Dr. Manjusha M.V.

HEAD OF THE DEPARTMENT
Asst. Professor
Dept.of Physics
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Date of birth: 06-10-1977 **Sex: Female** **Nationality: Indian**

OBJECTIVE

Keenly interested in pursuing a teaching and research career in Physics, in particular in an institution which believes in excellence through teamwork and provides ample opportunities to explore the creative landscape of its members.

EDUCATION

(a)**Post Doctoral Research Experience**

Worked under UGC's **Dr. D.S. Kothari Post Doctoral Fellowship** in the project **"Thermal diffusion measurements Coatings and films by traveling thermal wave technique"** during the period June 2009-January 2011

(b)Ph.D. in Applied Physics

Title of the thesis: **"Thermal transport properties of selected ferroelectrics, mixed valance perovskites and dielectric ceramics using photopyroelectric technique"**
Department of Instrumentation, Cochin University of Science and Technology, India, 2009

(c) **Master of Science (M. Sc) in Physics - First class (73.33%)**

Specialization in **Applied Electronics**
School of Pure and Applied Physics, M.G. University, Kottayam, Kerala, India, (April 2000)

(d) **Bachelor of Science (B. Sc) in Physics – First class with Distinction (85.6%)**

Subjects - **Physics, Statistics and Mathematics**
M.G. University, Kottayam, Kerala, India, (May 1998)

PRESENT POSITION

Working as **Head of the Department**, **Research Guide and Asst. Professor in P.G and Research Dept. of Physics, The Cochin College,** since January 2011 till date

AREAS OF RESEARCH

EXPERTISE / INTEREST

Nanomaterials- Bio applications--Photothermal Techniques – Photoacoustic, Photopyroelectric and Photothermal deflection spectroscopy, Thermal Wave Resonant Cavity, Thermal lens, Gas sensors, Photonic materials, Nano materials and characterization studies, Ferroelectric Materials, M-I transition studies, Laser Physics and Low temperature physics-

TECHNICAL SKILLS

- Proficiency in experiments employing UV-Vis-NMR spectrophotometer, photoacoustic and photo pyroelectric techniques.

  Developed a new technique for the simultaneous determination of thermal conductivity and heat capacity employing photopyroelectric technique working under magnetic field.

  The thermal parameters like thermal diffusivity, thermal effusivity, thermal conductivity and heat capacity are determined during phase transitions with anaccuracy of ± 2%

  Preparation and measurements had been done on ceramic samples like LaMnO3, LaTeMnO3and LaSeMnO3undergoing the metal-insulator transition and magnetic phase transition, ferroelectric crystals like Di Calcium lead propionate and Potassium selenate involving ferro-paraelectric phase transition and Dielectric materials like zinc aluminate with titanium dioxide doping and Polytetrafluoroethylene/Sr2Ce2Ti5O16 Polymer/Ceramic Composites which are using in electronic packaging.

PUBLICATIONS

In referred journals

1. A compact photopyroelectric set up for the determination of temperature variation of the thermal conductivity and heat capacity of solids **M.V.Manjusha** and J.Philip, *J. Instrument Soc. of India* **33** (2003) 133-137

2. A low loss, dielectric substrate in $ZnAl_2O_4$–TiO_2 system for microelectronic application K. P. Surendran, M. T. Sebastian, **M.V. Manjusha** and Jacob Philip, J*. Appl. Phys* **98** (2005) 044101

3. Thermal Properties of Polytetrafluoroethylene/Sr2Ce2Ti5O16 Polymer / Ceramic Composites. G. Subodh, **M. V. Manjusha**, J. Philip, M. T. Sebastian, *J. Appl. Poly.Sci.* **108** (2008) 1716

4. Thermal transport across Incommensurate phase in Potassium Selenate: Photopyroelectric and calorimetric measurements. J.Philip and **M.V.Manjusha** *Jour. Of. Phys. Coden. Matt.* **21** (2009) 045901

5. Thermal properties of Dicalcium Lead Propionate across the prominent transition Temperatures **M.V.Manjusha** and J.Philip *Ferroelectric Letters* **35** (2008) 107–118

6. Low power CW optical limiting properties of bis(2-aminopyridinium)-succinate-succinic acid (2APS) single crystal. N.Ramamurthy, S.Dhanusodi, **Manjusha M V**, J.Philip, Sciencedirect, Optical Materials,***33*** (2011) 607-612

7. A travelling photothermal technique employing pyroelectric detection to measure thermal diffusivity of films and coatings. J.Philip, **M V Manjusha**, H Soumya, Review of Scientific Instruments,***82*** (2011)104901

8. Measurement of Thermal Diffussion in oatings and films by Travelling Thermal Wave Techniques, **Manjusha M V**, Philip J.***1349***, (2011) 469

9. **Bismuth Ferrite/Barium Titanate (BiFeO3/BaTiO3) Thick Films for High Energy Applications: A Review**
   *Dhanya Raj, Venkidesh T. V., and **Manjusha M. V***. (accepted)

In Conferences

1. Transient photoconduction in Te doped $LaMnO_3$ in the ceramic phase
   M.V.Manjusha and J.Philip, ISNOG (2006) Bangalore

2. Thermal properties of Dicalcium lead propionate crystals using photothermal Technique **M.V.Manjusha** and J.Philip, *DAE Solid State Physics Symposium*, Mysore, India De.27- 31, 2007

3. Thermal transport properties of potassium selenate –a Photopyroelectric study
   M.V.Manjusha and J.Philip, Kerala Science Congress ,Thiruvananthapuram, Kerala, India, Jan. 28-31, 2008

4. Thermal transport across Different phases in Potassium Selenate: Photo-pyroelectric and calorimetric measurements **M.V.Manjusha** and J.Philip, *DAE Solid State Physics Symposium*, BARC, Mumbai, India Dec.16-20, 2008

5. Thermal transport properties of selected ferroelectrics, mixed valance perovskites and dielectric ceramics using photopyroelectric technique **M.V.Manjusha** *DAE Solid State Physics Symposium*, BARC, Mumbai, India Dec.16-20, 2008.

6. Synthesis and Optical Characterisation of Fe doped Barium Titanate nanoparticles. Dhanya Raj, **Manjusha M V,** Second International Conference of Science and Technology of Advanced Materials, April 2023
7.

CONFERENCES ATTENDED

1. **National Seminar on Current Trends in Materials Science**, M. G. University, Kottayam, INDIA, March 23-24, 2001.
2. **National Symposium on Instrumentation**, Bharathiayar University, Koimbatore,Tamilnadu, India, November 28-30, 2002
3. **National Symposium on Instrumentation**, Dept. Of Instrumentation, CUSAT, Kerala, India, November 28-30, 2005
4. **National Symposium on Ultrasonic**, STIC, CUSAT, Kerala, India, December 17-19, 2007
5. **DAE Solid State Physics Symposium**, Mysore**,** INDIA, December 27–31, 2007

FELLOWSHIPS AVAILED

- **Junior Research Fellowship** (JRF) and **Senior Research Fellowship** (SRF) from **Cochin University of Science and Technology**, Cochin, India.
- **Dr. D.S.Kothari Post Doctoral Fellowship** from UGC

PERSONAL DETAILS

Passport No.	**:**	**E1350656**
Religion	**:**	Hindu, Nair
Marital status	**:**	Married
Spouse	:	Mahesh K. Nair M.B.A.
Children	:	Malavika M. Nair
		Madhav M. Nair