	Experimental determination of thermal neutron fluence around Elekta Versa HD linear accelerator for various photon energies, *Biomedical Physics& Engineering Express* *6 055018, (2020)*		0		1.10
131	Silicon based nano-sensors for neutron dosimetry: proof of concept, *Materials Today: Proceedings* *33(5),2293 (2020)*		0		0.97
132	P. Jisha, A. M. Vinodkumar, B. R. S. Babu, S. Nath, N. Madhavan, J. Gehlot, A. Jhingan, T. Banerjee, Ish Mukul, R. Dubey, N. Saneesh, K. M. Varier, E. Prasad, A. Shamlath, P. V. Laveen, and M. Shareef Evaporation residue measurements for compound nuclei in the A = 200 region Phys. Rev. C 101(2020)02461. APS https://doi.org/10.1103/PhysRevC.101.024611				3.304
133	S. Sanila, A. M. Vinodkumar and B. R. S. Babu Systematics of multinucleon transfer in heavy ion reactions Pramana-Journal of Physics, 94(2020)70 . Springer https://doi.org/10.1007/s12043-020-1919-8				1.688

134	P V Laveen, E. Prasad, N. Madhavan, A. K. Nasirov, J. Gehlot, S. Nath, G. Mandaglio, G. Giardina, A. M. Vinodkumar, M. Shareef, A. Shamlath, S. K. Duggi, P. Sandya Devi, Tathagata Banerjee, M. M. Hosamani, Khushboo, P. Jisha, Neeraj Kumar, Priya Sharma, and T. Varughese Fusion studies in 35,37Cl + 181Ta reactions via evaporation residue cross section measurements Phys. Rev. C 102(2020)034613 https://doi.org/10.1103/PhysRevC.102.034613				3.304
135	Thasneema KK, Dipin T., M. Shahin Thayyil, Pramod K Sahu et al, Removal of toxic heavy metals, phenolic compounds and textile dyes from industrial waste water using phosphonium based ionic liquids J. Mol. Liquids 307, 114645 (2020) (Impact Factor 5.06) https://doi.org/10.1016/j.molliq.2020.114645				Impact Factor 5.06
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141	'Heavy Quarkonium Properties at Finite Temperature in Strongly Coupled Quark Gluon Plasma', Rethika, K.T., Ravikumar, C.D., Bannur, V.M. Few-Body Systems, 2021, 62(1), 10		0	12	0.823
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144	PP Pradyumnan et al., Fermi level tuning in modified Bi 2 Te 3 system for thermoelectric applications, RSC Advances, RSC Adv., 2021, 11, 4539 (doi: DOI: 10.1039/d0ra09278a)				3.1
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146	PP Pradyumnan et al. Mesopore ffects on thermoelectric properties of CuO nanoparticles', AIP Conference Proceedings **2265**, 030466 (2020);				
147	PP Pradyumnan et al. Enhancement of optical and thermoelectric properties in dysprosium doped ZnO thin films as an impact of non-parabolic band structure', Materials Science & Engineering B 262 (2020) 114745				5.88

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149	PP Pradyumnan et al. Band modification of tin nitride thin films for green energy generation' Journal of Physics and Chemistry of Solids 138 (2020) 109294,https://doi.org/10.1016/j.jpcs.2019.109294				3.44
150	PP Pradyumnan et al. Growth and characterization of zinc glutarate crystals', AIP Conference Proceedings 2244, 030004 (2020); https://doi.org/10.1063/5.0009009				

24. Details of patents filed & granted and income generated: Nil

25. Consultancy services provided, name of the teacher/s and income generated:

Sr. No.	Year	**Name of the teacher**	**Nature of consultancy**	**Funds generated (In Lakh)**
		Nil		

26. Details of teachers invited as resource persons for Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.

1. Libu K.Alexander, Resource Person, UGC HRDC Refresher Course, Kannur University, Topic: Graphene, Date 17/7/2017

2. Libu K.Alexander, Resource Person, National Seminar, Govt College Perinthalmanna, Topic: Functionalised Graphene, Date 23/11/2017

3. Dr. A.M. Vinodkumar, Thematic workshop on UNDERGROUND ACCELERATOR BASED NUCLEAR ASTROPHYSICS FACILITY organized by UGC-DAE Consortium for Scientific Research, Kolkata Centre, May 17 - 18 2017, UGC-DAE CSR, Kolkata Centre.

4. Dr. A. M. Vinodkumar, Shodh Shiksha Sameeksha, IUCAA, Pune , UGC-MHRD, October 1, 2017.

5. Dr. A.M. Vinodkumar, IUAC acquaintance programme- One day National Workshop on Accelerator Based Science Research, UAC and CUK, Kasargod, 29 October 2018.

6. Dr. A.M. Vinodkumar, Users Workshop, IUAC,New Delhi, IUAC, 5-7 July 2018.

7. Dr. A.M. Vinodkumar, International Conference on New Frontiers in Nuclear Physics (ICNFNP 2019) 2019, BHU,Varanasi,October 14-17, 2019.

8. Dr. A. M. Vinodkumar, 66th IUAC Accelerator Users Committee Workshop, IUAC, New Delhi, July 5-8, 2019.

9. Dr. A. M. Vinodkumar, 67th IUAC Accelerator Users Committee Workshop, IUAC New Delhi, December 14-19, 2019.

10. Dr. M. Shahin Thayyil, Relaxation dynamics in amorphous pharmaceuticals: Insights from the classic glass formers at 8th International Discussion Meeting on Relaxation in Complex Systems held at Wisla, Poland 23 – 29 July, 2017

11. Dr. M. Shahin Thayyil, chaired a session of Project presentation by the participants in the Refresher Course in Material Science organized by the Academic Staff College on 10 December 2019

12. Dr. M. Shahin Thayyil, chaired a session in the International Conference organized by the Department of Physics, St. Joseph's College Devagiri on 17 December 2019.

13. Prof M. M Musthafa, Webinar series -Meet Alumnus- Exploring the Vistas in Physics, Ponani MES College, 27.10.2020

14. PP Pradyumnan, Nonconventional energy, UGC – Human Resource Development Centre, 21-10-2020, Kannur University: Resource Person

27. Details of teachers participated in Refresher courses, Orientation courses, Seminars, Workshops, Conferences at national and international levels.(participant, presented paper, chaired the session)

Sl. No	Name	Title of the event	Organizer, venue& Period	International/ National	Remarks
1	A M Vinodkumar	INO Project Collaboration meeting	Homi Bhabha Centre for Science Education, Mumbai	National	October 24-25, 2016
2	A M Vinodkumar	Thematic workshop on UNDERGROUND ACCELERATOR BASED NUCLEAR ASTROPHYSICS FACILITY organized by UGC-DAE Consortium for Scientific Research, Kolkata Centre, May 17 - 18 2017, UGC-DAE CSR, Kolkata Centre.	IUC-DAEF Kolkata	National	May 17 - 18 2017
3	Dr M. M Musthafa	DAE Symposium on Nuclear Physics, Saha Institute of Nuclear	DAE	National	5-9 Dec 2016

		Physics, Kolkata			
4	**Dr.P P Pradyumnan**	National conference on Materials science and nanotechnology	Department of Physics, M E S College, Ponnani, Malappuram, 18-20 March 2019	National	Invited/Keynote /Inaugural Talks
5	**Dr.P P Pradyumnan**	National Seminar on Interdisciplinary Approaches in Materials and Biological research (IAMBR-2019)	Mahatma Gandhi College, Thiruvananthapuram March 15 & 16 2019	National	Invited/Keynote /Inaugural Talks
6	**Dr.P P Pradyumnan**	National seminar on Thin film Technology and Application	School of Pure and Applied Physics, Mahatma Gandhi University, Kottayam 15-17 February 2018	National	Invited/Keynote /Inaugural Talks
7	**Dr.P P Pradyumnan**	Non conventional energy materials	UGC – Human Resource Development Centre, 21-7-2017, Kannur University		
8	**Dr.P P Pradyumnan**	Materials for Energy Generation,	UGC – Human Resource Development Centre, University of Calicut, 16-6-2017		
9	Nabeela K V, **Dr.P P Pradyumnan**	64th DAE Solid State Physics Symposium	BARC,IIT Jodhpur18-22 December 2019	National	Presented paper
10	Soumya C, **Dr.P P Pradyumnan**	International Conference on Energy& Environment	TKM Collge off Arts & Science, Kollam, 12-14 December 2019	International	Presented paper
11	Vineetha V S, **Dr.P P Pradyumnan**	International Con-ference on physics of Materials and Nanotechnology	Mangalore University 19-21 September 2019	International	Presented paper
12	Nabeela K V, **Dr.P P Pradyumnan**	International conference on advanced materials	Nirmalagiri college , Kannur12-14 June 2019	International	Presented paper
13	Nabeela K V, **Dr.P P Pradyumnan**	5th International conference on Nanoscience and Nanotechnology	SRM Institute of Science and Technology (SRM-IST),Chennai 28-30 January 2019	International	Presented paper
14	Jumanath E C, **Dr.P P Pradyumnan**	International conference on Optoelectronic and Nanomaterials for advanced Technology	Cochin University of science and Technology, Kochi 3-5 January 2019	International	Presented paper

15	Anju Paulson, **Dr.P P Pradyumnan**	International conference on Optoelectronic and Nanomaterials for advanced Technology	Cochin University of science and Technology, Kochi 3-5 January 2019	International	Presented paper
16	Shyni P, **Dr.P P Pradyumnan**	ICCFM 2018	Bose center for Basic Science, Kolkata 13-16 December 2018	International	Presented paper
17	Shyni P, **Dr.P P Pradyumnan**	ICONSEA 2018	Jawaharlal Nehru Technological University, Hyderabad 6-8 October 2018	International	Presented paper
18	Midhun shah, **Dr.P P Pradyumnan**	National Symposium on Nano Science and Technology	Centre for Nano Science and Engineering, IISC Bangalore. 20-22 June 2018	National	Presented paper
19	Nabeela K V, **Dr.P P Pradyumnan**	International Conference on Materials for Energy and Environment	Loyola college, Chennai22-23 February 2018	International	Presented paper
20	Nabeela K V, **Dr. P P Pradyumnan**	National Seminar on Science and Technology of New Materials for Sustainable future	Department of Physics University of Calicut 7-9 February 2018	National	Presented paper
21	Muhammed Sabeer N. A, **Dr.P P Pradyumnan**	National Seminar on Science and Technology of New Materials for Sustainable future	Department of Physics University of Calicut 7-9 February 2018	National	Presented paper
22	Anju Paulson, **Dr.P P Pradyumnan**	30th Kerala Science Congress	Govt. Brennen College, Thalessery d 28-30 January 2018.		Presented paper
23	Muhammed Sabeer N. A, **Dr.P P Pradyumnan**	62nd DAE Solid State Physics Symposium (DAE SSPS 2017)	DAE Convention Centre, Anushaktinagar, Mumbai,26-30 December 2017	National	Presented paper
24	Anju Paulson, **Dr. P P Pradyumnan**	International conference on Thin Films	CSIR-National Physical Laboratory New Delhi 14-17November 2017	International	Presented paper
25	Muhammed Sabeer N. A, **Dr.P P Pradyumnan**	International conference on Thin Films	CSIR-National Physical Laboratory New Delhi 14-17November 2017	International	Presented paper
26	Anju Paulson, **Dr.P P Pradyumnan**	National Symposium on Nano Science &	Centre for Nano Science and Engineering,	National	Presented paper

		Technology	IISC Bangalore 2-4 July 2017		
27	**Dr Libu K. Alexander**	ICT enabled Curriculum and Pedagogy at Higher Education	MHRD-TLC (PMMMNMTT), University of Calicut from 6.11.2019 to 12.11.2019.		
28	**Dr. Mohamed Shahin Thayyil**	Relaxation dynamics in amorphous pharmaceuticals: Insights from the classic glass formers	8th International Discussion Meeting on Relaxation in Complex Systems held at Wisla, Poland 23 – 29 July, 2017	International (abroad)	Invited talk
29	**Dr. Mohamed Shahin Thayyil**	National Level Workshop on the Dual Mode University Manual of NAAC	National Assessment and Accreditation Council, Bengaluru on 18 December 2019 at NAAC Headquarters Bengaluru, India	National	Attended
30	**Dr. Mohamed Shahin Thayyil**	International Conference	Department of Physics, St. Joseph's College Devagiri, Kozhikode 16 -17 December 2019.	International	Chaired a session
31	**Dr. Mohamed Shahin Thayyil**	International Conference on Emerging Frontiers in Chemical Science	Chemistry Department, Farook College (Autonomous) 13-15, December 2019.	International	
32	**Dr. Mohamed Shahin Thayyil**	National Workshop on Bruker Single Crystal X-Ray Diffraction & User Training	Bruker India Scientific Pvt. Ltd held at Annamalai University, Tamilnadu–608 002 on September 27 & 28, 2019	National	Attended
33	**Dr. Mohamed Shahin Thayyil**	International Symposium on Dissolution Science and Applications	National Institute for Pharmaceutical Education and Research (NIPER) – Mohali and Society for Pharmaceutical Dissolution Science (SPDS), India on 12-13 September 2019, Chandigarh, India	International	
34	**Dr. Mohamed Shahin Thayyil**	Workshop on Dissolution Science and Applications	National Institute for Pharmaceutical Education and Research (NIPER) – Mohali and Society for Pharmaceutical Dissolution Science	International	

			(SPDS), India on 11 September 2019, Chandigarh, India		
35	**Dr. Mohamed Shahin Thayyil**	National Seminar on Frontiers in Chemical Sciences (FCS –2019)	Department of Chemistry, University of Calicut from 19 – 21, March 2019		
36	**Dr. Mohamed Shahin Thayyil**	International Conference on Supercapacitors, Energy Storage & Applications (ICSEA – 2019)	organized by the Centre for Materials for Electronics Technology C–MET held at Thrissur during 8-10 March 2019	International	Attended
37	**Dr. Mohamed Shahin Thayyil**	Workshop on Redesigning of Courses for Outcome Based Education (OBE)	Kerala State Higher Education Council held at the University of Calicut from 12 – 14, February 2019	National	Attended
38	**Dr. Antony Joseph**	National Sympo-sium on "Recent Advances in Physical Science"	Rani Anna Govt. College for Women, Tirunelveli during 18-19 March 2019.	National	Presented a paper as invited speaker
39	**Dr. Antony Joseph**	National Seminar on "How atom benefits our life"	St. Thomas College, Thrissur	National	4-5 February 2019
40	**Dr. Antony Joseph**	One-day National workshop on "First Step to Latex"	S.A.R.B.T.M. Govt. College, Koyilandy	National	08-11-2019
41	Deepthy Maria Joseph, **Antony Joseph**, and Nithu Ashok	DAE Symp. on Nucl. Phys. 62 (2017)	Thapar University, Patiala, Punjab, during Dec. 20-24, 2017	National	Presented paper
42	Nithu Ashok, Jhilam Sadhukhan, and **Antony Joseph**	DAE Symp. on Nucl. Phys. 62 (2017)	Thapar University, Patiala, Punjab, during Dec. 20-24, 2017	National	Presented paper
43	Vishnu C V and **Antony Joseph**	DAE International symposium on nuclear physics	BARC, Mumbai Dec 10-14 2018	International	Presented a paper
44	Ummukulsu E., Nithu Ashok and **Antony Joseph**	DAE International symposium on nuclear physics	BARC, Mumbai Dec 10-14 2018	International	Presented a paper
45	Nithu Ashok, Simji P and **Antony Joseph**	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper
46	Anjana.A.V, Nicemon Thomas, and **Antony Joseph**	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper
47	Athira P S and **Antony Joseph**	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper
48	Nicemon Thomas, Anjana A. V and **Antony Joseph**	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper

49	Ummukulsu E. and **Antony Joseph**	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper
50	Vishnu C V, **Antony Joseph**, T.A.Sajith, and Sabu Thomas	December 23-27, 2019	Lucknow University, Lucknow	National	Presented a paper
51	Salm R V **M.M.Musthafa**	International Symposium on New Frontiers in Nuclear Physics,	Banaras Hindu University Varanasi, UP.,October 13-17 2019	Inter national	Invited talk+ paper presentation
52	Midhun C V **M.M.Musthafa**	DAE International Sypmosium on Nuclear	Physics, Bhabha Atomic Research Centre Dec 2018	Inter national	Paper presentation
53	Muhammd Shan **M.M.Musthafa**	DAE Sypmosium on Nuclear Physics,	Saha Institute of Nuclear Physic, Kolkatta Dec 2017	National	Paper Presentation
54	**M.M.Musthafa**	DAE-BRNS Theme meeting on covarience in Nuclear data,	Manipal University (manipal Academy of Higher Education, Manipal, Karnataka, 9-13 Dec. 2017	International	participation
55	Dr M.M.Musthafa	Online orientation training programme for mentors from higher education institutions/ universities	UGC, National Institute of Teachers Training and Research, Chennai	National	Participant
56	Dr. A M Vinodkumar	67th IUAC Accelerator Users Committee Workshop	IUAC, New Delhi	National	
57	Dr. A M Vinodkumar	68th IUAC Accelerator Users Committee Workshop	IUAC, New Delhi	National	
58	Dr A M Vinodkumar	Comparison of fusion cross sections for 32S +182,184W reactions along with statistical model calculations- talk delivered in the "Contemporary topics in nuclear physics" on 24th June 2020.	Nuclear Physics Division Bhabha Atomic Research Centre, Mumbai	International	
59	Dr Mohammed Shahin	Online	February – April 2020(8 weeks)	NPTEL – Swayam online	

				course. IISER, Bhopal	
60	Dr P.P. Pradyumnan	International webinar on Frontiers in Experimental Physics (IWEP-2020),: Chaired the inaugural Talk on 5-8-2020	5-6 August 2020, Farook College, Kozhikode	International	

28. Participation of teachers in various academic activities as members of committees at University level, State level, National level, International level bodies. (give details)

1. Dr. Libu K. Alexander: Director, Centre for International Academic Relations, University of Calicut

2. Dr Libu K. Alexander: Member, PG Board of Studies-Physics, 2017-2019

3. Dr. A. M. Vinodkumar, Nominated as AUC member, IUAC, New Delhi (2018 onwards).

4. Dr. A.M. Vinodkumar, Member, Selection Panel for JRF's – in IUAC Projects (2017 onwards).

5. Chairman/member, Board of studies in Radiation Physics

6. Dr M. M. Musthafa, Chairman, Board of Studies in Bvoc, Optometry and opthalmological instruments

7. Dr M. M. Musthafa, Coordinator, M.Sc. Radiation Physics

8. Dr M. M. Musthafa, Member of commission for affiliation of College, Subject expert

9. Dr M. M. Musthafa, University nominee for RAC of colleges

10. Dr M. M. Musthafa, Member, Academic council, Mampad MES College (Autonomous)

11. Dr M. M. Musthafa, Member, Governing Body, Farook College (Autonomous)

12. Dr. Mohammed Shahin, Member, Internal Quality Assurance Cell (IQAC), University of Calicut

13. Dr. Mohammed Shahin, Member, Placement Cell, University of Calicut

14. Dr. Mohammed Shahin, Coordinator, University Industry Linkage Cell, University of Calicut

15. Dr. Mohammed Shahin, Coordinator, Innovation and Entrepreneurship Development Centre (IEDC), University of Calicut

16. Dr. Mohammed Shahin, University Coordinator, Young Innovators Program of Kerala Development and Innovative and Strategic Council.

17. Dr. Mohammed Shahin, Member, Board of Studies in Physics, University of Calicut (2019 onwards)

18. Dr. Mohammed Shahin, Member, Research Admission Committee (VC-nominee), Farook College (Autonomous)

19. Dr. Mohammed Shahin, Member, Research Admission Committee (Subject Expert), Govt. Arts & Science College, Madappally, Vatakara, Kozhikode.

20. Dr. Mohammed Shahin, Member, Research Admission Committee (Subject Expert), Sree. Kerala Varma College, Thrissur.

21. Dr. Mohammed Shahin, Member, Board of Studies in Physics, Farook College Kozhikode (Autonomous) (Since 2015)
Member, Planing Board, University of Calicut

22. Dr P.P. Pradyumnan, Chairman, Board of Studies, University of Calicut

23. Dr P.P. Pradyumnan, Member, CCSS Committee, University of Calicut

24. Dr P.P. Pradyumnan, Subject expert, faculty selection committee, College teachers, Kannur University

25. Dr P.P. Pradyumnan, Subject expert, faculty selection committee and CAS, College teachers, University of Calicut.

26. Dr P.P. Pradyumnan, Referee, Journal by Elsevier, Science direct

27. Dr P.P. Pradyumnan, Reviewer, Project proposals, KSCSTE, Govt. of Kerala

28. Dr P.P. Pradyumnan, Reviewer, Project Proposals, Qatar National Research fund (QNRF) is the National funding agency.

29. Dr P.P. Pradyumnan, Reviewer, Project proposals, SERB, Govt. of India

29. Details of teachers appointed/nominated on Editorial Boards at university, state, national and international levels.

1. Dr. A. M. Vinodkumar, Member, Editorial Board, International Journal of Physics and Mathematical Sciences (JPMS).

30. Awards / Prizes and recognitions received by teachers at university, state, national and international level:

Nil

31. Awards and Prizes received by students at university, state, national and international level:

Best Paper Award to Mr Sravandas P, Research scholar in International Conference on Material Science and Chemistry, August10, 2020 organised by Amritha Viswavidyapeetham.

32. Details of Seminars/ Conferences/Workshops organized at university, state, national and international level and the source of funding with details:

Sr. No.	Name of Conference/ Seminars / Workshops	Funding agency	No. of Participants	University/State/National/ International	Dates
1	SCHOOL ON PHYSICS AND INSTRUMENTATION OF NuSTAR-FAIR (SPIN-2016) Convenor: Dr AM Vinodkumar	Bose Institute Indo-FAIR Co-ordination Centre (BI-IFCC), Kolkata		International	15-11-2016 to 19-11-2016
2	Spectroscopic Techniques for Astrophysics Convenor: Dr. Ravikumar . C.D	IUCAA		National	July 18-19, 2016
3	Workshop on Mathematica	Wolfrang Seminar		National	1 June 2016
4	National seminar on Theoretical Physics Convenor: Dr. P.P. Pradyumnan & Dr. Antony Joseph	UGC & University of Calicut		National	24-25 March 2017
5	Distribution of Irrigation equipments for farmers Convenor: Dr. Mohamed Shahin	University of Calicut		National	22/05/2017
6	Awareness programme on "Orientation Course for Engineering Graduates and Science Post-Graduates" (OCES) and "DAE Graduate Fellowship Scheme for Engineering Graduates and Physics Post-Graduates" (DGFS). Convenor: Dr.Antony Joseph	IGCAR Kalpakkam		National	07th February 2017.
7	Science and Technology of New materials for Sustainable Future" (STNM 2018)		120	National	Feb 7-9, 2018

8	National Workshop on Computer Interfaced Science Experiments using ExpEYES organized by the Department of Physics, University of Calicut in association with CSpark Research, New Delhi	KSCSTE, Govt. of Kerala, University of Calicut	60	National	27 – 29 December 2019
9	Sastrajalakam Outreach Program for School Students, held at the University of Calicut November 20 – 22, 2019 organized by the University of Calicut& funded by the State Institute of Educational Training (SIET), Govt. of Kerala.	(SIET), Govt. of Kerala, University of Calicut	60	State	November 20 – 22, 2019
10	One-Day Workshop on Computer Interfaced Science Experiments & Developing Science Projects organized by the Department of Physics, University of Calicut in association with CSpark Research, New Delhi on 23October 2019	KSCSTE, Govt. of Kerala, University of Calicut	50	National	23 October 2019
11	Two Day Space Camp for School Students organized by the Department of Physics, University of Calicut in association with ULCCS foundation on 20 & 21 July 2019	University of Calicut	80	State	20 & 21 July 2019
12	Three–Day Vacation Camp for School Students 14 -16 May 2019 – organized by the Directorate of Kerala State Institute of Children's Literature, under the Ministry of Cultural Affairs, Government of Kerala at University of Calicut.	University of Calicut	50	State	14 -16 May 2019

13	Five-Day National Workshop on Computer Interfaced Science Experiments organized by the Department of Physics, University of Calicut 06 – 10 May 2019, Venue: Aryabhatta Hall, University of Calicut	University of Calicut, KSCSTE, Govt. of Kerala.	60	National	06 –10 May 2019
14	One Day Workshop on Science Experiments for School Studentsorganized by the Department of Physics, University of Calicut on 09 February 2019	KSCSTE, Govt. of Kerala, University of Calicut	50	State	09 February 2019
15	One Day Space Camp for School Students organized by the Department of Physics, University of Calicutin association with ULCCS foundation on 26 January 2019	KSCSTE, Govt. of Kerala, University of Calicut	50	State	26 January 2019
16	One Day Workshop on Computer Interfacing and Developing Science Projects for School Studentsorganized by the Department of Physics, University of Calicut on 29th December 2018.	KSCSTE, Govt. of Kerala, University of Calicut	50	State	29th December 2018.
17	One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut on 28th December 2018.	KSCSTE, Govt. of Kerala, University of Calicut	55	State	28th December 2018
18	One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut on 27th December 2018.	KSCSTE, Govt. of Kerala, University of Calicut	50	State	27th December 2018

19	Sastrajalakam Outreach Program for School Students, held at the University of Calicut November 26 – 28, 2018 organized by the University of Calicut & funded by the State Institute of Educational Training (SIET), Govt. of Kerala.	SIET, Govt. of Kerala, University of Calicut	110	State	26 – 28, 2018
20	One Day Workshop on Electronic Experimentation Organized by the Department of Physics, PSMO College in Association with the Department of Physics, University of Calicut and KSCSTE Govt. of Kerala on 8 November 2018.	KSCSTE, Govt. of Kerala	60	State	8 November 2018.
21	Special lecture on 'Magnetism' by Dr. SafeerChenattukuzhiyil, Marie-Curie Fellow, CIC nanoGUNE, San Sebastian (Spain) on Monday 29th October2018 organized by the Department of Physics, University of Calicut	University of Calicut	80	State	29th October2018
22	Workshop & Hands on training on Arduino Programming organized at the JDT Islam Polytechnic College jointly with the host institution and the Department of Physics, University of Calicut on 6th August 2018.	KSCSTE, Govt. of Kerala	60	State	6th August 2018
23	Two Day Camp on Computer Interfaced Science Experiments organized by the Department of Physics, University of Calicut 28-29 July 2018, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	28-29 July 2018

24	Moon Day Celebrations & Two Day Residential Space Camp for School Students organized by the Department of Physics, University of Calicut 21-22 July 2018, Venue: EMS Seminar Complex & Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	100	State	21-22 July 2018
25	Two Day Science Workshop for doing Science Experiments for School Students organized by the Department of Physics, University of Calicut 11-12, May 2018, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	11-12, May 2018
26	Two Day Workshops for doing Science Experiments for School Students organized by the Department of Physics, University of Calicut on 10-11 November May 2017, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	10-11 November May 2017
27	One Day Science Workshop for doing Science Experiments for CBSE School Teachers organized by the Department of Physics, University of Calicut in association with KITE, Govt. of Kerala on 08 November May 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	08 November May 2017
28	Two Day Science Workshop for doing Science Experiments for Higher Secondary School Teachers organized by the Department of Physics, University of Calicut in association with KITE, Govt. of Kerala on 06-07 November2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	06-07 November2017

29	One Day Workshopon ExpEyes Hardware and Doing Science Experimentsorganized by the Department of Physics, University of Calicut on 15 July 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	15 July 2017
30	One Day Workshop on Mathematica Softwareorganized by the Department of Physics, University of Calicutin association with Wolfram Research USA on 20 June 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	80	State	20 June 2017
31	One Day Program for Demonstrating Electronic Devices developed by the Dept. of Physics for Farming, Irrigation and Small Scale Industries organized by the Department of Physics, University of Calicut on 15May 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	100	State	15 May 2017
32	Two day National Seminar on ADVANCED CONDENSED MATTER PHYSICS (NSACMP 2019),,,– Participants 120	Department of Physics, University of Calicut	120	National	4 5 th December 2019
33	Two day National Seminar NUCLEAR RADIATION EXPERIMENTS,	IUAC, New Delhi	30	National	3-4 January 2020- Participants - 30
34	Lecture series on applications of quantum mechanics Dr. T.N.Vasudevan,	University of calicut	40	state	20-24 August 2019,
35	Golden jubilee national seminar on NEXT STEPS IN RADIATION TREATMENT	University of Calicut	100	National	16-18 Nov.2018

36	National seminar on NUCLEAR DATA AND APPLICATIONS	University of Calicut		National	2nd June 2017
37	A series of webinars - as part of Golden jubilee celebrations of the department. Convenor: Dr A M Vinodkumar	Department of Physics		International	September 7-9, 2020

33. Student profile programme-wise at PG

PG	Applications Received	No. of students Admitted	Seats Available	Male	Female	Total	Year
M.Sc Physics	997	21	22	2	19	21	2016-17
M.Sc Radiation Physics	-	12	12	0	12	11	2016-17
M.Sc Physics	-	22	22	5	17	22	2017-18
M.Sc Radiation Physics	-	11	12	4	7	11	2017-18
M.Sc Physics	1270	21	22	6	15	21	2018-19
M.Sc Radiation Physics	584	11	12	4	7	11	2018-19
M.Sc Physics	1242	21	22	4	17	21	2019-20
M.Sc Radiation Physics	115	11	12	3	8	11	2019-20
M.Sc Physics		28	29	5	23	28	2020-21
M.Sc Radiation Physics		13	13	3	10	13	2020-21

34. Year-wise results of students at PG:

PG	Year	Appeared	Passed	Pass %	Grade %			
					O	A	B	C
M.Sc Physics	2016-17							
M.Sc Physics	2017-18	20	16	80	-	94	6	-
M.Sc Physics	2018-19	Exam postponed due to COVID-19						
M.Sc Physics	2019-20	Course not completed						
M.Sc Physics	2020-21							

35. Information about M. Phil. Programme:

Year	Applications Received	No. of students admitted	Male	Female	Total

2016-17					
2017-18	-	8	1	7	8
2018-19	32	7	-	7	7
2019-20	51	8	2	6	8
2020-21					

36. Information about Ph. D. programme :

Year	Applications Received	No. of students admitted	Male	Female	Total
2016-17					
2017-18	-	5	4	1	5
2018-19	-	9	6	3	9
2019-20	-	7	-	7	7
2020-21					

37. Number of students awarded M.Phil., Ph.D ,Degree :

Year	M.Phil	Ph.D.	Male	Female	Total
2016-2017					
2017- 2018	8	4	1+1	7+3	12
2018 - 2019	7	5	0+2	3+7	12
2019 - 2020		11	3	8	11
2020-2021					

38. Diversity of Students : (Year-wise)

Name of the Programme	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
UG		-	-	-
PG		100	0	0
M.Phil.		100	0	0

Ph. D.		87	13	0

39. Number of students cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give Category wise data.

Year	MPSC/UPSC	NET/ SET	GATE	Other Exams	Total
2016-17	-	2	1		3
2017-18	-	1	1	-	2
2018-19	-	1	1	-	2
2019-20	-	-	-	-	-
2020-21	-			-	

40. Student progression/ placement record: Number/ percentage of students proceeded for higher studies Number/percentage of students placed:

Year	% proceeded for higher studies		% of students placed
	UG to PG	PG to Ph.D./ M.Phil	
2016-17			
2017-18		30	50
2018-19		30	50
2019-20		-	
2020-21			

41. Diversity of Faculty:

Teaching faculty	%
from the same university	29.00
from other universities within the State	29.00
from other States	43.00
from outside the country	0

42. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. / D.Lit.: Nil during the period

43. Present details of departmental infrastructural & other facilities with regard to

a) Central Library Books and Journals, etc, relevant to Department : 2384 Books, 65 Journals
b) Departmental Library (books, journals etc.) : 6938 Books, 4358 Journals
c) Computers and Internet facilities for staff : 9
d) Total number of class rooms : 2
e) Class rooms with ICT facility : 2
f) Students' laboratory : 4
g) Research laboratories : 3
h) Seminar Hall : 1
i) Smart class room : 1
j) Any other facility LCDs, : 1

44. List of post-doctoral students and Research Associates

a) Post-doctoral. students-

Sr. No.	Name of the Faculty	Post-doctoral Students	Research Topic
1	NIL		
2			

b) Research Associates

Sr. No.	Name of the Faculty	Research Associates	Research Topic
1	NIL		
2			

45. Number of post graduate students getting financial assistance from the university/state / central government

Sr. No.	Year	No. of Students	Name of financial assistance
1	2016-17	15	E-Grantz
2	2016-17	5	Inspire
3	2017-18	15	State (E-grantz)
4	2018-19	12	State (E-grantz)
5	2019-20	14	State (E-grantz)
6	2020-21		State (E-grantz)

46. Curricular Aspects:

a) Does the faculty take initiative in curriculum development process?

Yes, Regular workshops by PG board and department for improving courses.

b) Is curriculum suitable to make students globally competitive in the subject? If yes, substantiate.:

Syllabus is modified after considering global changes and requirements.

c) **Does the department offer program with sufficient no. of electives options.** : Yes

d) **While framing curriculum, is feed-back taken from stakeholder's viz. Students/Alumni/Parents/Employers considered?**

Yes, from Students, PTA

e) **What is the frequency of curriculum revision? (3/4/5 years or more)**

3 years

f) **Does the curriculum have emerging thrust areas, including interdisciplinary areas? (If yes, elaborate). :** No

47. Teaching-Learning, Evaluation.

1) **Number of teachers preparing & following Academic Teaching plan :** 7

2) **How many teachers use the following teaching methods:**

a) **Interactive lecture method using blackboard, Group discussions, Problem solving, Seminars.**
All the faculty members use interactive lectures using blackboard with additional support using ICT methods.

b) **Use ICT methods to support lectures.**
All faculty members use ICT and modern communication tools for interaction and discussions.

3) **Does the Department have Peer review processes? If yes, are the suggestions effectively used to improve the teaching quality? :**
After every subject was taught, students are given feedback forms and they can submit their responses anonymously.

4) **Does the department have any mechanism to ensure that entire syllabus is completed?**
Head and DC monitor teaching percentage of portions and time to time conducts review from teachers and students.

5) **Do you offer Bridge/Remedial courses? If yes, Give details.:**
A need based remedial courses are conducted in the evenings by faculty/research scholars.

6) **What is the method for conducting internal evaluation?:**
Conventional

48. Teacher Performance:

1) **Whether the performance of the teacher assessed by the students? If yes, are the feedback reports analysed and suggestions communicated to teachers?:**
Yes

2) **Number of teachers getting a) Very Good __80 %__ b) Good 20% _____ c) Average _?____ remarks from students.**

3) **Whether suggestion boxes are kept in the department to get suggestions from students on infrastructural facilities available in the department?**
Yes

4) **Are the suggestions received from students used for improvement of**

facilities? Yes

5) **Do teachers submit Self-Appraisal Reports? Are these reports appraised by HOD and forwarded to the university with comments?** Yes, and forwarded.

6) What is the individual faculty wise h index? ?

Sr. No.	Name	H-index (google - scholar)	Remarks
1	Dr. Antony Joseph	15	
2	Dr. Libu K Alexander	10	
3	Dr. M. Mohamed Musthafa.M	11	
4	Dr. Mohamed Shahin Thayyil	13	
5	Dr. P. P. Pradyumnan	13	
6	Dr. C. D. Ravikumar	11	
7	Dr. A . M. Vinodkumar	29	

7) Give details of "beyond syllabus scholarly activities" of the department.

The students are given training for skill development. In the last 4 years 15 different skill development cources were provided to students

49. List the distinguished alumni of the department (maximum 10)

1. Dr. B.P. Ajithkumar, Senior Scientist, Inter-University Accelerator Centre, New Delhi.
2. Dr. P.Sugathan, Senior Scientist, Inter-University Accelerator Centre, New Delhi.
3. Dr. Bency V. John, Senior Scientist, BARC, Mumbai.
4. Captain George Antony, Registrar, TIFR, Mumbai.
5. Dr. P.M. Gopalakrishnan Nambissan, Senior Scientist, SINP, Kolkata.
6. Dr. E. Krishnakumar, Senior Scientist, TIFR, Mumbai.
7. Dr. D. Narasimha, Senior Scientist, TIFR, Mumbai.
8. Dr. A. Hareendranath, Senior Scientist, SINP, Kolkata.
9. Dr. G.Devan, Senior Scientist, IGCAR, Kalpakkam.
10. Dr. Pradeepkumar, Head, Radiation Safety Systems Division, BARC, Mumbai.

50. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Year	Name of the workshop/ seminar	Date From – To
2016	**School on Physics and Instrumentation of NuSTAR-FAIR**	November 15-19 2016
2020	**Two days Workshop on NUCLEAR RADIATION EXPERIMENTS**	3,4- Jan-2020
2017	One Day Workshop on Mathematica Software organized by the Department of Physics, University of Calicut in association with Wolfram Research USA at Aryabhatta Hall, University of Calicut.	20-Jun-17

2017	One Day Workshop on ExpEyes Hardware and Doing Science Experiments organized by the Department of Physics, University of Calicut	15-Jul-17
2017	One Day Science Workshop for doing Science Experiments for CBSE School Teachers organized by the Department of Physics, University of Calicut in association with KITE, Govt. of Kerala on	08-Nov-17
2017	Two Day Workshops for doing Science Experiments for School Students organized by the Department of Physics, University of Calicut	10,11-Nov-17
2018	Two Day Science Workshop for doing Science Experiments for School Students organized by the Department of Physics, University of Calicut	11,12-May-18
2018	Two Day Camp on Computer Interfaced Science Experiments organized by the Department of Physics, University of Calicut 28-29 July 2018	28,29-July-18
2018	Industry Academia Interaction Meet organized by the University of Calicut in association with Calicut Management Association	04-Aug-18
2018	Workshop & Hands on training on Arduino Programming organized at the JDT Islam Polytechnic College jointly with the host institution and the Department of Physics, University of Calicut	06-Aug-18
2018	Special lecture on 'Magnetism' by Dr. Safeer Chenattukuzhiyil, Marie-Curie Fellow, CIC nanoGUNE, San Sebastian (Spain)	29-Oct-18
2018	One Day Workshop on Electronic Experimentation Organized by the Department of Physics, PSMO College in Association with the Department of Physics, University of Calicut and KSCSTE Govt. of Kerala	08-Nov-18
2018	One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut	27-Dec-18
2018	One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut	28-Dec-18
2018	One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut	29-Dec-18
2019	One Day Space Camp for School Students organized by the Department of Physics, University of Calicut in association with ULCCS foundation	26-Jan-19
2019	One Day Workshop on Science Experiments for School Students organized by the Department of Physics, University of Calicut	09-Feb-19
2019	Five-Day National Workshop on Computer Interfaced Science Experiments organized by the Department of Physics, University of Calicut	06-10, May-2019
2019	Three-Day Vacation Camp for School Students organized by the Directorate of Kerala State Institute of Children's Literature, under the Ministry of Cultural Affairs, Government of Kerala at University of Calicut	14-16, May-2019
2019	Two Day Space Camp for School Students organized by the Department of Physics, University of Calicut in association with ULCCS foundation	20-21, July 2019
2019	One-Day Workshop on Computer Interfaced Science Experiments & Developing Science Projects organized by the Department of	23-Oct-19

	Physics, University of Calicut in association with CSpark Research, New Delhi	
2019	National Workshop on Computer Interfaced Science Experiments using ExpEYES organized by the Department of Physics, University of Calicut in association with CSpark Research, New Delhi	27-29, Dec-2019
2021	Training on Mathematica	May-21

51. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The Departmental Council meets every month and monitors the courses and receives feedback on a constant basis from students, faculty and take corrective measures and decisions to achieve the learning outcomes.

52. Highlight the Special facilities (if, any) of the Department.

1. Department have an observatory named Madhava Observatory and regular programes are organized for popularization of science as well as observations. These programmes are partially supported by IUCAA, Pune.
2. The department hosts a liquid nitrogen generator (14 ltrs/day) and LN2 is provided to other departments as well as CSIF.

53. Highlight the unique features of the department.

Department of Physics hosts one of the unique facility Madhava Observatory for training students for observational astronomy. Regularly conducts science popularization programes.

54. State the Innovative practices adopted in the department.

Special attention for needy students in the PG classes as in the form of after hours classes. More than 90 % of PG students get their project work at National Laboratories and other Universities.

55. Highlight the participation of students and faculty in extension activities.

Name of the activity	Organising unit/ agency/ collaborating agency	Name of the scheme	Number of students participated in such activities
Sastrajalakam Outreach Program for School Students, held at the University of Calicut November 26 – 28, 2018 funded by the	State Institute of Educational Training, Govt. of Kerala.	Sastrajalakam Outreach Program for School Students	120
Sastrajalakam Outreach Program for School Students, held at the University of Calicut November 26 – 28, 2018 funded by the	State Institute of Educational Training, Govt. of Kerala.	Sastrajalakam Outreach Program for School Students	100
Young Innovators Program, jointly organized by University of Calicut & Kerala Development and	Kerala Development and Innovative and Strategic Council	Young Innovators Program	80

Innovative and Strategic Council 24 July 2020			
Two Day Science Workshop for doing Science Experiments for Higher Secondary School Teachers	KITE, Govt. of Kerala		52
One Day Program for Demonstrating Electronic Devices for Farming, Irrigation and Small Scale Industries			70
Moon Day Celebrations & Two Day Residential Space Camp for School Students			80
One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut			50
One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut			40
One Day Workshop on Computer Interfacing and Developing Science Projects for School Students organized by the Department of Physics, University of Calicut			45
One Day Space Camp for School Students	ULCCS foundation		70
One Day Workshop on Science Experiments for School Students			50
Five-Day National Workshop on Computer Interfaced Science Experiments			48
Three–Day Vacation Camp for School Students organized by the at University of Calicut	Directorate of Kerala State Institute of Children's Literature, under the Ministry of Cultural Affairs, Government of Kerala		40
Two Day Space Camp for School Students	ULCCS foundation	Name of the scheme	70

56. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

a. Strengths:

We strive for keeping the best practices in higher education and research implemented in our department. We have a list of illustrious alumni who have made a strong mark across domains.

b. Weaknesses:

Shortage of faculty members limit our plans to increase electives and courses.

c. Opportunities:

Department have a good opportunity to initiate/increase interdisciplinarity in curricula and application oriented component of its educational programmes.

d. Challenges:

We requires sustenance of adequate financial support and continuous implementation of administrative reforms in order to reach global standards. Consistent up gradation and improvement in infra structure and administrative changes will make it attractive for international students.

57. Future plans of the department:

If enough faculty members are appointed, department have plans to start separate sections of Nuclear Physics and Condensed Matter Physics.

a. **Long term plans:**

Facilitate collaboration with Industries in local districts/Kerala and strengthen our students internships/projects.

b. **Short term plans:**

Inter disciplinary courses which can be part of Science programs.

Declaration by the Head of the Department/Institution:

I am aware that the above information provided by the department will be validated by the AAA committee during the visit.

HEAD, DEPARTMENT OF PHYSICS
UNIVERSITY OF CALICUT

Date: 01.06.2020

UNIVERSITY OF CALICUT

Internal Quality Assurance Cell (IQAC)

Academic and Administrative Audit

Format for preparing the faculty profile:

(Provide the information for last three years from 2016-17 to 2020-21)

1. Name of the faculty : DR. MOHAMED MUSTHAFA M
2. Name of the Department : DEPARTMENT OF PHYSICS
3. Educational qualifications : M.Phil., Ph.D.
4. Present position : PROFESSOR
5. Address for correspondence : DEPARTMENT OF PHYSICS,
   UNIVERSITY OF CALICUT ,
   CALICUT UNIVERSITY PO,
   KERALA, INDIA 673635
6. E-mail and contact number: mmm@uoc.ac.in, mm_musthafa@rediffmail.com
   Ph: 0494 2404715 (o), 2969199 (r),
   9745509190 (m)
7. Specialization: NUCLEAR PHYSICS, RADIATION PHYSICS
8. Total teaching experience: 24 YEARS
9. Courses taught: B.Sc., M.Sc., M.Phil, PH.D.

   Taught the following courses in the above programmes: Nuclear Physics, Spectroscopy, Atomic and molecular spectroscopy, Experimental techniques, electronics, Mathematical Physics.
10. Research experience: 23 years (after PhD)

11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

S.N.	Title of the project	Date of sanction and duration	Grant received	Funding agency	PI or Co-PI
1	Investigation of dependence of the isomeric cross section ration on various factors	16.12.2013 4 years	850,536	UGC-DAE Consortium for Scientific Research, Kolkata Centre, Kolkata	PI

12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

Nil

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.: **3**

S.N.	Name of the student	Title of Thesis	Date of Registration	Date of declaration of Ph.D. degree
1	Mohamed Aslam P	Effect of radiation on electronic devices	28.04.2009	20.12.2017
2	Rajesh K K	Analyis of nuclear reactions induced by light and heavy ions	21.03.2013	17.06.2020
3	Mohamed Shan P T	Investigation of the dependence of isomeric cross-section ratio on various reaction parameters	16.8.2015	21.06.2021

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

S.N.	Name of the student	Title of Thesis	Date of Registration
1	Salma Ibrahim	Trace elemental analysis of some simple ayurvedic formulations using PIXE and XRF	13.07.2015 (Submitted)

2	Silpa P	A study on physical and dosimetric aspects of image guided radiation therapy	17.08.3015
3	Hajara K	Systematic study of heavy ion induced reaction near and above coulomb barrier in the mass region A>200	04.07.2015
4	Midhun C V	Measurement, analysis and evaluation of some nuclear reactions induced by light charged particles and neutrons	06.04.2018
5	Shaima Akbar	Measurement and analysis of some photo-nuclear reactions	06.04.2018
6	Gokuldas H	Measurement of (n,p) cross section for reactions of interest in fission and fusion reactors, using surrogate method.	08.02.2021
7	Resmi K Bharathan	Photon dosimetry using Photo Nuclear Reactions	xx.05. 2021

15. Major research projects continuing/ sanctioned/ submitted: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

S.N.	Title of the project	Date of sanction and duration	Grant received	Funding agency	PI or Co-PI
1	Measurement, analysic, evaluation and compilation of nuclear reaction data at low and medium energies	11.12.17 4 years (4470,050)	35,44,050	Department of Atomic Energy Board of Research in Nuclear Science (DAE-BRNS)	PI
2	Pre-equilibrium neutron emission at high excitation energies and validation withnuclear reaction models	20.11.2020 3 years (9,75,000/-)	25,000	Inter University Accelerator Centre, (IUAC) New Delhi	PI
3	Calicut University Particle Accelerator Facility for studies in nuclear physics and	(first reviewed)	---	DST-SERB Department of Science and Technology, Govt	PI

	applications	3 years (8,45,68,000/-)		of India	

16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

S.N.	Name of the conference/symposia	Organizer and date	International/National/regional	Role of participation
1	Webinar series -Meet Alumnus- Exploring the Vistas in Physics	Ponani MES College, 27 October J2020	National	Invites speaker
2	Element- the Webinar series - Radiation: Hazards, Protection and Safety	Malabar College of Engineering, Desamangalam, Kerala 10 June 2020	Regional	Invited speaker
3	Centenary conference on Nuclear Physics	Aligarh Muslim University, Aligarh 2-4 March 2020	National	Invited speaker
4	International conference on New Frontiers in Nuclear Physics,	Banaras Hindu University Varanasi, UP., India, 13-17Oct 2019	International	Invited speaker
5	DAE International Sypmosium on Nuclear Physics	Bhabha Atomic Research Centre 10-13 Dec 2018	International	Presented Paper

6	DAE Sypmosium on Nuclear Physics	Saha Institute of Nuclear Physic, Kolkatta 5-9 Dec 2016	National	Presented paper
7	DAE-BRNS Theme meeting on covarience in Nuclear data,	Manipal University (Manipal Academy of Higher Education, Manipal, Karnataka, 9-13Dec. 2017	International	Participation
8	Regional Seminar on Radiation - safety	Pawai College of Engineering, Namakkal, Tamilnadu 10 April, 2017,	Regional	Invited speaker
9	National Conference on Radiation- Medical, industrial and Research applications,	Sir Syed College, Taliparamba, Kerala 25, 26 November 2016	National	Invited speaker

17. Innovative processes developed in teaching and learning.

    Developed Digital teaching learning- method, online problem solving, for M.Sc. Physics students on Spectroscopy, Nuclear Physics and Radiation Physics

18. Participation in curricular development:

    Design and prepare syllabus for, Nuclear physics, spectroscopy and Radiation Physics for M.Sc. Physics course

    Complete syllabus for M.Sc. Radiation Physics course

    syllabus for B.Voc course in Optometry and opthalological instruments

19. Participation in co-curricular and extra-curricular activities.

Involved in cultural and social activities of students

20. Refresher and Orientation courses attended:

S.N.	Name of the programme	Organizer and date	International/National/regional
1	Online orientation training programme for mentors from higher education institutions/ universities (UGC)	National Institute of Teachers Training and Research, Chennai 1-10 Feb 2021	National
2	Online hands on training programme on Learning Management System-Moodle	University of Calicut 25 May- 9 June 2020	Regional

21. Examination /Evaluation reforms initiated:

Initiated online examinations for M.Sc. Physics

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Published papers in journals. (Please see attached)

Sl. No.	Title with page nos.	Journal	ISSN/ ISBN No.	Whether peer reviewed.Impact factor, if any	Co- authors	W a a
20	On the estimation of 62Cu(n,xa) cross section Manuscript ID 2834/12/20	Physical Review Letters	0031-9007	Yes 8.385	C V Midhun, M.M.Musthafa, Dshaima Akbar, S V Suryanarayana, A pal, S Santra,	Y P C

	(reviewed)				B.K.Nayak, E.T.Mirgule, Alok Saxena..	
19	Impact of 7Be break-up on 7Li(p,n) neutron spectrum Manuscript ID 1817/01/21 (reviewed)	Physical Rreview C	2469-9985	2.988	C V Midhun, M.M.Musthafa, Dshaima Akbar, S V Suryanarayana, A pal, S Santra, PC Raut.. S. Ganesan	Y P C
18	Trace elemental finger printing of Ayurvedic formulation Nishakatakadi using XRF and NAA **328**, 435–446(2021)	Journal of Radioanalytical and Nuclear Chemistry	0236-5731	Yes 1.137	R V Salma Ibrahim, M M Musthafa, K M Abdurahman and M Aslam,	Y
17	Experimental determination of thermal neutron fluence around Elekta Versa HD linear accelerator for various photon energies **6** 055018, (2020) https://doi.org/10.1088/2057-1976/abac90	**Biomedical Physics & Engineering Express**	2057-1976	Yes 1.10	Vysakh R, Musthafa Mohamed, Midhun C V, Niyas Puzhakkal, Anjana P T, Krishnan M P Arun, Ranjith C P, Irfad M P, Ganapathi Raman, R	Y n
16	Silicon based nano-sensors for neutron dosimetry: proof of concept 33(5),2293 (2020) April 2020 DOI:10.1016/j.matpr.2020.04.227	Materials Today: Proceedings	2214-7853	0.97	Swapna Lilly Cyriac; B Bindhu; C V Midhun; M M Musthafa	Y M
15	A Comparative Study of Photo-Neutron Production from Flattened and Unflattened Beams in a Medical Linear Accelerator 10(12),393, Dec.2019	Indian Journal of Public Health Research and Development			K. R. Rajesh, M. M. Musthafa , Hridya Raj, Naiby Joseph, R. Ganapathi Raman	
14	The estimation of radiation induced damages on nano-structured nuclear radiation detectors	AIP Conference Proceedings 2100(1):020088(2019)	0094-243X	0.25	Cyriac Swapna Lilly[1,a)], Bindhu B.[1,b)], Midhun C. V.[2], Musthafa M. M.[2], *and* Raman R.	

					Ganapathi[1]	
13	Systematic study on some isotopes of medical and industrial applications, produced in proton induced reaction on natural cadmium Eur. Phys. J. Plus (2020) 135:385	European Physical Journal Plus	2190-5444	3.23	P. T. M. Shan, M. M. Musthafa T. Najmunnisa P. Mohamed Aslam , K. K. Rajesh , K. Hajara, P. Surendran , J. P. Nair , Anil Shanbagh , S. S. Ghugre	
12	Measurement and analysis of photonuclear reactions on thick target samples of biological importance Vol. 58, May 2020, pp. 404-408	Indian Journal of Pure and applied Physics	**0019-5596**	0.653	Salma Ibrahim R V , Musthafa M M Midhun C V Swapna Lily Cyriac & Sajeev S	
11	A passive method for absolute dose evaluation of photoneutrons in radiotherapy, 18(1),173 (2020)	International Journal of Radiation Research,	0449-3060	1.195	K R Rajesh, R.Ganapathiraman, M.M.Musthafa, C V Midhun and N Joseph,	
10	Spectroscopy of High-Intensity Bremsstrahlung Using Compton Recoiled Electrons, J 94, 207–212 (2020)	Nuclear Science and Engineering	0029-5639	1.138	C V Midhun, M M Musthafa, Shaima Akbar, Swapna Lilly Cyriac, and Antony Joseph,	C
9	Semiclassical and quantum mechanical analysis of α-particle-induced reactions on praseodymium: A study relevant to precompound emission 99, 014608 (2019)	Physical review C	0556-2813	6.7	Manoj Kumar, Sharma, MM Musthafa,Mohd Shuaib, Mahesh Kumar, Vijay Raj Sharma, Abhishek Yadav, Pushendra P. Singh, B. P. Singh, and R. Prasad	y d
8	Trace elemental fingerprinting of Ayurvedic medicine - Triphala Churna using XRF and ICPMS	Journal of Radioanalytical and Nuclear Chemistry	0236-5731	Yes 1.137	R V Salma Ibrahim, K M Abdurahman	C

					and M Aslam	
7	Measurement of fusion evaporation residue cross sections in the 48 Ti + 138 Ba reaction 100, 044611 (2019)	*Physical Review C*	0556-2813	6.7	K. K. Rajesh , N. Madhavan, S. Nath, J. Gehlot, Jhilam Sadhukhan, P. Mohamed Aslam, P. T. Muhammed shan, E. Prasad, M. M. Hosamani, T. Varughese, Abhishek Yadav, Vijay R. Sharma, Vishal Srivastava, Md. Moin Shaikh, M. Shareef, A. Shamlath, and P. V. Laveen	C
6	Trace elemental fingerprinting of selected herbs used in Ayurveda using XRF and ICPMS, 8(3): 3429-3433 (2019)	Journal of Pharmacognosy and Phytochemistry	2349-8234	-	Salma Ibrahim, M Aslam and	C
5	Photo-neutron detection using Cr-39 solid state nuclear track detector 2100(1):020137 (2019)	AIP Conference proceedings	0094243X	0.3	K. R. Rajesh, C. V. Midhun, Joseph Naiby, Ganapathi Raman Rajendran	
4	The estimation of Radiation Induced Damage on Nanostructured Nuclear Radiation Detectors	AIP Conference proceedings	0094243X	0.3	Swapna Lilly Cyriac, Midhun C.V, B.Bindhu R.Ganapathi Raman	M
3	Measurement of excitation functions and analysis of isomeric population in some reactions induced by proton on natural indium at low energy Nucl. Phys. A 974 (2018) 9–21	Nuclear Physics A	0375-9474	Yes 1.9	Muhammed Shan P.T. Najmunnisa T. Mohamed Aslam P., Rajesh K.K, Hajara K., Surendran P. J.P. Nair, Anil Shanbagh, S.	C a g

					Ghugre	
2	Existing and upcoming particle accelerators in India INDC(IND)-0050 Distr. G November 2017	IAEA-International Nuclear Data Committee report		Yes	B. Lalremruata, S. Kailas, V.N. Bhoraskar, S.Ganesan, Alok Saxena, B.K. Nayak, Ajay Tyagi, M.M.Musthafa, S. Mukherjee, G. Mukherjee, H. Naik and S.D. Dhole	C a
1	Fabrication of carbon sandwiched thin targets of 138 Ba by evaporation technique _ Vacuum, 141, 230 (2017)	Vacuum	0042-207X	Yes. 2.96	K.K. Rajesh, M.M. Musthafa, M.M. Hosamani, A. Shamlath, S.R. Abhilash, D. Kabiraj	P

23. Books published: with ISBN No., Without ISBN No., Chapters in books.

NIL

24. Patents Applied/Granted: National. International, commercialized:

NIL

25. Consultancy services provided and revenue generated:

Consultation for course develepment- free consultation only

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

1. Lecture series on applications of quantum mechanics Dr. T.N.Vasudevan,20-24 August 2019,

2. Lecture series on applications of quantum mechanics Dr. T.N.Vasudevan,20-24 July 2018,

3. Lecture series on advances in quantum mechanics Dr. T.N.Vasudevan,20-24 June 2017,

4. National seminar on National seminar on NUCLEAR DATA AND APPLICATIONS 2nd June 2017

27. Number of collaborations: 7

BARC, IUAC, NIU, MCC, UGC-DAE, VECC, TIFR

28. Awards /recognitions received: International, National, State, University level.

NIL

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty :*Dr.Antony Joseph*
2. Name of the Department :*Physics*
3. Educational qualifications :*M.Sc, Ph.D*
4. Present position :*Professor*
5. Address for correspondence : *Department of Physics, University of Calicut,*

   Calicut University P.O., Malappuram Dt. - 673635
6. E-mail and contact number :*aj@uoc.ac.in*
7. Specialization :*Nuclear Physics (Research areas include Environmental Radioactivity and Nonlinear optics)*
8. Total teaching experience : *26 years*
9. Courses taught :*M.Phil :Mathematical Physics, Elective Papers*

   M.Sc : Electrodynamics and Plasma Physics, Radiation Physics,

   Computational Physics Practicals, Modern Physics Practicals
10. Research experience :*24 years*
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI. : Nil
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI. : Nil.
13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.

Sl. No.	Name of student	Topic of research	Date of registration	Date of declaration of Ph.D degree
1.	Jayakrishnan K.	Investigation of coumarin, indole and azopolyester based molecular systems for	03-04-2009	31-11-2016

		nonlinear optical applications		
2	Deepthy Maria Joseph	Structure study of exotic nuclei using cluster models	01.11.2012	13.03.2019
3	Nithu Ashok	Structure studies of nuclei using self consistent mean fields	03.01.2013	16.10.2019
4	Ramsiya M.	Estimation of radon and thoron in environmental samples	31.10.2012	04.09.2019

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

Sl. No.	Name of studentVishnu C. V	Topic of research	Date of registration
1	Vishnu C V	Investigations on the natural radioactivity and gamma attenuation properties of building materials	22.09.2017
2	Nicemon Thomas	The effect of pairing correlations in atomic nuclei with special reference to proton radioactivity.	11.04.2018
3	Binesh M.	Thermal and Dielectric Study of Relaxation Process in Glass Forming Systems.	25.05.2018
4	Anjana A.V.	Study of Nuclear reactions and pairing correlations in infinite nuclear matter	15-12-2018
5	Ummukulsu E.	Evolution of collective behaviour among thorium nuclides spanned between the drip lines.	03.05.2019

15. Provide information as indicated in 11 and 12 above.

16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

*1. 61st DAE-BRNS Symposium on Nuclear Physics, December 05-09,**2016**, Saha Institute of Nuclear Physics, 1/AF Bidhannagar, Kolkata -700064, India.*

2. 62nd DAE-BRNS Symposium on Nuclear Physics, Patiala, India, December 20-24, 2017

3. 63rd DAE International Symposium on Nuclear Physics, December 10-14, 2018

Bhabha Atomic Research Centre, Mumbai-400 085, India

4. 64th DAE-BRNS Symposium on Nuclear Physics, December 23-27, 2019, Department of Physics, Lucknow University, Lucknow, U.P.-226007

17. Innovative processes developed in teaching and learning : .

18. Participation in curricular development :*Being the chairman, Board of studies in Physics PG, for two consecutive terms, actively participated in the development of the syllabus of M.Sc Physics in 2017 revision and in 2019 revision.*

19. Participation in co-curricular and extra-curricular activities :

Sl.No.	Name	Title of the event	Organizer & venue	International/ national	Period
1.	Resource Person	One-day National workshop on “First Step to Latex”	S.A.R.B.T.M. Govt. College, Koyilandy	National	08-11-2019
2	Delivered invited talk	National Symposium on “Recent Advances in Physical Science”	Rani Anna Govt. College for Women, Tirunelveli	National	18-19 March 2019
2	Delivered invited talk	National Seminar on “How atom benefits our life”	St. Thomas College, Thrissur	National	4-5 February 2019

14. Refresher and Orientation courses attended :

15. Examination /Evaluation reforms initiated : *Participated in the discussion on the possibilities of online examination for the M.Sc students.*

16. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

In peer reviewed journals (latest first)

12. Studies on partial and total photon interaction parameters in the energy range 1 keV-100 GeV of some synthetic polymers having medical applications, Antony Joseph, Thulasi P.V., K.Muraleedhara Varier, Radiation Physics and chemistry, Volume 180, March 2021, 109252, *Impact Factor:2.226*

11. A systematic study of the ground state properties of W, Os and Pt isotopes using HFB theory, Nithu Ashok and Antony Joseph, International Journal of Modern Physics E, Vol. 28, No. 10 (2019) 1950093, *Impact Factor:1.038*

10. Study of level density and reaction cross sections in Thorium isotopes, Erumban Ummukulsu, Nithu Ashok and Antony Joseph, Modern Physics Letters A, Vol. 34 (2019) 1950091 (11pages), *Impact Factor:1.391*

9. Activity concentrations of radionuclides in soil samples along the coastal areas of Kerala, India and the assessment of radiation hazard indices, M.Ramsiya, Antony Joseph, K.P.Eappen, A.K.Visnuprasad, Journal of Radioanalytical and Nuclear Chemistry (2019) 320:291–298 (8 pages), *Impact Factor:1.240*

8. A systematic study of alpha and cluster decay in Platinum isotopes, Nithu Ashok and Antony Joseph, Int. J. Mod. Phys. E, Vol. 27, No. 11 (2018) 1850098 (13 pages) , *Impact Factor:1.036*

7. Alpha and cluster decay half-lives in tungsten isotopes : a microscopic analysis, Nithu Ashok,Antony Joseph,Nuclear Physics A977 (2018) 101–111, *Impact Factor:1.695*

6. A theoretical study of cluster radioactivity in platinum isotopes, Deepthy Maria Joseph, Nithu Ashok and Antony Joseph, The European Physical Journal A – Hadrons and Nuclei, 54:8 (2018) 1-6., *Impact Factor:2.481*

5. Estimation of indoor radon and thoron in dwellings of Palakkad, Kerala, India using solid state nuclear track detectors, M. Ramsiya, Antony Joseph and P.J. Jojo, Journal of Radiation Research and Applied Sciences, Volume 10, Issue 3, (2017), Pages 269-272, *Impact Factor:1.804*

4. Cluster decay in osmium isotopes using Hartree Fock Bogoliubov theory, Nithu Ashok, Deepthy Maria Joseph and Antony Joseph , Modern Physics Letters A Vol. 31, No. 7 (2016) 1650045, *Impact Factor:1.395*

3. A systematic study of proton, alpha and cluster decays in Rhenium isotopes using the effective liquid drop model Deepthy Maria Joseph, Nithu Ashok and Antony Joseph, Modern Physics Letters A Vol. 31, No. 5 (2016) 1650031, *Impact Factor: 1.391*

2. Reverse saturable absorption studies in polymerized indole – Effect of polymerization in the phenomenal enhancement of third order optical nonlinearity, K. Jayakrishnan, Antony Joseph, Jayakrishnan Bhattathiripad, M.T. Ramesan, K. Chandrasekharan, and N.K. Siji Narendran, Optical Materials 54 (2016) 252–261, *Impact Factor:2.367*

1. Synthesis, Z-Scan and Degenerate Four Wave Mixing characterization of certain novel thiocoumarin derivatives for third order nonlinear optical applications, K.Jayakrishnan, Antony

joseph , Paulson Mathew, T.B.Siji, K.Chandrasekharan, N.K.Siji Narendran, M.A.Jaseela, K.Muraleedharan, Optical Materials, 58 (2016)171-182 *Citations : 8, Impact factor :2.238*

In Seminar/conference proceedings

10. Effective and collective level density parameters for thorium isotopes, Ummukulsu E. and Antony joseph, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 128-129

9. A Study on Pairing Correlation in Ni Isotopes, Nicemon Thomas, Anjana A. V and Antony Joseph, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 254-255

8. Study of Pairing Correlations in Neutron-rich Nuclei, Anjana.A.V, Nicemon Thomas, and Antony Joseph, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 230-231

7. Projected Shell Model Studies on Tantalum Isotopes Athira P S and Antony Joseph, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 220-221

6. Shape evolution and coexistence in Hg isotopes Nithu Ashok, Simji P. and Antony Joseph, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 62-63

5. Design of Flexible Gamma Ray Shielding Material Composite of Natural Rubber with Coconut Shell/Clay Powder Vishnu C V, Antony Joseph , T.A.Sajith, and Sabu Thomas, Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019), 886-887

4. Extraction of Neutron Pulses from Coincidence Summed Events via Machine Learning - Like Algorithm Midhun C.V1 , M.M Musthafa1 , Antony Joseph1 , Jagadeesan K.C2 , S. Ganasan, Proceedings of the DAE Symp. on Nucl. Phys. 63 (2018), 1134-1135

3. Shape co-existence in tungsten isotopes Nithu Ashok, Jhilam Sadhukhan, and Antony Joseph, Proceedings of the DAE Symp. on Nucl. Phys. 62 (2017), 202-203

2. Probable exotic decays in Tungsten isotopes, Deepthy Maria Joseph, Antony Joseph and Nithu Ashok, Proceedings of the DAE Symp. on Nucl. Phys. 62 (2017), 184-185

1. One quasiparticle configurations in Lanthanum isotopes, Nithu Ashok , Deepthy Maria Joseph and Antony Joseph, Proceedings of the DAE-BRNS Symp. on Nucl. Phys. 61 (2016), 184-185

17. Books published: with ISBN No., Without ISBN No., Chapters in books.

Book chaper: Chapter 13 Neutron Spectroscopy Techniques, Antony Joseph in : Sajith Thottathil Abdulrahman, Sabu Thomas and Zakiah Ahmad (Eds.), Micro and nanostructured composite materials for neutron shielding applications, Woodhead publishing, Elsevier, Cambridge, United States, 2020, doi: https://doi.org/10.1016/C2019-0-00001-5

18. Patents Applied/Granted: National. International, commercialized: Nil

19. Consultancy services provided and revenue generated:Nil

20. Conferences ,seminars, symposia and workshops organizProceedings of the DAE Symp. on Nucl. Phys. 64 (2019)ed as convener/coordinator:

Coordinator of “Two-day National seminar on New Trends in Nuclear Reactions and Structure Studies : NTNRS-19 “, held during 06-12-19 to 07-12-19.

21. Number of collaborations :Nil

22. Awards /recognitions received: International, National, State, University level.: Nil

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

****

Format for preparing the faculty profile:

(Provide the information for last three years from 2016-17 to 2020-21)

1. Name of the faculty: **Dr. Mohamed Shahin Thayyil**
2. Name of the Department: **Department of Physics**
3. Educational qualifications: M.Sc. in Physics, PhD in Physics
4. Present position: Assistant Professor
5. Address for correspondence: **Assistant Professor, Department of Physics**
   University of Calicut, Kerala– 673 635 (INDIA)
6. E-mail and contact number: shahin@uoc.ac.in

   Ph: +91-494-2401144, Mobile # **+91-9961824725**
7. Specialization: Material Science

   (Amorphous Materials, Amorphous Pharmaceuticals Ionic liquids, Electrochemical studies, Supercapacitors)
8. Total teaching experience: 15 years
9. Courses taught: Electronics, Electronics (Laboratory)

   Computational Physics, Numerical Techniques, Solid State Physics, Computational Physics (Laboratory)

   Research Methodology (M.Phil), Broadband Dielectric Spectroscopy (M.Phil)
10. Research experience: 20 Years of research experience
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

Sl. No.	Name of the Principle Investigator	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lakh)	Remarks if any
1	Dr. Mohamed Shahin Thayyil, Asst. Professor	Relaxation process in glass forming pharmaceuticals	UGC (MRP), 2013 – 17, Impl: 17/07/2013	13.41	
2	Dr. Mohamed Shahin Thayyil, Asst. Professor	Critical study of relaxation processes in organic glass formers using broadband	KSCSTE (SRS), 2014 – 17	16.91	

		dielectric spectroscopy	Impl: 01/04/2014		
3	Dr. Mohamed Shahin Thayyil, Asst. Professor	Thermal and dielectric study of relaxation process in glass forming systems	UGC-DAE (BARC Centre, Mumbai), 2015 – 17 Impl: 26/03/2015	6.30	
4	Dr. Mohamed Shahin Thayyil, Asst. Professor	Reviving the Interest in Science through Electronics	KSCSTE – SPS, 2016 – 18 Impl: 26/05/2017	3.50	
5	Dr. Mohamed Shahin Thayyil, Asst. Professor	Microcontrollers & Embedded Systems for Students, Farmers and Small Scale Entrepreneurs	Extension Activities, UGCXII Plan, University of Calicut, 2013 – 17 Impl: 04/03/2014	10.10	
6	Dr. Mohamed Shahin Thayyil, Asst. Professor	'**RemoLock™** (Remotely controlled Smart Security Lock for Shared Mobile Tower Stations), an industrial collaborative project with **M/s. Tulus Networks LLP, Bangalore**	University Industry Linkage, UGCXII Plan, University of Calicut, 2016 – 17 Impl: 01/12 /2016	4.95	
7	Dr. Mohamed Shahin Thayyil, Asst. Professor (Coordinator)	Thermal and spectroscopic investigations on amorphous materials, Impl: 26/03/2015	KSCSTE (SARD scheme)	35.5	

12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.

Guided students

1. **Sailaja Urpayil**, 'Relaxation Process in Amorphous Pharmaceuticals' awarded in 2013
2. **Safna Hussan KP**, 'Ionic liquids and ionogels for pharmaceutical and electrochemical applications awarded in 2020.
3. **Sahra Mohamed**, 'Molecular Relaxations and Crystallization Kinetics of Amorphous Pharmaceuticals using Broadband Dielectric Spectroscopy' Awarded in 2020.
4. **Thasneema K.K**, 'Thermal and Spectroscopic Investigations on Ionic Liquids and their Applications' Awarded in 2020.
5. **Shabeeba P.** 'Development of ionogel electrolyte incorporated carbonaceous supercapacitors' 11/11/2020

Co-guided students

6. **Suneera T.P,** 'Studies on beam dynamics in single and coupled parity time symmetric systems with Kerr and nonlocal nonlinearity', Regn. date. 08/07/2013.

7. **Usha K,** Studies on energy feedback and collective dynamics of Hindmarsh-Rose neutron model with electrical, chemical and field couplings. Regn. date: 01/11/2012, Award effect date: 17.07.2019.

8. **Musammil N.M,** 'Studies on propagation and interaction of multi-solitons in inhomogeneous optical systems', Regn. No. 9063/2014/Admn. Dated 18/09/2014, Award date: 17.12.2019

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

No	Candidate	Title	Date of Registration	Part time/ Full time	Type of fellowship
1	Nighil Nath M. P	Thermal and spectroscopic investigations on some plastic crystals	27/09/2014	Full Time	On going
2	Aboothahir Afzal	Broadband dielectric relaxation spectroscopy studies on glass forming Bio-pharmaceuticals	27/03/2014	Part Time	On going
3	Meera Nair	Electrochemical investigations on ionic liquid based rechargeable batteries	20/08/2020	Full Time	On going
4	Albert Thomas	Turning Solubility of Amorphous Pharmaceuticals by Mixing with Polymeric Excipients	01/12/2020	Part Time	On going
5	Sebastian Koothottil (Co-Guide)	Study of Quantum Chromodynamics at finite temperature	29/10/2014	Full Time	submitted

15. Provide information as indicated in 11 and 12 above.

All the relevant orders of sanctions & university orders have been attached.

16. **Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.**

1. Relaxation dynamics in amorphous pharmaceuticals: Insights from the classic glass formers at **8th International Discussion Meeting on Relaxation in Complex Systems** held at Wisla, **Poland** 23 – 29 July, 2017

2. Chaired a session of Project presentation by the participants in the Refresher Course in Material Science organized by the Academic Staff College on 10 December 2019

3. Chaired a session in the International Conference organized by the Department of Physics, St. Joseph's College Devagiri on 17 December 2019.

4. Relaxation dynamics in amorphous pharmaceuticals: Insights from the classic glass formers at **8th International Discussion Meeting on Relaxation in Complex Systems** held at Wisla, **Poland** 23 – 29 July, 2017

5. Attended the National Level Workshop on the Dual Mode University Manual of NAAC (National Assessment and Accreditation Council, Bengaluru on 18 December 2019 at NAAC Headquarters Bengaluru, India

6. Chaired a session in the International Conference organized by the Department of Physics, St. Joseph's College Devagiri on 17 December 2019.

7. Attended International Conference on Emerging Frontiers in Chemical Science, organized by the Chemistry Department, Farook College (Autonomous) 13-15 December 2019.

8. Attended National Workshop on Bruker Single Crystal X-Ray Diffraction & User Training organized by Bruker India Scientific Pvt. Ltd held at Annamalai University, Tamilnadu – 608 002 on September 27 & 28, 2019.

9. Attended International Symposium on Dissolution Science and Applications at Chandigarh, India organized by the National Institute for Pharmaceutical Education and Research (NIPER) – Mohali and Society for Pharmaceutical Dissolution Science (SPDS), India on 12-13 September 2019.

10. Attended Workshop on Dissolution Science and Applications at Chandigarh, India organized by the National Institute for Pharmaceutical Education and Research (NIPER) – Mohali and Society for Pharmaceutical Dissolution Science (SPDS), India on 11 September 2019.

11. National Seminar on Frontiers in Chemical Sciences (FCS –2019) held at the at the Department of Chemistry, University of Calicut from 19 – 21, March 2019.

12. Attended International Conference on Supercapacitors, Energy Storage & Applications (ICSEA – 2019) organized by the Centre for Materials for Electronics Technology C–MET held at Thrissur during 8-10 March 2019

13. Attended Workshop on Redesigning of Courses for Outcome Based Education (OBE) organized by the Kerala State Higher Education Council held at the University of Calicut from 12 – 14, February 2019.

17. Innovative processes developed in teaching and learning.

    Associated with syllabus revisions and modifications to accommodate evolving trends and technologies. Developing online resources for teaching & learning activities.

18. Participation in curricular development:

    Syllabus revisions and modifications to accommodate evolving trends and technologies, developing online resources for teaching & learning activities.

19. Participation in co-curricular and extra-curricular activities.

    Involved in developing microcontroller based devises and equipment for irrigation and house-hold applications. Conducted more than 20 programs in which each program attended by more than 50 participants

20. Refresher and Orientation courses attended:

Name of the Course/Summer School	Place	Duration	Sponsoring Agency
One Week Training Program on 'Computer InterfacedScience Experiments'	IUAC New Delhi	9/10/2017 To 14/10/2017 (6 days)	Inter University Accelerator Centre (IUAC) New Delhi.
NPTEL online course on 'Physics through computational thinking'	Online	February – April 2020(8 weeks)	NPTEL – Swayam onlinecourse. IISER, Bhopal

21. Examination /Evaluation reforms initiated:

    Developed online based evaluation system for internal examinations…….

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Sr. No.	Papers published in peer reviewed journals	Monographs, Books, Chapters in books	Citations	*h*-index	Impact factor range/Average Impact factor
1	Thasneema KK, Dipin T., **M. Shahin Thayyil**, Pramod K Sahu et al, Removal of toxic heavy metals, phenolic compounds and textile dyes from industrial waste water using phosphonium based ionic liquids J. Mol. Liquids 307, 114645 (2020) (Impact Factor 5.06) https://doi.org/10.1016/j.molliq.2020.114645				**Impact Factor 5.06**
2	Studies on Histamine H2-Receptor Antagonists by Using Density Functional Theory, KPS Hussan, IJJ Raj, S Urpayil, **M. Shahin Thayyil**, Drug Design-Novel Advances in the Omics Field and Applications				
3	KK Thasneema, **M. Shahin Thayyil**, T Rosalin, KK Elyas, ... 'Thermal and spectroscopic investigations on three phosphonium based ionic liquids for industrial and biological applications' **J. Mol. Liquids 307**, 112960 (2020)		**5**		**Impact Factor 5.06**
4	A. Afzal, **M. Shahin Thayyil**, P.A. Sivaramakrishnan, U. Sailaja, S. Capaccioli, 'Molecular dynamics in the supercooled liquid and glassy states of bezafibrate and binary mixture of fenofibrate' J. Non-Crystalline Solids. 550, 120407 (2020) (2020)				**2.12**

5	K.P. Safna Hussan, **Mohamed Shahin Thayyil**, 'Charge transport and glassy dynamics in a room temperature ionic liquid-[BMPyr][TFSI]' J. Non-Crystalline Solids. 541, 120133 (2020)				**Impact Factor 2.12**
6	Jinitha T.V, Safna Hussan K.P., M. Shahin Thayyil, E. Purushothaman, 'The interplay between the fragility and mechanical properties of styrene–butadiene rubber composites with unmodified and modified sago seed shell powder', **J. Applied Polymer Science**, ---, ---- (2020)				(**Impact Factor 2.19**)
7		**Chapter in Book** Safna Hussan K.P, **M. Shahin Thayyil**, TS Ahamed, K. Muraleedharan, 'Biological Evaluation and Molecular Docking Studies of Benzalkonium Ibuprofenate' a chapter in the book **Computational Biology and Chemistry, IntechOpen** (2020) DOI:10.5772/intechopen.90191			
8	Shabeeba P., **M. Shahin Thayyil**, M. P. Pillae, Thasneema K.K, 'PMMA-RTIL electrolyte for high-energy supercapacitors: A comparison of different anions' **J. Mol. Liquids 294**, 111671 (2019) https://doi.org/10.1016/j.molliq.2019.111671				(**Impact Factor 5.06**)
9	Safna Hussan K.P, **M. Shahin Thayyil**, Ashna Poulose, K.L. Ngai, 'Glassy Dynamics and Translational-Rotational Coupling of an Ionically Conducting Pharmaceutical Salt-Sodium Ibuprofen, **J. Phys. Chem. B 123**, 7764–7770 (2019) https://doi.org/10.1021/acs.jpcb.9b03929		**1**		**Impact Factor 3.15**

10	Aboothahir Afzal, **M. Shahin Thayyil**, et.al, 'Anti-Cancerous Brucine and Colchicine: Experimental and Theoretical Characterization', Chemistry Select **4**, 11441 – 11454 (2009), DOI: 10.1002/slct.201902698		**5**		**Impact Factor 1.76**
11	Safna Hussan K.P, **M. Shahin Thayyil**, Vijisha K Rajan, Anu Antony, 'The interplay between charge transport and CO_2 capturing mechanism in [EMIM][SCN] ionic liquid - A broadband dielectric study, **J. Phys. Chem. B 123** (30), 6618-26 (2019), https://doi.org/10.1021/acs.jpcb.9b03929		**4**		**Impact Factor 3.15**
12	Shabeeba Pilathottathil, **M. Shahin Thayyil**, M. P. Pillae, Jemshihas A.P, 'Role of a printed circuit board copper clad current collector in supercapacitor application' Journal of Electronic Materials' (2019) (https://doi.org/10.1007/s11664-019-07365-6)		**2**		**Impact Factor 1.58**
13	S. Capaccioli, K. L. Ngai, S. Ancherbak, M. Bertoldo, G. Ciampalini, **M. Shahin Thayyil**, Li-Min Wang, 'The JG β-relaxation in water and impact on the dynamics of aqueous mixtures and hydrated biomolecules' **J. Chem. Phys. 151,** 034504 (2019); https://doi.org/10.1063/1.5100835		**13**		(**Impact Factor 3.00**)
14	Safna Hussan K.P, **M. Shahin Thayyil**, Jinitha TV, Jayant Kolte, 'Development of an ionogel membrane PVA/[EMIM] [SCN] with enhanced thermal stability and ionic conductivity for electrochemical application, **Journal of Molecular Liquids 274**, 402 – 413 (2019)		**9**		(**Impact Factor 5.06**)

15	Jithesh Kavil, Shabeeba Pilathottathil, **M. Shahin Thayyil**, Pradeepan Periyat, 'Development of 2D nano heterostructures based on g-C3N4 and flower shaped MoS2 as electrode in symmetric supercapacitor device '**Nano-Structures & Nano-Objects' 80**, 46 – 53 (2019)		**7**		(**Impact Factor 1.10**)
16	Safna Hussan K.P, **M. Shahin Thayyil**, Vijisha K Rajan, K. Muraleedharan, 'DFT studies on global parameters, antioxidant mechanism and molecular docking of amlodipine besylate' **Computational Biology and Chemistry 80**, 46 – 53 (2019)		**6**		**Impact Factor 1.01**
17	Aboothahir Afzal, **M. Shahin Thayyil**, P.A. Sivaramakrishnan, M.K. Sulaiman, K.P. Safna Hussan, C. Yohannan Panicker, K.L. Ngai, 'Dielectric spectroscopic studies in supercooled liquid and glassy states of Acemetacin, Brucine and Colchicine' **J. Non-Crystalline Solids. 508**, 33-45 (2019)		**8**		**Impact Factor 2.12**
18	M. Sahra, **M. Shahin Thayyil**, A.K. Bansal, K.L. Ngai, M.K. Sulaiman, Ganesh Shete, Safna Hussan K.P., 'Dielectric spectroscopic studies of three important active pharmaceutical ingredients - clofoctol, droperidol and probucol' **J. Non-Crystalline Solids. 505**, 28-36 (2019)		**11**		**Impact Factor 2.12**
19	Nighil Nath M P, Sulaiman M.K. and **M. Shahin Thayyil**, 'Thermal & dielectric spectroscopic investigation on orientationally disordered crystal- cyclobutanol' **Materials Today: Proceedings 18,** 1620-1626 (2019)				

20	Safna Hussan K.P, **M. Shahin Thayyil,** S.K Deshpande, Jinitha T.V, Manoj K., K.L. Ngai, ' Molecular Dynamics and Translational-Rotational Coupling of an Ionically Conducting Glass-former: Amlodipine Besylate' **RSC Advances, 8,** 20630 (2018)		**5**		**Impact Factor 3.11**
21	Shabeeba P**.,** Thasneema K.K, **M. Shahin Thayyil**, M.P Pillai, Jemshihas A.P, 'Inorganic salt grafted ionic liquid gel electrolytes for efficient solid state supercapacitors' **Journal of Molecular Liquids 264**, 72-79 (2018), e-ISSN: 0167-7322		**7**		**Impact Factor 5.06**
22	Safna Hussan K.P, **M. Shahin Thayyil,** S.K Deshpande, Jinitha T.V, Manoj, K.L. Ngai, ' Molecular dynamics, physical and thermal stability of neat amorphous amlodipine besylate and in binary mixture,' **Eur. J. Pharm. Sci., 119**, 268 – 278 (2018), ISSN: 0928-0987. 2018		**10**		**Impact Factor 3.77**
23	Thasneema K.K, Shabeeba P, **M. Shahin Thayyil**, M. P. Pillai, Krishna Kumar N. S, Govindaraj G, VC Saheer and Nighilnath 'Dielectric relaxation and electrochemical studies on trihexyl tetradecyl phosphonium chloride [P14,6,6,6][Cl] ionic liquid' **Journal of Molecular Liquids 252**, 488 – 494 (2018)		**2**		**Impact Factor 5.06**
24	Shabeeba P**, M. Shahin Thayyil**, M.P Pillai, P.P Soufeena, Niveditha CV, 'Fabrication and Characterization of Activated Carbon Electrode for the Application of Supercapacitors', Russian Journal of Electrochemistry **53**, 1336 (**2018**), ISSN: 1023-1935		**12**		**Impact Factor 0.83**

25	Aboothahir Afzal, **M. Shahin Thayyil**, M. K. Sulaiman, A. R. Kulkarni, 'Dielectric relaxation studies in super-cooled liquid and glassy phases of anti-cancerous alkaloid: Brucine, **Indian Journal of Physics 2018**		**4**		**Impact Factor 0.98**
26	Thasneema KK, **M. Shahin Thayyil**, S Krishna Kumar N, G Govindaraj, 'Conductivity relaxation and charge transport of trihexyl tetradecyl phosphonium dicyanamide ionic liquid by broadband dielectric spectroscopy', **AIP Conference Series** 1942 (7), **2018**		**1**		
27	Safna Hussan K.P, **M. Shahin Thayyil**, Binesh M, S.K Deshpande, Vijisha K Rajan, 'Molecular dynamics in amorphous pharmaceutically important protic ionic liquid-benzalkonium chloride, **Journal of Molecular Liquids 251**, 487 – 491 (2018)		**9**		**Impact Factor 5.06**
28	Safna Hussan K.P, **M. Shahin Thayyil**, Vijisha K Rajan, K. Muraleedharan, 'Experimental and density functional theory studies on benzalkonium ibuprofenate, a double active pharmaceutical ingredient' **Computational Biology and Chemistry 119**, 268 – 278 (2018),		**9**		**Impact Factor 1.01**
29	Safna Hussan K.P, **M. Shahin Thayyil**, S.K Deshpande, 'Studies of ionogel structure and its electronic and optical characterization by ONIOM and other hybrid computational Approaches **Materials Today: Proceedings 5,** 16272-79(2018		**3**		
30	K.L. Ngai, **M. Shahin Thayyil**, Li-Min Wang, 'Quasielastic neutron scattering evidence of coupling of caged molecule dynamics to JG β-relaxation, **Journal of Molecular Liquids, 247**, 300-303 (2017), ISSN: 0167-7322		**4**		**Impact Factor 5.06**

31	Safna Hussan K.P, **M. Shahin Thayyil**, S.K Deshpande, Jinitha T.V, Jayant Kolte, 'Development of ion conducting ionic liquid-based gel polymer electrolyte membrane PMMA/BMPyr.TFSI - With improved electrical, optical, thermal and structural properties' **Solid State Ionics 310**, 166–175 (2017)		**19**		**Impact Factor 2.35**
32	Sailaja Urpayil, **M. Shahin Thayyil,** N. S. Krishna Kumar, G. Govindaraj, K.L. Ngai, 'Molecular mobility in the supercooled and glassy states of nizatidine and perphenazine,' **European Journal of Pharmaceutical Sciences**, **99**, 147-151 (2017), ISSN: 0928-0987.		**8**		**Impact Factor 3.76**
33	Shabeeba P, Thasneema K.K, **M. Shahin Thayyil**, M.P Pillai, Niveditha CV, 'A graphene-based flexible supercapacitor using trihexyl(tetradecyl)phosphonium bis(trifluoromethanesulfonyl)imide ionic liquid electrolyte, Materials Research Express', **Mater. Res. Exprs.** 4, 085501 (2017), ISSN: 2053-1591		**10**		**Impact Factor 1.07**
34	Shabeeba P, Thasneema K.K, **M. Shahin Thayyil**, M.P Pillai, Niveditha CV, 'A high voltage supercapacitor based on ionic liquid with activated carbon electrode, Materials Research Express', **Mater. Res. Exprs.** 4, 075503 (2017), ISSN: 2053-1591		**15**		**Impact Factor 1.07**
35	Shabeeba P., **M. Shahin Thayyil**, and M. P. Pillai, 'Synthesis and fabrication of porous activated carbon/nano ZnO composite electrode for supercapacitor', **AIP Conf. Proc.**1832, 050027 **(2017)**; DOI: 10.1063/1.4980260, e-ISSN: 1551-7616		**1**		

36	K. P. Safna Hussan, **M. Shahin Thayyil**, S.K. Deshpande, TV Jinitha, 'Photoluminescent behavior of propylene carbonate and poly (methylmethacrylate) blend for transparent optoelectronic devices' **AIP Conf. Proc.** 1849, 020012 **(2017)**; doi: 10.1063/1.4984159, e-ISSN: 1551-7616				
37	K.P. Safna Hussan, **M. Shahin Thayyil**, S.K. Deshpande, TV Jinitha, 'The entrapment of BaIb in PVP additives to form stable double active amorphous drugby hydrogen bonds' **AIP Conf. Proc.** 1832, 070011 **(2017)**; doi: 10.1063/1.4980446, e-ISSN: 1551-7616.		**7**		
38	K.P. Safna Hussan, **M. Shahin Thayyil**, S.K. Deshpande, TV Jinitha, VK Rajan, KL Ngai, 'Synthesis and molecular dynamics of double active pharmaceutical ingredient-benzalkonium ibuprofenate, **Journal of Molecular Liquids**, 223, 1333-1339 (2016), e-ISSN: 0167-7322.		**16**		(Impact Factor **5.06**)
39	Sailaja, U.; **M. Shahin Thayyil**; N. S. Krishna Kumar; et al., Molecular dynamics of amorphous pharmaceutical fenofibrate studied by broadband dielectric spectroscopy, Journal of Pharmaceutical Analysis (2014), ISSN: 2095-1779		**22**		(Impact Factor **2.67**)

23. Books published: with ISBN No., Without ISBN No., Chapters in books.

    With ISBN No.

    Theoretical and Spectroscopic Investigations on Ionogels: Safna Hussan K.P & **M. Shahin Thayyil**, Cambridge Scholars, UK (2019) ISBN: ISBN: 1-5275-3745-5 ISBN, 978-1-5275-3745-3

    Without ISBN No. NIL

24. Patents Applied/Granted: National. International, commercialized: **NIL**

25. Consultancy services provided and revenue generated: **NIL**

26. Conferences, seminars, symposia and workshops organized as convener/coordinator:

	Name of Conference/ Seminars / Workshops	Funding agency	No. of Participants	University/State/National/ International	Dates
1	**National Workshop on Computer Interfaced Science Experiments using ExpEYES** organized by the Department of Physics, University of Calicut in association with **CSpark Research, New Delhi**	KSCSTE, Govt. of Kerala, University of Calicut	**60**	**National**	**27 –** 29 **December 2019**
2	**Sastrajalakam Outreach Program for School Students**, held at the University of Calicut November 20 – 22, 2019 organized by the **University of Calicut** & funded by the State Institute of Educational Training (SIET), Govt. of Kerala.	(SIET), Govt. of Kerala, University of Calicut	60	**State**	November 20 – 22, 2019
3	**One-Day Workshop on Computer Interfaced Science Experiments & Developing Science Projects** organized by the Department of Physics, University of Calicut in association with **CSpark Research, New Delhi** on **23 October 2019**	KSCSTE, Govt. of Kerala, University of Calicut	**50**	**National**	**23 October 2019**

4	**Two Day Space Camp for School Students** organized by the Department of Physics, University of Calicut in association with **ULCCS foundation** on **20 & 21 July 2019**	University of Calicut	80	State	**20 & 21 July 2019**
5	**Three–Day Vacation Camp for School Students** 14 -16 May 2019 – organized by the Directorate of Kerala State Institute of Children's Literature, under the Ministry of Cultural Affairs, Government of Kerala at University of Calicut.	University of Calicut	50	State	14 -16 May 2019
6	**Five-Day National Workshop on Computer Interfaced Science Experiments** organized by the Department of Physics, University of Calicut 06 –10 May 2019, Venue: Aryabhatta Hall, University of Calicut	University of Calicut, KSCSTE, Govt. of Kerala.	60	National	06 –10 May 2019
7	**One Day Workshop on Science Experiments for School Students** organized by the Department of Physics, University of Calicut on **09 February 2019**	KSCSTE, Govt. of Kerala, University of Calicut	50	State	**09 February 2019**

8	**One Day Space Camp for School Students organized** by the Department of Physics, University of Calicut in association with **ULCCS foundation** on **26 January 2019**	KSCSTE, Govt. of Kerala, University of Calicut	50	State	**26 January 2019**
9	**One Day Workshop on Computer Interfacing and Developing Science Projects for School Students** organized by the Department of Physics, University of Calicut on **29th December 2018.**	KSCSTE, Govt. of Kerala, University of Calicut	50	State	**29th December 2018.**
10	**One Day Workshop on Computer Interfacing and Developing Science Projects for School Students** organized by the Department of Physics, University of Calicut on **28th December 2018.**	KSCSTE, Govt. of Kerala, University of Calicut	55	State	**28th December 2018**
11	**One Day Workshop on Computer Interfacing and Developing Science Projects for School Students** organized by the Department of Physics, University of Calicut on **27th December 2018.**	KSCSTE, Govt. of Kerala, University of Calicut	50	State	**27th December 2018**

12	**Sastrajalakam Outreach Program for School Students**, held at the University of Calicut November 26 – 28, 2018 organized by the University of Calicut & funded by the State Institute of Educational Training (SIET), Govt. of Kerala.	SIET, Govt. of Kerala, University of Calicut	110	State	26 – 28, 2018
13	**One Day Workshop on Electronic Experimentation** Organized by the Department of Physics, PSMO College in Association with the Department of Physics, University of Calicut and KSCSTE Govt. of Kerala on **8 November 2018.**	KSCSTE, Govt. of Kerala	60	State	**8 November 2018.**
14	**Special lecture on 'Magnetism'** by **Dr. Safeer Chenattukuzhiyil, Marie-Curie Fellow, CIC nanoGUNE, San Sebastian (Spain)** on Monday 29th October 2018 organized by the Department of Physics, University of Calicut	University of Calicut	80	State	29th October 2018

15	**Workshop & Hands on training on Arduino Programming** organized at the JDT Islam Polytechnic College jointly with the host institution and the Department of Physics, University of Calicut on 6th August 2018.	KSCSTE, Govt. of Kerala	60	State	6th August 2018
16	**Two Day Camp on Computer Interfaced Science Experiments** organized by the Department of Physics, University of Calicut 28-29 July 2018, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	28-29 July 2018
17	**Moon Day Celebrations & Two Day Residential Space Camp for School Students** organized by the Department of Physics, University of Calicut 21-22 July 2018, Venue: EMS Seminar Complex & Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	100	State	21-22 July 2018

18	**Two Day Science Workshop for doing Science Experiments for School Students** organized by the Department of Physics, University of Calicut 11-12, May 2018, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	11-12, May 2018
19	**Two Day Workshops for doing Science Experiments for School Students** organized by the Department of Physics, University of Calicut on 10-11 November May 2017, Venue: Aryabhatta Hall, University of Calicut	KSCSTE, Govt. of Kerala & University of Calicut	60	State	10-11 November May 2017
20	**One Day Science Workshop for doing Science Experiments for CBSE School Teachers** organized by the Department of Physics, University of Calicut in association with KITE, Govt. of Kerala on 08 November May 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	08 November May 2017

21	**Two Day Science Workshop for doing Science Experiments for Higher Secondary School Teachers** organized by the Department of Physics, University of Calicut in association with KITE, Govt. of Kerala on 06-07 November 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	06-07 November 2017
22	**One Day Workshop on ExpEyes Hardware and Doing Science Experiments** organized by the Department of Physics, University of Calicut on 15 July 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	60	State	15 July 2017
23	**One Day Workshop on Mathematica Software** organized by the Department of Physics, University of Calicut in association with **Wolfram Research USA** on 20 June 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	80	State	20 June 2017

24	**One Day Program for Demonstrating Electronic Devices** developed by **the Dept. of Physics for Farming, Irrigation and Small Scale Industries o**rganized by the Department of Physics, University of Calicut on 15 May 2017, Venue: Aryabhatta Hall, University of Calicut.	KSCSTE, Govt. of Kerala & University of Calicut	100	State	15 May 2017

27. Number of collaborations:

Research collaborations resulted in peer-reviewed international publications

1. **Prof. K. Muraleedharan**
Professor, Department of Chemistry, University of Calicut

2. **Dr. Pradeepan Periyat**
Asst. Professor, Department of Chemistry, University of Calicut

3. **Prof. K.K. Elyas**
Professor, Department of Bio-Technology, University of Calicut

4. **Dr. Sailaja Urpayil**, Department of Physics, MES Keveeyam College, Valanchery, Malappuram, Kerala, India

5. **Prof. G. Govindaraj**
Professor, Department of Physics
Pondicherry University – Puthuchery, India

6. **Prof. Arvind K. Bansal**
Professor
National Institute of Pharmaceuticals and Educational Research (NIPER) – Mohali, Punjab, India

7. **Dr. S. K. Deshpandey**
Scientist, UGC –DAE Centre for Research, BARC Campus, Mumbai, India

8. **P.A. Sivaramakrishnan**
Department of Physics, Govt. Arts and Science College, Kozhikode, Kerala, India

9. **Pramod K. Sahu**
School of Study in Chemistry, Jiwaji University, Madhya Pradesh, 474011, India

10. **Dr. Saharuba P.M**
Environmental Technology division, NIIST –CSIR, Trivandrum, Kerala, 695019, India

Foreign Research Collaborators

1. **Prof. Simone Capaccioli**
Professor, Dipartimento di Fisica, Università di Pisa, Italy

2. **Prof. K. L. Ngai**
Former Professor, Naval Research Laboratory, Washington D.C (U. S. A)
Visiting Professor, CNR IPCF & Dipartimento di Fisica, Università di Pisa, Italy

3. **Prof. Li-Min Wang**
State Key Lab of Metastable Materials Science and Technology
Yanshan University, Qinhuangdao, Hebei 066004, China

4. **Dr. Mouslim Messali**
Department of Chemistry, Faculty of Science, Taibah University, 30002, Saudi Arabia

5. **Dr. Taibi Ben Hadda**
Faculty of Sciences, University Mohammed Premier, Oujda, 60000, Morocco

6. **Dr. N.S. Krishna Kumar**
Department of Pharmaceutics, University of Minnesota, USA

28. Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

Dr. Mohamed Shahin Thayyil

Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Prof. (Dr.) A M Vinodkumar
2. Name of the Department: Physics
3. Educational qualifications: Ph.D Physics
4. Present position: Professor
5. Address for correspondence: Department of Physics, University of Calicut
6. E-mail and contact number: attukalathil@gmail.com, 9645078924
7. Specialization: Nuclear and Particle Physics
8. Total teaching experience: 11 years
9. Courses taught: Classical Mechanics, Advanced Nuclear Physics, Research Methodology
10. Research experience: 12 years
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

Sl.No.	Title of the project	Date of sanction and duration	Grant received	Funding agency	PI or Co-PI
1	R & D Efforts by Univ. Groups for INO	2013-19	35.0 Lakhs	DST	PI
2	IUAC-UGC Project	2018-2021	JRF+25,000/- Contingent grant/year	IUAC/UGC	PI

12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

    Nil

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.

Sl.No	Candidate	Supervisor	Title	Subject	Date of award
1	Jagdish Gehlot	A M Vinodkumar	Fusion-Fission studies of compound nuclei around	Physics	07.03.2020

			mass 215		

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

Sl.No	Candidate	Supervisor	Title	Subject	Date of Registration	Part time/ Full time	Nature of fellowship
1	Jisha P	A M Vinodkumar	Evaporation residue measurements of compound nucleus in A~ 200 region	Physics	16/01/2014	FT	
2	Abdul Irshad	A M Vinodkumar	Geant 4 stimulation studies to predict a suitable orientation for INO-ICAL Detector	Physics	17/05/2016	FT	
3	Sanila S	A M Vinodkumar	Evaporation residue measurements forming Th and Ra compound nuclei	Physics	01/06/2016	FT	
4	Arjun	A M Vinodkumar	Quasi particle models in	Physics	13.07.2017	FT	

			quark gluon plasma under magnetic field,.coulomb field and color field.			
5	Saneesh V	A M Vinodkumar	Role of neutron emission in the fission of actinide nuclei.	Physics	22.06.2018	PT
6	Jinu K V	A M Vinodkumar	Influence of neutron transfer with positive Q-values in fusion enhancement of 18O +90,92,94,96 Zr reactions	Physics	10-02-2021	FT

15. Provide information as indicated in 11 and 12 above.

16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

	Name	Title of the event	Organizer & venue	International/ National/ local	Period
1	A M Vinodkum	INO Project Collaboration	Homi Bhabh	Nationa l	Octob er 24-

	ar	meeting	a Centre for Scienc e 17. Educat ion, Mumbai		25, 2016
2	A M Vinodkumar	Thematic workshop on UNDERGROUND ACCELERATOR BASED NUCLEAR ASTROPHYSICS FACILITY organized by UGC-DAE Consortium for Scientific Research, Kolkata Centre, May 17 - 18 2017, UGC-DAE CSR, Kolkata Centre.	IUC-DAEF Kolkata	National	May 17 - 18 2017
3	A M Vinodkumar	Shodh Shiksha Sameeksha, IUCAA, Pune	UGC-MHRD	National	October 1, 2017
4	Dr. A M Vinodkumar	IUAC acquaintance programme an One day National Workshop on Accelerator Based Science Research	IUAC and CUK, Kasargod, CUK, Kasaragod	National	29 October 2018
5	Dr. A M Vinodkumar	Users Workshop, IUAC,New Delhi	IUAC, New Delhi	National	5-7 July 2018
6	Dr. A M Vinodkumar	International Conference on New Frontiers in Nuclear Physics (ICNFNP 2019) 2019	BHU,Varanasi	International	October 14-17, 2019
7	Dr. A M Vinodkumar	66th IUAC Accelerator Users Committee Workshop	UAC, New Delhi	National	July 5-8, 2019
8	Dr. A M Vinodkumar	67th IUAC Accelerator Users Committee Workshop	IUAC, New Delhi	National	Dec 16-20, 2019
9	Dr. A M Vinodkumar	68th IUAC Accelerator Users Committee Workshop	IUAC, New Delhi	National	July 5-7, 2020
10	Dr A M Vinodkumar	Comparison of fusion cross sections for 32S +182,184W reactions along with statistical model calculations- talk delivered in the	Nuclear Physics Division Bhabha Atomic Research	International	24-27 June 2020

		"Contemporary topics in nuclear physics" on 24th June 2020.	Centre, Mumbai		

18. Innovative processes developed in teaching and learning. Nil

19. Participation in curricular development:

S. N.	Name of the programme	Organizer and date	International/National/regional
1	Online orientation training programme for mentors from higher education Institutions/ Universities (UGC)	National Institute of Teachers Training and Research, Chennai ,1-10 Feb 2021	National
2	Online hands on training programme on Learning Management System-Moodle	University of Calicut 25 May- 9 June 2020	Regional

20. Participation in co-curricular and extra-curricular activities.

21. Refresher and Orientation courses attended:

22. Examination /Evaluation reforms initiated:

23. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Sr. No.	**Papers published in peer reviewed journals**	**Monographs, Books, Chapters in books**	**Citations**	***h*-index**	**Impact factor range/Average Impact factor**

1	Fusion and quasifission studies in reactions forming Rn via evaporation residue measurements - A. Shamlath, E. Prasad, N. Madhavan, P. V. Laveen, J. Gehlot, A. K. Nasirov, G. Giardina, G. Mandaglio, S. Nath, Tathagata Banerjee, **A. M. Vinodkumar,**M. Shareef, A. Jhingan, T. Varughese, DVGRKS Kumar, P. Sandya Devi, Khushboo, P. Jisha, Neeraj Kumar, M. M. Hosamani, and S. Kailas, Phy. Rev. **C 95**(2017)034610.		8		**3.146**
2	Invited review: Physics potential of the ICAL detector at the India-based Neutrino Observatory (INO) - A Kumar, **A M Vinodkumar** et al., Pramana – J. Phys. (2017) 88:79.		105		1.185
3	Hazard indices and annual effective dose due to terrestrial radioactivity in Northern Kerala, India. Reshma, C D Ravikumar, **A M Vinodkumar,** I Vijyalakshmi, B Dhanalakshmi, N Chitra, S. Bala Sundar, M T Jose, B Venkatramanan, Journal of Radioanalytical Chemistry 314(2017)2171.		2		0.983
4	Sub-barrier fusion of 11Li with 208Pb - W. Loveland, **A. M. Vinodkumar**, Ricardo Yanez, Larry Yao, Jonathan King, Jens Lassen, and Alex Rojas, European Physical Journal A - Hadrons Nuclei, 54(2018)140.		0		2.481
5	Nuclear dissipation at high excitation energy and angular momenta in reaction forming 227Np - M. Shareef, E. Prasad, A. Jhingan, N. Saneesh, K. S. Golda,**A. M. Vinodkumar**, Mohit Kumar, A. Shamlath, P. V. Laveen, A. C. Visakh, M. M. Hosamani, S. K. Duggi, P. Sandya Devi, G. N. Jyothi, A. Tejaswi, P. N. Patil, Jhilam Sadhukhan, P. Sugathan, A. Chatterjee, and Santanu Pal, Phy. Rev. **C 99**(2019)024618.		2		3.146

6	Evaporation residue cross-section measurements for 16O + 203,205Tl - J. Gehlot, **A. M. Vinodkumar**, N. Madhavan, S. Nath, A. Jhingan, T. Varughese, Tathagata Banerjee, A. Shamlath, P. V. Laveen, M. Shareef, P. Jisha, P. Sandya Devi, G. Naga Jyothi, M. M. Hosamani, I. Mazumdar, V. I. Chepigin, M. L. Chelnokov, A. V. Yeremin, A. K. Sinha, and B. R. S. Babu, Phy. Rev. **C 99**(2019)034615.		1		3.146
7	Evaporation residue measurements for compound nuclei in the A = 200 region -P. Jisha, **A. M. Vinodkumar**, B. R. S. Babu, S. Nath, N. Madhavan, J. Gehlot, A. Jhingan, T. Banerjee, Ish Mukul, R. Dubey, N. Saneesh, K. M. Varier, E. Prasad, A. Shamlath, P. V. Laveen, and M. Shareef, Phys. Rev. C 101(2020)02461.		0		3.146
8	Systematics of multinucleon transfer in heavy ion reactions - S. Sanila, **A. M. Vinodkumar** and B. R. S. Babu, Pramana-Journal of Physics, 94(2020)70 .		0		1.185
9	Fusion studies in 35,37Cl + 181Ta reactions via evaporation residue cross section measurements - P. V. Laveen, E. Prasad, N. Madhavan, A. K. Nasirov, J. Gehlot, S. Nath, G. Mandaglio, G. Giardina, **A. M. Vinodkumar**, M. Shareef, A. Shamlath, S. K. Duggi, P. Sandya Devi, Tathagata Banerjee, M. M. Hosamani, Khushboo, P. Jisha, Neeraj Kumar, Priya Sharma, and T. Varughese, Phys. Rev. C 102(2020)034613.				3.146

24. Books published: with ISBN No., Without ISBN No., Chapters in books.

25. Patents Applied/Granted: National. International, commercialized:

26. Consultancy services provided and revenue generated:

27. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

Sl.No	Title of the event	Co-ordinator	Organizer/sponsor & venue	International/ National/ local	Duration
1	A series of webinars - as part of Golden jubilee celebrations of the department.	Dr A M Vinodkumar	Department of Physics	International	September 7-9, 2020

2	*SCHOOL ON PHYSICS AND INSTRUMENTATION OF NuSTAR-FAIR (SPIN-2016)*	*A M Vinodkumar*	*Sponsored by* *Bose Institute Indo-FAIR Co-ordination Centre (BI-IFCC), Kolkata* *Department of Physics*	International	15-11-2016 to 19-11-2016

28. Number of collaborations: (1) Oregon State University, USA (2) IUAC, New Delhi (3) Delhi University (4) Panjab University (5) Central University of Kerala

29. Awards /recognitions received: International, National, State, University level.

(1) **Nominated as member of Accelerators Users Committee, IUAC, New Delhi (2018 onwards)**

(2) Editorial board member,International Journal of Physics and Mathematical Sciences (JPMS)

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty : Dr. Ravikumar C.D.
2. Name of the Department : Physics
3. Educational qualifications : MSc(Physics), Ph. D (Physics)
4. Present position : Associate Professor
5. Address for correspondence : Gourisankaram, Thenhipalam, Malappuram, 673636
6. E-mail and contact number : cdravi@gmail.com +91 94471 92136
7. Specialization : Physics, Astrophysics
8. Total teaching experience : 15 Years
9. Courses taught : Mathematical Physics I & II, Elementary Astrophysics
10. Research experience : 17 years
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.
13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.
14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.
15. Provide information as indicated in 11 and 12 above.
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.
17. Innovative processes developed in teaching and learning.
18. Participation in curricular development:
19. Participation in co-curricular and extra-curricular activities.
20. Refresher and Orientation courses attended:
21. Examination /Evaluation reforms initiated:

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

    1. **'Heavy Quarkonium Properties at Finite Temperature in Strongly Coupled Quark Gluon Plasma',** Rethika, K.T., Ravikumar, C.D., Bannur, V.M. Few-Body Systems, 2021, 62(1), 10, IF: 0.823 (2019)

    2. "Study of central intensity ratio of early-type galaxies from low-density environment', Sruthi, K. & Ravikumar, C. D., 2021, Monthly Notices of the Royal Astronomical Society. Volume 500, 1343–1349 (2021), doi:10.1093/mnras/staa3334 **IF**: 5.356 (2019)

    3. **'Co-evolution of nuclear rings, bars and the central intensity ratio of their host galaxies,** Research in Astronomy and Astrophysics', Aswathy, S. &**Ravikumar, C. D.**, 2020, Volume 20, Issue 2, id.015. DOI: **10.1088/1674-4527/20/2/15**

    4. **'Search for anomalous alignments of structures in Planck data using Minkowski Tensors',** Joby, P. K.; Chingangbam, P; Ghosh, T; Ganesan, V; **Ravikumar, C. D**., 2019, Journal of Cosmology and Astroparticle Physics, Issue 01, article id. 009 (2019). doi: 10.1088/1475-7516/2019/01/009

    5. **'Establishing the spectral turnover of blazar PKS 2155-304 as an outcome of radiative losses'**, Sitha K. Jagan, S. Sahayanathan, R. Misra, **Ravikumar, C. D.**& K. Jeena, 2018, Monthly Notices of the Royal Astronomical Society: Letters, 478, L105–L109 doi: 10.1093/mnrasl/sly086

    6. **'Study of central light concentration in nearby galaxies'**, Aswathy, S. &**Ravikumar, C. D.**, 2018, Monthly Notices of the Royal Astronomical Society, 477, 2399–2405

    7. **'Inhalation Dose and Source Term Studies in a Tribal Area of Wayanad, Kerala, India'**, Reshma Bhaskaran, **Ravikumar C. D**, Visnuprasad Ashok Kumar, Jojo Panakal John, Danalakshmi Bangaru, Chitra Natarajan, Bala Sundar Sathiamurthy, Jose Mundiyanikal Thomas, & Rosaline Mishra, Journal of Environmental and Public Health, 2017, Volume 2017, Article ID 1930787, 10 pages, doi:10.1155/2017/1930787

    8. **'Hazard indices and annual effective dose due to terrestrial radioactivity in Northern Kerala, India',** Reshma Bhaskaran, **C. D. Ravikumar**, A. M. Vinodkumar, I. Vijayalakshmi, B. Danalakshmi, N. Chitra, S. Bala Sundar, M. T. Jose & B. Venkatraman, , Journal of Radioanalytical and Nuclear Chemistry, 2017, 314(3), 2171-2179, doi: 10.1007/s10967-017-5583-5

    9. **'SN 2015bp: adding to the growing population of transitional Type Ia supernovae',** Srivastav, Shubham; Anupama, G. C.; Sahu, D. K.; Ravikumar, C.D., Monthly Notices of Royal Astronomical Society (MNRAS), 2017, 466, 2436-2449.

23. Books published: with ISBN No., Without ISBN No., Chapters in books.

24. Patents Applied/Granted: National. International, commercialized:

25. Consultancy services provided and revenue generated:

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

1. July 18-19, 2016, Seminar “Research in Astronomy: Opportunities and Challenges III- IRC two day regional annual conference of astronomers", Sponsored by IUCAA.

2. November 27, 2017 Colloquium by Dr. A Gopakumar, TIFR “Au-some cosmic explosion and its implication for 21 st century Astronomy”.

3. April 27-28, 2019, Astronomy Congress-2019, ICARD and KSSP.

4. November 25, 2019.Prof. (Dr.) Bala Iyer, Simons Visiting Professor, International Centre for Theoretical Studies -Tata Institute of Fundamental Research, Bangalore is visiting the department for conducting a public lecture “Faint Strains of the Gravitational Wave Symphony and the Dawn of Multi-messenger Astronomy”.

5. December 20-21, 2019. Seminar “Tools and Techniques for Watching and Recording the Sky”, UoC

6. November 27-29, 2020. National Seminar on Observations and Research in Astronomy and Astrophysics, funded by IUCAA (ICARD), UoC

27. Number of collaborations:

28. Awards /recognitions received: International, National, State, University level.

1. Visiting Associate of IUCAA from 2015-18, and 2018-21

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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Format for preparing the faculty profile:

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Dr. Zuhail K. P.
2. Name of the Department: Physics
3. Educational qualifications: PhD. Physics
4. Present position: Assistant Professor
5. Address for correspondence: Kottoli Poyil (Ho), Morikkara (Po), Kakkodi (Vi), Calicut - 673611
6. E-mail and contact number: zuhail@uoc.ac.in, 8714313267
7. Specialization: Soft condensed matter physics
8. Total teaching experience: 2.5 years as Assistant Professor (on contract), 3 months as Assistant Professor, Department of Physics, University of Calicut
9. Courses taught: Electrodynamics, Quantum Mechanics
10. Research experience: 1 year as Post-doctoral fellow at Jozef Stefan Institute, Ljubljana, Slovenia
11. Major research projects completed: NIL
12. Minor research projects completed: NIL
13. Number of students awarded Ph.D. degree: NIL
14. Number of students registered for Ph.D. degree: NIL
15. Provide information as indicated in 11 and 12 above.
16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person: Enclosure III
17. Innovative processes developed in teaching and learning: NIL
18. Participation in curricular development: NIL
19. Participation in co-curricular and extra-curricular activities: NIL
20. Refresher and Orientation courses attended: NIL
21. Examination /Evaluation reforms initiated: NIL
22. Publication of research papers in peer reviewed journals non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS: Enclosure IV

23. Books published: with ISBN No., Without ISBN No., Chapters in books.: NIL
24. Patents Applied/Granted: National. International, commercialized: NIL
25. Consultancy services provided and revenue generated: NIL
26. Conferences ,seminars, symposia and workshops organized as convener/coordinator: NIL
27. Number of collaborations: 2
28. Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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Enclosure IV

List of publications: In peer reviewed journals

Sl No	Title	Authors	Journal Name	Volume, number and year	Impact factor	Citations	H-index	Number in SCOPUS
1	Effect of phase transitions on liquid crystal colloids: A short review.	Zuhail K. P., Matjaz Humar and Surajit Dhara	Liquid Crystals Reviews	8, 1 (2020)	3.92	0	13	34/403
2	N-SmA-Smc phase transitions probed by a pair of elastically bound colloids	Muhammed Rasi M., Zuhail K.P., Arun Roy and Surajit Dhara	Physical Review E	97, 032702 (2018)	2.29	7	76	22/227
3	Effect of temperature and electric field on 2D nematic colloidal crystals stablised by vortex-like topological defects	K. P. Zuhail and Surajit Dhara.	Soft Matter	12, 6812 (2016)	3.33	8	143	66/403
4	Dynamics of electro-orientation of birefringent microsheets in isotropic and nematic liquid crystals	M. V. Rasna, K. P. Zuhail, U. Ramudu, R. Chandrasekar and Surajit Dhara.	Physical Review E	94, 032701 (2016).	2.29	5	76	22/227

Dr Libu K. Alexander

Assistant Professor, Dept of Physics

Based on information for last five years (from 2016-17 to 2020-21).

1. Name of the faculty: Dr Libu K. Alexander
2. Name of the Department: Dept of Physics
3. Educational qualifications: MSc Physics, PhD
4. Present position: Assistant Professor
5. Address for correspondence: Dept of Physics, University of Calicut
6. E-mail and contact number: LKA@uoc.ac.in; 9446376861
7. Specialization: Physics- Material Science
8. Total teaching experience: 10 years
9. Courses taught (2016-2021):
    - Solid State Physics,
    - Statistical Mechanics,
    - Spectroscopy,
    - Experimental Techniques
    - General Physics Lab1
    - General Physics Lab2
    - Research Methodology
    - Advances in Nanomaterials-1
10. Research experience:

PhD	**Indian Institute of Technology Bombay** (IIT-B)	PhD Awarded in 2007
PDF	University of Paris-sud. France.	June/ 2007 to July/2008
PDF	University of New South Wales- Centre for Quantum Computer Technology, Australia. , Australia	August 2008 to Jan 2010
Asst Professor, University of Calicut	• Three PhD students awarded PhD; • currently Four students doing PhD in my guidance; • Guided seven MPhil thesis	Till date

11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

Sl No	Title of the project	Date of sanction and Duration	Grant received	Funding Agency	PI
1	Characterization studies and tuning magnetic properties of Graphene nanocomposites	2 years 2013 -2015	Rs 6 Lakhs	UGC	Libu K Alexander
2	Study and Development of Graphene based Composites and Magnetically Recoverable Composites for Water Purification by Photocatalysis	4 years 2016-2020	Rs 31 Lakhs	KSCSTE	Libu K. Alexander

12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

    Nil

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.

Sl No	Name	Topic	Date of Regn	Date of award
1	Ahamed Raseen Nanakkal	Design and Studies on Graphene – Metal Oxide Nanocomposites for Photocatalysis	1.11.2012	27.06.2018
2	Vidyarajan N	Studies on Graphene-Perovskite $LaFeO_3$ interface	1.11.2012	2.08.2019
3	Bintu Thomas	Surface Modified Magnetic Nanoparticles for Photocatalytic Applications	19.8.2014	16.03.2020

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

Sl No	Name	Topic	Date of Regn

1	Anju K	Polymer based nanocomposites for advanced chemical sensors	1.6.2016
2	Sravandas P	Studies on transition metal oxides and their nanocomposites with 2D allotropes for photocatalysis	7.5.2018
3	Reeja Gopalakrishnan	Photocatalytic applications of semiconducting nanoparticles	28.10.2019
4	Aruna Unnikrishanan	Tuning the functionality of graphene	26.11.2019

15. Provide information as indicated in 11 and 12 above.

16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

    Resource Person, UGC HRDC Refresher Course, Kannur University, Topic: Graphene, Date 18/3/2017

    Resource Person, UGC HRDC Refresher Course, Kannur University, Topic: Graphene, Date 17/7/2017

    Resource Person, National Seminar, Govt College Perinthalmanna, Topic: Functionalised Graphene, Date 23/11/2017

17. Innovative processes developed in teaching and learning.

    - Used ICT methods for delivery of lectures
    - Used Moodle Learning Management System to facilitate better teaching- learning practices.

18. Participation in curricular development:

    - Member, PG Board of Studies-Physics 2017-20
    - Member, Board of Studies-Radiation Physics 2020-till date
    - Development of the syllabus for Statistical Mechanics CCSS, -2017.

19. Participation in co-curricular and extra-curricular activities.

    Director, Centre for International Academic Relations, University of Calicut.

    University Co-ordinator, MHRD- GIAN program

20. Refresher and Orientation courses attended:

    Refresher course at University of Pune from 12/12/2016 to 23/12/2016 organised by National University of Educational Planning and Administration (NEIPA) New Delhi

"ICT enabled Curriculum and Pedagogy at Higher Education" conducted by MHRD-TLC (PMMMNMTT), University of Calicut from 6.11.2019 to 12.11.2019.

21. Examination /Evaluation reforms initiated:

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Sr. No.	Papers published in peer reviewed journals	Citations	Impact factor
1	AR Nanakkal, LK Alexander, Journal of Chemical Sciences 2017, 129 (1), 95-102	19	1.406
2.	AR Nanakkal, LK Alexander, AIP Conference Proceedings 2017, 1832 (1), 050058	-	-
3	N Vidya Rajan, LK Alexander AIP Conference Series 2017, 1849 (2)	3	-
4.	AR Nanakkal, LK Alexander Journal of Materials Science 2017, 52 (13), 7997-8006	45	3.553
5.	Bintu Thomas, LK Alexander Applied Nanoscience 2018, 8 (1-2), 125-135	17	2.880
6.	N Vidyarajan, LK Alexander Materials Research Express 2018, 6 (1), 015610	5	1.929
7.	Bintu Thomas, LK Alexander Journal of Alloys and Compounds, 2019, 788, 257-266	6	4.650
8	Bintu Thomas, LK Alexander AIP Conference Proceedings 2019, 2162 (1), 020063	-	-
9	Bintu Thomas, LK Alexander Journal of Solid State Chemistry,2020, 288, 121417	4	2.726
10	Bintu Thomas, LK Alexander AIP Conference Proceedings 2287, 020003 (2020)	-	-
11	P. Sravandas, L.K. Alexander, Materials Today: Proceedings,2021, https://doi.org/10.1016/j.matpr.2020.11.373	-	-
12	K. Anju, K. Roopitha, L.K. Alexander, Materials Today: Proceedings,2021, https://doi.org/10.1016/j.matpr.2021.01.843	-	-

23. Books published: with ISBN No., Without ISBN No., Chapters in books.

Bintu Thomas, L.K. Alexander, Advanced Materials Processing and Characterisation/ Photocatalytic Reduction of Cr(VI) over super- paramagnetic $Zn_{0.9}Co_{0.1}Fe_2O_4$ ferrite under visible light irradiation. ISBN: 978-93-86724-04-5

24. Patents Applied/Granted: National. International, commercialized:

25. Consultancy services provided and revenue generated:

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

    National Conference: Science and Technology of New materials for Sustainable Future" (STNM 2018), Feb 7-9, 2018, University of Calicut.

27. Number of collaborations:

28. Awards /recognitions received: International, National, State, University level.

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13,14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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Faculty profile: Prof. P. P. Pradyumnan

(Provide the information for last five years from 2016-17 to 2020-21)

1. Name of the faculty: Prof. Dr. P. P. Pradyumnan
2. Name of the Department: Department of Physics
3. Educational qualifications: M.Sc, Ph. D, UGC-JRF, CSIR-JRF
4. Present position: Professor
5. Address for correspondence: Professor, Department of Physics, University of Calicut
   Calicut University P O, Kerala 673635
6. E-mail and contact number: ppp@uoc.ac.in, drpradyumnan@gmail.com, Mob: 9895961751
7. Specialization: Condensed matter Physics, Materials Science, Nanotechnology, Magnetism
8. Total teaching experience: 25 Years
9. Courses taught: M.Sc: Solid State Physics, Experimental Technique, Spectroscopy, Electronics, Advanced Materials Science, Quantum Mechanics, Modern Physics Lab Experiments, Electronics Lab Experiments
10. Research experience: 28 Years in Condensed matter Physics
11. Major research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.

Sl No	Title of the Project	Date of sanction	Duration	Grant received Lakhs	Funding agency	PI/Co- PI
1	Studies on Oxide materials for Thermoelectric generation	05-07-2013	4 Years	54.2	SERB, Govt of India	PI
2	Studies on multicomponent transparent conducting oxide thinfilms for device applications	12-12-2013	3 Years	15.96	KSCSTE, Govt of Kerala	Mentor

3	Thermoelectric Properties of Dysprosium Incorporated ZnO Materials	7-4-2016 16-10-2019	3 years	8.58	KSCSTE, Govt of Kerala	Supervisor

12. Minor research projects completed: Title of the project, Date of sanction and Duration, Grant received, Funding agency. PI or Co-PI.: Nil

13. Number of students awarded Ph.D. degree: Name of the student, topic of research, date of registration, date of declaration of Ph.D. degree.

Sl No	Name of the students	Topic of research	Date of registration	Date of decleration of Ph.D
1	Jaya T P	Optical, electrical and morphological studies of conducting ion doped metal oxide thin films	2012	09-01-2018
2	Divya N K	Optical, dielectric and photocatalytic studies of rare earth doped ZnO systems	2012	08-02-2018
3	Jumanath E C	Growth and physical property studies of some biologically important crystals	2014	19-02-2020
4	Anju Paulson	Thermoelectric Properties of Dysprosium Incorporated ZnO Materials	2016	18-06-2020
5	Muhammed Shabeer N A	Thermoelectric properties of nitride and oxide thin films for device application	2014	19-02-2021

14. Number of students registered for Ph.D. degree: Name of the student, topic of research, date of registration.

Sl. No	Candidate	Topic of research	Subject	Date of Registration
1	Shyni P	Thermoelectric property studies of some alloys,nanocomposites,Quasi crystals and Thin films	Physics	23-3-2013
2	Soumya C	Synthesis and thermoelectric property studies of some metal oxides	Physics	19-08-2014
3	Vineetha V S	Metal organic inorganic hybrid crystals- Growth and physical property studies	Physics	26-12-2015
4	Nabeela K V	Studies on preparation and physical properties of some metal oxides, composites and alloys.	Physics	13-11-2017
5	Midhun Shah	Studies on preparation and physical properties of semi metals, organic materials, chalcogenides, clathrates and Quasi crystals	Physics	29-1-2018
6	Parvathy T	Thermoelectric properties of inorganic compounds, metal nitrides and hybrids	Physics	26-11-2019
7	Hashir P	Magnetothermoelectric properties of crystals, thin films and nanocomposites	Physics	5-02-2020

15. Provide information as indicated in 11 and 12 above.

Sr. No.	Name of the Principle Investigator (Co-investigator)	Title of the Project	Funding Agency, Duration & date of sanction	Amount (in Lakh)	Remarks if any

1	Dr. P.P.Pradyumnan	Studies on Oxide Materials for Thermoelectric generation, DST-SERB, Govt of India	2013-17 DST-SERB, Govt. of India	54.2	Completed
2	Dr. P.P.Pradyumnan	Studies on Multicomponent Transparent Conducting oxide Thinfilms for Device Application (Scientist Mentor),	2014-17 KSCSTE, Govt of Kerala, India	15.96	Completed
3	Dr. P.P.Pradyumnan	Thermoelectric Properties of Dysprosium Incorporated ZnO Materials	2016-19 KSCSTE, Govt of Kerala, India	8.58	Completed

16. Participation in conferences, symposia, seminars and workshops: International, national, state or university level, attended. Presented paper, chaired session. Resource person.

Sl No	**Faculty**	**Topic Invited/Chaired**	**Conference**	**National/ International**	**Date**
1	Dr P.P.Pradyumnan	Nonconventional energy (Invited)	UGC – Human Resource Development CentreKannur University,	National	21-10-2020
2	Dr P.P.Pradyumnan	Invited Talk:'Thermoelectric Materials: Source of green electricity' National conference on Materials science and nanotechnology	M E S College, Ponnani, Malappuram, Kerala 679586.	National	18-20 March 2019,
3	Dr P.P.Pradyumnan	Invited Talk:'Thermoelectrics: Key for Power	Mahatma Gandhi College,	National	15-16 March

		generation' National Seminar on Interdisciplinary Approaches in Materials and Biological research (IAMBR-2019)	Thiruvananthapuram 695004.		2019
4	Dr P.P.Pradyumnan	Invited Talk:'Thermoelectric Materials: Source of green electricity' National conference on Materials science and nanotechnology	M E S College, Ponnani, Malappuram, Kerala 679586.	National	18-20 March 2019,
5	Dr P.P.Pradyumnan	Invited Talk:'Thermoelectrics: Key for Power generation' National Seminar on Interdisciplinary Approaches in Materials and Biological research (IAMBR-2019)	Mahatma Gandhi College, Thiruvananthapuram 695004.	National	15-16 March 2019
6	P.P. Pradyumnan	Invited talk: National Seminar on Thin Film Technology and Application	School of Pure & Applied Physics, Mahatma Gandhi University, Kottayam,	National Resource person	15-17 February, 2018
7	P P Pradyumnan,	Invited talk and chaired a session: Oxide thermoelectrics: A key for power generation International Conferences on Advances in Functional Materials (ICAFM2017)	Anna University, Chennai.	International	6-8 January 2017
8	P P Pradyumnan	Invited talk and	International Inter	International	10-12

		Chaired a session : International Conference on Nano Materials (ICNM2017)	University Centre for Nano Science and Nano Technology (IIUCNN), Mahatma Gandhi University, Kottayam, India		Feb 2017

17. Innovative processes developed in teaching and learning.

18. Participation in curricular development:

    1. Chairman, Board of studies, Radiation Physics

    2. Member,Academic Council (2017-19)

19. Participation in co-curricular and extra-curricular activities.

    1. Member of Senate, University of Calicut

    2. Member, CCSS, University of Calicut

    3. Member, Planning Board, University of Calicut

20. Refresher and Orientation courses attended: Nil

21. Examination /Evaluation reforms initiated: Chairman, M. Phil Examinations

22. Publication of research papers: in peer reviewed journals, non-peer reviewed journals, conference proceedings, impact factors, citations, h-index. Numbers in SCOPUS.

Sr. No.	**Papers published in peer reviewed journals**	**Monographs, Books, Chapters in books**	**Citations**	H-index	**Impact factor range/Average Impact factor**
1	Meril Shelly , Meril Mathew , P.P. Pradyumnan , Tania Francis , Dielectric and thermal stability studies on high density polyethylene –Chitosan composites plasticized with palm oil, Materials today proceedings, 2021 https://doi.org/10.1016/j.matpr.2021.02.479		1		0.9

2	P Shyni and P P Pradyumnan, Fermi level tuning in modified Bi 2 Te 3 system for thermoelectric applications, RSC Advances, RSC Adv., 2021, 11, 4539 (doi: DOI: 10.1039/d0ra09278a)		3		3.07
3	P Shyni and P P Pradyumnan 'Time-Dependent Morphological Evolution of Bi2Te3 Nanotubes: A Potential Material for Thermoelectric Applications', **ECS Journal of Solid State Science and Technology**, **Volume 9**, **Number 10**, 11 November 2020, doi: **https://dx.doi.org/10.1149/2162-8777/abc6ee**		1		2.14
4	**K. V. Nabeela** and **P. P. Pradyumnan**, **'Mesopore ffects on thermoelectric properties of CuO nanoparticles**', **AIP Conference Proceedings**2265, 030466 (2020); **https://doi.org/10.1063/5.0016981**		3		
5	P Shyni, P P Pradyumnan, P Rajasekhar, Aswathi M Narayanan, Arun M Umarji, 'Graphitic carbon nitride-bismuth antimony telluride nanocomposites: A potential material for thermoelectric applications',Journal of Alloys and Compounds 853 (2021) 156872		5		4.65
6	Anju Paulson, N.A. Muhammed Sabeer, P.P. Pradyumnan, ' Enhancement of optical and thermoelectric properties in dysprosium doped ZnO thin films as an impact of non-parabolic band structure', Materials Science & Engineering B 262 (2020) 114745				4.7

7	N A Muhammad Sabeer, Anju Paulson and **P P Pradyumnan, '**Band modification of tin nitride thin films for green energy generation'Journal of Physics and Chemistry of Solids 138 (2020) 109294,https://doi.org/10.1016/j.jpcs.2019.109294				2.752
8	Jumanath, E.C., **Pradyumnan, P.P.** Thermal degradation and spectroscopic studies of single-crystalline organometallic calcium adipate monohydrate. *J Therm Anal Calorim* 140**,** 567–575 (2020). https://doi.org/10.1007/s10973-019-08916-z				2.471
9	E.C. Jumanath, **P P Pradyumnan,** 'Biomimetic growth, dielectric and magnetic features of copper ascorbate dihydrate crystals' Journal of Solid State Chemistry 277 (2019) 538–547https://doi.org/10.1016/j.jssc.2019.07.001				2.291
10	E.C. Jumanath, **P P Pradyumnan, '**Growth and structural studies of hybrid single crystal of cadmium citrate hexahydrate', Journal of Molecular Structure 1193 (2019) 231-238https://doi.org/10.1016/j.molstruc.2019.04.129		2		2.011
11	Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan,'**A synergetic approach of band gap engineering and reduced lattice thermal conductivity for the enhanced thermoelectric property in Dy ion doped ZnO' Journal of alloys and compounds 786 (2019) 581-58 doi.org/10.1016/j.jallcom.2019.01.336		6		4.7
12	E.C. Jumanath, **P P Pradyumnan,** 'Growth, Characterization and Dielectric Proprty Studies of Zinc Adipate Dihydrate Crystals'AIP Conference Proceedings **2082**, 070003(2019) https://doi.org/10.1063/1.5093878				
13	N A Muhammad Sabeer, Anju Paulson and **P P Pradyumnan**, 'Doubling the thermoelectric power factor of rare earth abundant tin nitride thin films through tuned (311) orientation by magnetron sputtering' Journal of Applied Physics 124, 185107 (2018)https://doi.org/10.1063/1.5049535		2		2.328
14	Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan**, 'Enhanced thermoelectric property of oxygen deficient nickel doped SnO_2 for high temperature application', **Mater. Res. Express 5 045511 2018 https://doi.org/10.1088/2053-1591/aabd64**		4		1.449

15	P Maneesha, Anju Paulson N A Muhammad Sabeer and **P P Pradyumnan**,' Thermoelectric measurement of nanocrystalline cobalt doped copper sulphide for energy generation, Materials Letters 225(2018) 57-61 https://doi.org/10.1016/j.matlet.2018.04.075		4		3.019
16	Muhammed Sabeer N. A., Anju Paulson, and **P. P. Pradyumnan**, 'An experimental approach of decoupling Seebeck coefficient and electrical resistivity'AIP Conference Proceedings 1942, 110054 (2018); doi: 10.1063/1.5029037				
17	**P. P. Pradyumnan,** Anju Paulson, Muhammed Sabeer N. A,**'C**obalt doped SnO 2 : A New Material for thermoelectric application', Advanced Materials Proceedings 2018, 3(1), 08-12 DOI: 10.5185/amp.2018/660				
18	N.K.Divya and **P P Pradyumnan, 'Photoluminescence quenching and photocatalytic enhancement of Pr-doped ZnO nanocrystals' Bll.Mater.Sci https://doi.org/10.1007/s12034-017-1507-9,**		13		1.264
19	T.P. Jaya and **P.P.Pradyumnan**, 'Plasma vapor deposited n-indium tin oxide heterojunctions for optoelectronic device applications', Japanese Journal of Applied Physics 56, 125502 (2017) https://doi.org/10.7567/JJAP.56.125502				1.471
20	E.C. Jumanath, P P Pradyumnan, 'Structural, spectroscopic and thermal property studies of cobalt adipate tetrahydrate single crystals, Journal of Crystal Growth 479(2017) 83 https://doi.org/10.1016/j.jcrysgro.2017.09.025		5		1.573
21	M P Binitha and **P P Pradyumnan,** 'Structural and magnetic studies on copper succinate dihydrate single crystals' Bull.Mater.Sci. Vol.40, No 5 September 2017 pp 1007-1011 DOI 10.1007/s12034-017-1459-0				1.264
22	**P. P. Pradyumnan,** Anju Paulson, Muhammed Sabeer N. A., and Deepthy N.Enhanced power factor in Ho doped ZnO: A new material for TE application AIP Conference Proceedings 1832, 110055 (2017); http://dx.doi.org/10.1063/1.4980679		4		
23	Jaya T Pilakavil andP P Pradyumnan, 'High transmittance hetero junctions based on n-ITO/p-CuO bilayer thin films., Mater. Res. Express 3 (2016)126401, doi: 10.1088/2053-1591/3/126401		4		1.93

24	N.K.Divya and P P Pradyumnan,'Enhancement of photocatalytic activity in Nd doped ZnO with increase in dielectric constant', **Journal of Materials Science: Materials in Electronics (ISSN 0957-4522) (2016)**		11	2.2	
25	Jaya T Pilakavil and P P Pradyumnan, 'Micro structural and dielectric property analysis on hydrothermally grown gadolinium doped SnO2 crystals., Mater. Res. Express 3 (2016) 095905, doi: 10.1088/2053-1591/3/9/095905		3	1.93	
26	P P Pradyumnan, 'Superparamagnetism in FeCo nanoparticles", NANOSYSTEMS: PHYSICS, CHEMISTRY, MATHEMATICS, 2016, 7 (4), P. 675–677, DOI 10.17586/2220-8054-2016-7-4-675-677		3		
27	P Jayaram, P P Pradyumnan, S.Zh Karazhanov, ' Micro-strain, dislocation density and surface chemical state analysis of multication thinfilms, Physica B 2016, **http://dx.doi.org/10.1016/j.physb.2016.08.018**.		5		
28	M P Binitha and P P Pradyumnan,'Spectroscopic, thermal and dielectric studies of copper maleate monohydrate single crystals' Indian Journal of Pure and Applied Physics, Vol.54, July 2016, pp. 453-457		6		

29	Jayakrishnan P, P P Pradyumnan and M. T Ramesan, 'Thermal and Electrical Properties of Polyindole/ Magnetite Nanocomposites', The Chemist, Journala of the American Institute of Chemists, Volume 89 Number 1 The Chemist pg 27 2016.		7	1.3	
30	N.K.Divya and P P Pradyumnan, 'ZnO:Gd nanocrystals for fluorescent applications', AIP conference proceedings 1731, 050005 (2016), doi 10.1063/1.4947659		20		
31	P U Aparna, N.K.Divya, and P P Pradyumnan,'Structural and Dielectric Properties of Gd Doped ZnO Nanocrystals at Room Temperature', Journal of Materials Science and Engineering, 2016, 4, 79-88		25	0.93	
32	N.K.Divya and P P Pradyumnan, 'Solid state synthesis of erbium doped ZnO with excellent photocatalytic activity and enhanced visible light emission, Materials Science in Semiconductor Processing, 41 (2016) 428-435		38	2.82	

23. Books published: with ISBN No., Without ISBN No., Chapters in books.

24. Patents Applied/Granted: National. International, commercialized:

25. Consultancy services provided and revenue generated:

26. Conferences ,seminars, symposia and workshops organized as convener/coordinator:

PartII

A. Details of Seminar/Workshops organized by the Centre

Sl. No	Titleoftheevent	Co-ordinator	Organizer/Sponsor&venue	International/ Natio	Duration

				nal	
1	National seminar on Advanced condensed matter Physics	Dr.P.P.Pradyumnan	UniversityofCalicut	National	4-5 Dec 2019
2	Science and Technology of New Materials for Sustainable Future	Dr.P.P.Pradyumnan	University of Calicut	National	7-9 February 2018
3	Recent Trends in Photovoltaic Technology and Collaborative research work with IFe.	Dr.P.P.Pradyumnan & Dr P Jayaram (MES College, Ponnani)	KSCSTE Govt. of Kerala, University of Calicut	International	19 Dec 2017
4	IUCAAsponsored3rdNationalconferenceonHighenergyemissionfromactivegalacticnuclei	Dr.P.P.Pradyumnan(Chairman)&Dr.C.D.Ravikumar (Convenor)	IUCAA	National	28-30November2017
5	HalfdayworkshoponRecentTrendsinPhotovoltaicTechnology	Dr.P.P.Pradyumnan	UniversityofCalicut,DepartmentofPhysics	National	19the Dec 2017
6	NationalseminaronTheoreticalPhysics	Dr.P.P.Pradyumnan&Dr. AntonyJoseph	UGC&UniversityofCalicut	National	24-25March2017

27. Number of collaborations: 5

28. Awards /recognitions received: International, National, State, University level.

Best Paper Award: 'Enhancement of Thermo i-- doped ---Oxide", Anju Paulson, P.P.Pradyumnan, Muhammed Shabeer, 'Second International Conference on Materials Science and Technology'(ICMST 2016) June 6-8, 2016, Department of Physics, St.Thomas College, Pala, Kottayam 686574, Kerala

Note: If necessary for Item No. 11 and 12 provide information in Enclosure-I, for 13, 14 and 15 Enclosure- II, for 16 Enclosure-III, for 22 and 23 Enclosure- IV and so on.

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