

5.4 Department of Physics

1. Name of the Department : Department of Physics
2. Year of establishment : 2003
3. Is the Department part of a School/Faculty of the university? : Yes
School of Pure and Applied Physics
4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.) : PG, Ph.D
5. Interdisciplinary programmes and departments involved : Nil
6. Courses in collaboration with other universities, industries, foreign institutions, etc.: Nil
7. Details of programmes discontinued, if any, with reasons : Nil
8. Examination System: Annual/Semester/Trimester/Choice Based Credit System: CCSS
9. Participation of the department in the courses offered by other departments: Nil
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (Including CAS & MPS)
Professor	Nil	Nil	0
Associate Professor	1	1	1
Asst .Professor	2	1	1
Others (Contract Staff)	3	3	3

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance.

Name	Qualification	Designation	Specialization	No. of years of experience (in the dept)	No. of M.Phil/PhD students guided for the last 4 years
Dr K P Santhosh	M Sc, M Phil, Ph D	Associate Professor	Nuclear Physics	25 years	Ph.D. -9
Dr N K Deepak	M Sc, Ph D	Assistant Professor	Material Science	11.5 years	Ph.D. -3

12. List of senior Visiting Fellows, adjunct faculty, emeritus professor:

1. Dr K P Vijaya Kumar, Professor, CUSAT, Cochin
2. Dr Vishnu Mayya Bannur, University of Calicut, Calicut
3. Dr K M Varier, Rtd Professor, University of Calicut, Calicut
4. Dr P P Pradyumnan, Associate Professor, University of Calicut, Calicut
5. Dr Antony Joseph, Associate Professor, University of Calicut, Calicut

13. Percentage of classes taken by temporary faculty – programme-wise information :
M.Sc. 60%

14. Programme-wise Student Teacher Ratio
M.Sc. 4:1, Ph.D. 8:1

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual : Technical staff – 1 (daily wages), Administrative staff – 2 (shared by three Departments)
16. Research thrust areas as recognized by major funding agencies:
Material Science, . Nuclear Physics
17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Sl. No	Title of the Project	Funding Agency	Amount sanctioned	Name of Principal Investigator
1	Theoretical studies on ternary fission	University Grants Commission, Govt. of India	Rs 8,00,000/-	Dr. K. P. Santhosh
2	Synthesis and Characterization of CIGS based Thin Film Solar Cell	Kerala State Council for Science Technology & Environment, Kerala	Rs 16,00,000/-	Dr. N. K. Deepak

18. Inter-institutional collaborative projects and associated grants received : Nil
a) National collaboration b) International collaboration
19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received: Nil
20. Research facility / centre with
 - state recognition : Yes
 - national recognition : Nil
 - international recognition : Nil
21. Special research laboratories sponsored by / created by industry or corporate bodies : Nil
22. Publications:
a. Number of papers published in peer reviewed journals (national/international) : 48
b. Monographs : Nil
c. Chapters in Books : Nil
d. Edited Books : Nil
e. Books with ISBN with details of publishers : Nil
f. Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.).
g. Citation Index – range / average
h. SNIP
23. Details of patents and income generated : Nil
24. Areas of consultancy and income generated : Nil
25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad.: Nil
26. Faculty serving in
a) National committees b) International committees c) Editorial Boards d) any other (please specify) : Nil

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
Orientation Programme: Dr. N.K. Deepak - 1
Refresher Course: Dr. N.K. Deepak. - 2
28. Student projects
- Percentage of students who have done in-house projects including inter-departmental projects - Nil, Syllabus revised including project work for 2014 admission onwards.
 - Percentage of students doing projects in collaboration with other universities industry / institute – Nil, Syllabus revised including project work for 2014 admission onwards
29. Awards / recognitions received at the national and international level by
- Faculty – Nil
 - Doctoral / post doctoral fellows : Nil
 - Students : Nil
30. Seminars/ Conferences/Workshops organized and the source of funding (national international) with details of outstanding participants, if any.

Name Seminar/Conference	Funding Agency	Date
Workshop on “”Sophisticated Instrument Studies	UGC, Govt. Of India	7-8 April 2009
National Seminar on “Dynamics of Sustainable Technology – Questions and challenges	KSCSTE, Govt. Of Kerala	8 June 2010
Workshop on Recent Trends in Material Science	UGC, Govt. Of India	5-6 April 2011
Three days Residential Training Programme – Inculcate Science Propagation Programme	KSSTM & PP, Govt. of Kerala	22-25 February 2013
One day workshop cum Training Programme - Inculcate Science Propagation Programme	KSSTM & PP, Govt. of Kerala	27 September 2014

31. Code of ethics for research followed by the departments:
Department insists the students to select new topics for their research and that their works to be novel in that field. Department always insists the students to cite properly the works they have mentioned, in order to avoid plagiarism. The Department insists students to publish their work in reputed journals
32. Student profile programme-wise:

Name of the Programme (refer to question no.4)	Applications Received	Selected		Pass percentage	
		Male	Female	Male	Female
M Sc Physics	220	4	15	50%	93%

33. Diversity of Students

Name of the Programme (refer to question no.4)	% of students From the same	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M.Sc. Physics	100%	Nil	Nil	Nil
Ph. D. in Physics	50%	50%	Nil	Nil

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.
 NET - 6
 GATE - 10
 JEST - 2

35. Student progression

Student Progression	Percentage against enrolled
UG to PG	Nil
PG to M.Phil.	6.6 %
PG to Ph.D.	13.3%
Ph.D. to Post-Doctoral	-
Employed <ul style="list-style-type: none"> ▪ Campus Selection ▪ Other than campus recruitment 	No Campus Selection process 30 %
Entrepreneurs	Nil

36. Diversity of staff

Percentage of faculty who are graduates of	
the same University	50 %
Other Universities within the State	50 %
Universities from other States	Nil
Universities outside the country	Nil

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: Nil
38. Present details of departmental infrastructural facilities with regard to
- a) Library: Well furnished Library with 2375 volumes of books and 13 Journals
 - b) Internet facilities for staff and students: Provided
 - c) Total number of class rooms : 2
 - d) Class rooms with ICT facility : Nil
 - e) Students' laboratories : 4
 - f) Research laboratories : 2

39. List of doctoral, post-doctoral students and Research Associates

i) Research Scholars

Sl. No	Name of the Research Scholar	Topic of Research	Name of Faculty Member
1.	Priyanka B.	Theoretical studies on the decay of heavy nuclei from ground state and as an excited compound system formed in heavy ion reaction.	Dr. K. P. Santhosh
2.	Prasoon Prasannan	Fabrication studies of copper indium gallium selenide based thin film solar cells.	Dr. N. K. Deepak
3.	Preethi Rajan M. K.	Theoretical studies on neutrino less double beta decay.	Dr. K. P. Santhosh
4.	Jayesh George Joseph	Theoretical studies on ternary and true ternary fission.	Dr. K. P. Santhosh
5.	Subha P. V.	Light charged particle and intermediate mass fragment emission from excited compound nuclei formed in heavy ion reaction.	Dr. K. P. Santhosh
6.	Indu Sukumaran	Studies on heavy particle radioactivity using nuclear proximity potential.	Dr. K. P. Santhosh
7.	Muneer C. P.	Fabrication studies of CdTe based thin film solar cells	Dr N. K. Deepak
8	Nripasree Narayanan	Preparation and characterisation of n and p type of ZnO thin films and modulation of doping of these films	Dr N. K. Deepak

ii) Project Fellow

Sl. No	Name of the Project Fellow	Topic of Research	Name of Faculty Member
1.	Prasoon Prasannan	Fabrication studies of copper indium gallium selenide based thin film solar cells.	Dr. N. K. Deepak
2.	Sreejith Krishnan	Theoretical studies on ternary fission.	Dr. K. P. Santhosh

a) from other institutions/universities: Nil

40. Number of post graduate students getting financial assistance from the university: Nil

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology: Nil

42. Does the department obtain feedback from

a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. The suggestions are implemented through discussions in the Department council.

b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

- Yes. The suggestions are implemented through discussions in the Department council.
- c. Alumni and employers on the programmes offered and how does the department utilize the feedback?
Yes. The suggestions are implemented through discussions in the Department council.
43. List the distinguished alumni of the department (maximum 10)
1. Dr. Ayishabi P. K. Asst Professor KMMW College, Kannur
 2. Dilna A. IIT Roorkee
 3. Sreedevi BARC, Mumbai
44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.
Special Lectures:
1 M Sc students and Research scholars jointly organised special lectures/seminars. on National Science day and so forth
45. List the teaching methods adopted by the faculty for different programmes.
Teaching is done through the Black Board, OHP, power point presentation etc.
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
Department council monitor the programme once in every 3 months.
47. Highlight the participation of students and faculty in extension activities.
Students and faculty are involved with the clean campus programme and also charitable help is extended to those deserving persons.
48. Give details of “beyond syllabus scholarly activities” of the department.
Students and faculty are involved with the clean campus programme and also charitable help is extended to those deserving persons.
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. : No
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
Department publishes a minimum of 10 papers per year in various peer reviewed journals with high impact factor.
51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.
Strength: Infrastructure, Syllabus, Library Books and Journals, Faculty, Research.
Weakness: Shortage of permanent faculty, lack of hostel facility, insufficient administrative staff, insufficient technical staff
52. Future plans of the department.
Department of Physics jointly with Department of Chemistry is planning to start an M.Phil programme in Material Science.
Department of Physics in collaboration with other Universities in Kerala is submitting a Major Research Project proposal to DST, Govt. of India for the research work on “Neutrino Flux Measurement” at India based Neutrino Observatory (INO), Theni, Tamil Nadu.