

AMBIKA D

Asistant Professor,
Dept. of Physics.
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Academic Records

Ph.D, Submitted the Thesis to Mahatma Gandhi University title “Dielectric, Piezoelectric, and Nonlinear optical properties of lead titanate based ferroelectric thin films”

M.Phil in Photonics, International School of Photonics, Cochin University of Science and Technology, Cochin.

M.Sc Physics, School of Pure and Applied Physics, M.G.U, Kottayam.

Work Experience

- Worked as a project staff and research scholar at Centre for Materials for Electronics Technology, Thrissur from Jan 2006 to Oct 2011.
- Worked as a research assistant at Centre for Development of Imaging Technology (C-DIT), Trivandrum, in a project on “Development of a Radiographic System for Dental Imaging” for six months from 22nd April 2004 to 30th October 2004.

Research Interests

- ♣ Dielectric, piezoelectric and ferroelectric materials
- ♣ Photonic Materials
- ♣ Nonlinear Optics

Research Skills

- ⇒ Experience in operating various laser systems (Nd: YAG, MOPO, Ar⁺ ion, He-Ne, He-Cd, Diode etc.), Lock in amplifier, UV-VIS-IR Spectrophotometer, Digital Multimeter etc .
- ⇒ Experience in the growth and characterization of single crystals and thin films.

- ⇒ Working knowledge in computer packages: Microsoft Office, Origin, Adobe Photoshop, Matlab.
Operating systems: DOS, Windows.

Membership

Life member, Association of physics Teachers (APT), Kerala

List of Publications

Journals:

- **D. Ambika**, V. Kumar, C. S. Suchand Sandeep and Reji Philip, “Non-linear optical properties of $(\text{Pb}_{1-x}\text{Sr}_x)\text{TiO}_3$ thin films,” *Appl. Phys. B* **97**, (2009) 661-664.
- 2. **D. Ambika**, Viswanathan Kumar, Hideyuki Imai and Isaku Kanno, “Sol-gel deposition and Piezoelectric properties of {110}-oriented PZT thin films,” *Appl. Phys. Lett.* **96** (2010) 031909.
- 3. **D. Ambika** and V. Kumar, “Chemical solution deposition and nonlinear dielectric characteristics of $(\text{Pb}_{0.5}\text{Sr}_{0.5})\text{TiO}_3$ thin films,” *J.Phys.D: Appl.Phys*, **43** (2010) 065401.
- 4. **D. Ambika**, Viswanathan Kumar, C.S. Suchand Sandeep and R.Philip, “Tunability of third order nonlinear absorption in PLZT thin films”, *Appl. Phys, Lett.*, **98** (2011) 011903.
- 5. **D. Ambika**, V. Kumar, K. Tomioka and Isaku Kanno. “Deposition of PZT thin films with {001}, {110}, and {111} crystallographic orientations and their transverse piezoelectric characteristics” *Adv. Mater. Lett.*, **3**, (2012) 102-106.
- 6. Litty Irimpan, **D. Ambika**, V. Kumar, V. P. N. Nampoory and P. Radhakrishnan, “Effect of annealing on the spectral and nonlinear optical characteristics of thin films of nano-ZnO”, *J. of Appl. Phys.*, **104**, (2008) 03118.
- 7. P.V. Divya, **D. Ambika**, Dhanya Krishnan, K. Sivanandan and V.Kumar, “Fabrication and Tunable Dielectric Properties of $(\text{Ba}_{0.70}\text{Sr}_{0.30})\text{TiO}_3$ - Glass Based Thick Film Capacitors,” *Int. J. Appl. Ceram. Technol.*, **6** (2009) 231-235.

Conferences:

- *Third order nonlinear optical properties of ZnO thin films using z-scan technique*, A. Deepthy, D Ambika, Sajan D George, V Kumar and V P N Nampoori, Photonics 2004 (*Seventh International conference on Optoelectronics, Fiber optics and Photonics*), Cochin, India, December 9-11, (2004).
- *Anisotropy in thermal properties of ULMA single crystals – A Photoacoustic study*, S. Vanishri, A. Deepthy, **D. Ambika**, Sajan D George, V.P.N Nampoori and H.L. Bhat, National Laser Symposium, December 26-28, (2003), IIT Kharagpur, India.