

**DR. ANISHA MARY MATHEW**

Assistant Professor,

Dept. of Physics.

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***Academic Records***

Ph.D, Submitted the Thesis to Kerala University title “Conducting Polymer Intercalation in Elastomeric Thin Films”

M.Phil in Physics, Bharathidasan University, Tamilnadu.

M.Sc Physics, Kerala University Thiruvananthapuram.

***Work Experience***

Worked as a research scholar at National Institute of technology, Calicut from 2009 to 2012.

***Teaching experience***

Asst. Professor, Dept. of Physics, Baselius College Kottayam (01/03/2013-present)

***Research Interests***

- ♣ Conducting Polymers
- ♣ Polymer Processing
- ♣ Polymer Composites
- ♣ Polymer Nanoparticles

***Research Skills***

- ⇒ Synthesis techniques of conducting polymers like chemical co-precipitation technique, in-situ polymerization, electrochemical polymerization, plasma polymerization, spin coating etc. Experience in the growth and characterization of single crystals and thin films.
- ⇒ Material Characterization techniques like XRD, UV optical spectroscopy, ellipsometric analysis, AFM, FT-IR., Impedance Spectroscopy, cyclic voltammetry, dc resistivity.

- ⇒ Working knowledge in computer packages: Microsoft Office, Origin, Adobe Photoshop

### ***Membership***

Life member, Association of physics Teachers (APT), Kerala  
Life member, Indian Science Congress

### **Activities:**

- Actively participated and local coordinating committee member, OPTICS'11, International Conference on Light, May 2011, held at National Institute of Technology, Calicut.
- Edited the conference Proceeding, OPTICS'11, International Conference on Light, May 2011, held at National Institute of Technology, Calicut.
- Actively participated and Local coordinating committee member, INSPIRE, Winter Science Camp, Dec 2010, held at National Institute of Technology, Calicut.
- Actively involved and monitored M.ScTech and MSc project works during the period of my Ph. D.
- Actively involved in the case-control study of low level radiation area in the south west coast of Kerala during the period of my M.Phil Project Work.
- Actively participated in National Conference on Thermo physical Properties (NCTP '07) held at Amrita Vishwa Vidyapeetham, Kollam, Kerala (2007).

### **RESEARCH PUBLICATIONS**

#### **List of Papers published**

- Plasma-polymerized elastomer/conducting polymer composite: Structural and optical characterization Anisha Mary Mathew, P. Predeep, *Polymer Composites* Volume 34, Issue 7, pages 1091–1098, July 2013
- Intrinsically conducting rubbers: toward micro applications, P. Predeep, Anisha Mary Mathew, *Rubber chemistry and technology*, (2011),84, 3, 366–401.

- Styrene Butadiene Co- polymer based conducting polymer composite as an effective corrosion protective coating, Anisha Mary Mathew, and P. Predeep, Progress in Organic Coatings 74 (2012), pp14-18
- Synthesis of highly translucent semiconducting thin films from elastomer nanoparticles, P. Neena, Anisha Mary Mathew, P. Predeep, Optoelectronics and Advanced Materials – Rapid Communications, Vol. 5, No. 9, September 2011, p. 985 – 987
- Styrene butadiene copolymer-based transparent conducting thin films: Effect of dopants, N.M. Faseena, G. Santhamma, Anisha Mary Mathew, Predeep Padmanabhan, Journal of Elastomers and Plastics December 23, 2012 0095244312468441(published online)
- Electrochemical synthesis of conducting natural rubber nanocomposite films, M. M. Anisha; N. M. Faseena; P. Predeep, Plastics Rubber and Composites, Volume 42, Number 6, July 2013 , pp. 264-267(4)
- Effect of Applied Potential on the Electrochemical Deposition of Styrene-Butadiene Co-Polymer Based Conducting Polymer Composite, Anisha Mary Mathew, Neena P and P. Predeep, AIP Conf. Proc. 1391, pp. 799-801(2011)
- Optical Characterization of Semiconducting Natural rubber Nanoparticles and its composites, Neena P, Anisha Mary Mathew, and P. Predeep, AIP Conf. Proc. 1391, 131 (2011)
- Styrene-Butadiene Co-Polymer Based Highly Conducting and Flexible Polymer Composite Film with Low Percolation Threshold, Anisha Mary Mathew, Neena P and P. Predeep, AIP Conf. Proc. 1391, 793 (2011)
- Synthesis and Characterization of Polypyrrole Coated SBR Composites, Anisha Mary Mathew, Neena.P, Prasanth.S, N.S.Panwar and P.Pradeep, AIP Conf. Proc. 1004, 264 (2008)
- Evaluation of a. c. conductivity Behaviour of Conducting Rubber Based Composite Neena.P, Anisha Mary Mathew, Prasanth.S, N.S.Panwar and P.Pradeep, AIP Conf. Proc. 1004, 269 (2008)

### **Patent files published**

- Organic Light Emitting Structure Using a Novel Elastomer Composite: Transparent Conducting Anode Replacing Transparent Conducting Oxides (TCOS); Application No.18/CHE/2011 A
- Transparent Conducting Hole-Injecting (HIL) Polymer-Elastomer Composite Material for Organic Electronic Applications; Application No.19/CHE/2011 A
- Fully Plastic and Large Area Printable Solar Cell Using Conducting Polymer-Elastomer Composite Transparent Hole-Injecting Electrode; Application No.20/CHE/2011 A
- Humidity And Gas Sensor From Conducting Polymer Nanoparticles – Plastic Composites. Application No.23/CHE/2011 A
- Conducting Polymer Nano Particles From Elastomers; Application No.22/CHE/2011 A

### **Papers presented in international conference**

- Thin Film Deposition of Styrene Butadiene Co-Polymer Based Conducting Polymer Composite by Electrochemical Method (International conference on Materials of Future ICMF- 2011)
- Effect of Applied Potential on the Electrochemical Deposition of Styrene-Butadiene Co-Polymer Based Conducting Polymer Composite, Anisha Mary Mathew, Neena P and P. Predeep (International conference on Light, OPTICS-11)
- Optical Characterization of Semiconducting Natural rubber Nanoparticles and its composites, Neena P, Anisha Mary Mathew, and P. Predeep (International conference on Light, OPTICS-11)
- Styrene-Butadiene Co-Polymer Based Highly Conducting and Flexible Polymer Composite Film with Low Percolation Threshold, Anisha Mary Mathew, Neena P and P. Predeep (International conference on Light, OPTICS-11)
- Synthetic elastomer / conducting polymer composites by plasma polymerization for microelectronic application (ISRS IIT Chennai)
- Electrochemical Synthesis and Characterization of Styrene-Butadiene Copolymer Based Conducting Polymer Composite Film (International Conference on Advances in Polymer Technology, Feb. 26-27, 2010, India, Page No.131)
- Natural rubber conducting polymer composite thin films for new generation applications (Kerala Science Congress -2009)

- Low cost Humidity sensor from Styrene butadiene Co-polymer, Anisha Mary Mathew, Neena.P, Prasanth.S, N.S.Panwar and P.Pradeep, National symposium for Material Research Scholars (MR 08), IIT Bombay, May 2008
- Synthesis and Electrical Characterization of Polypyrrole based cis 1,4 polyisoprene Composites, Neena.P, Anisha Mary Mathew, Prasanth.S, N.S.Panwar and P.Pradeep, National symposium for Material Research Scholars (MR 08), IIT Bombay, May 2008
- Humidity sensors from cis 1,4 polyisoprene, Prasanth.S, Anisha Mary Mathew, Neena.P, N.S.Panwar and P.Pradeep, National Conference on Advances in Sensors for Aerospace Applications (SEMSORS 2007), Defence R&D Organization, Hyderabad.