

PIYUSH ANANT

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Senior Research Scholar,
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Objective To obtain a position in Research and Development (R&D) organization to utilize my research skills and analytical expertise.

Education

- **Ph.D in Polymer Science (2006-)**

Institution: Centre for Polymer Science and Engineering, IIT Delhi, India.

Supervisor: Dr. Josemon Jacob

Pre Ph.D (Synopsis) presentation: SUBMITTED

Title: Synthesis and Characterization of 4,4'-bis(2,1,3-benzothiadiazole) Based Conjugated Materials for Electronic Applications

Description: 2,1,3-Benzothiadiazole based oligomers and polymers are well known conjugated materials for optoelectronic devices such as **field effect transistors (FETs)** and **solar cells**. However, there are very few reports on the synthesis and characterization of **4,4'-bis(2,1,3-benzothiadiazole)** based materials. In the present work, a series of oligomers and polymers based on 4,4'-bis(2,1,3-benzothiadiazole) with 9,9-dioctylfluorene and octylthiophene has been synthesized and characterized for solar cells and FETs. The synthesized materials were characterized by ¹H NMR, ¹³C NMR, MALDI TOF, elemental analysis, Differential Scanning Calorimetry, Thermo gravimetric analysis, UV-visible, Fluorescence spectroscopy, Gel Permeation chromatography (GPC) and tested in **optoelectronic devices**.

- **Master of Science (M.Sc.) in Chemistry (2003-2005)**

Institution: Department of Chemistry, IIT Delhi, India.

Supervisor: Prof. (Dr.) Veena Choudhary,

Centre for Polymer Science and Engineering, IIT Delhi, India.

Projects:

1. Prepared nano silica filled sulphonated poly(ether ether ketone) membrane for fuel cells.
2. Determination and Estimation of various elements present (Ca, Mg, K) in waters collected from different sources in Indian Institute of Technology, Delhi, India.

- **Bachelor of Science (B.Sc.)(H) in Chemistry (2000-2003)**

Institution: Department of Chemistry, Hindu College, University of Delhi, India.

Publications

- Synthesis and characterization of pyrene-centered oligothiophenes. **Anant, P.**; Lucas, N. T.; Ball, J. M.; Anthopoulos, T. D.; Jacob, J. *Synth. Met.*, 2010, *160*, 1987-1993. (Published)
- A Simple Route toward the Synthesis of Bisbenzothiadiazole Derivatives. **Anant, P.**; Lucas, N. T.; Jacob, J. *Org. Lett.* 2008, *10*, 5533-5536. (Published)
- Synthesis and Characterization of 4,4'-bis(2,1,3-benzothiadiazole) based polymers. **Piyush Anant**, Josemon Jacob. In *Proceedings of the International Congress on Polymer Science & Technology: Vision and Scenario, organized by Asian Polymer Association (APA-2009)*. (Published)
- Synthesis and Characterization of 2,1,3-Benzothiadiazole Based Low Band Gap Conjugated Materials. **Piyush Anant**, Josemon Jacob. In *Proceedings of the 25th International Conference on Polymer Processing Society (PPS), 2009*. (Published)
- Synthesis and Characterization of pyrene-centered materials for field effect transistors (FETs). **Piyush Anant**, Josemon Jacob. Macro-2010. (Abstract accepted)
- Synthesis and Characterization of 4,4'-bis(2,1,3-benzothiadiazole) based copolymers for solar cells. **Piyush Anant**, Josemon Jacob. *Frontiers in Polymer Science*, Lyon, France. (In Submission)

Skills

- **Synthesis:** Organic synthesis (dealing with scheme set up for a particular problem, monitoring the progress of the reaction, isolation, purification, characterization of the desired compounds)
- **Instrumentation and characterization:** ¹H NMR, ¹³C NMR, Mass spectroscopy, Infra-red spectroscopy, UV-Visible spectroscopy (UV-vis), Fluorescence spectroscopy, Differential Scanning Calorimetry (DSC), Thermogravimetric Analysis (TGA), X-ray diffraction (XRD)
- **Software:** Sci-Finder, ACD labs, MS Office, ISIS Draw, End Note, and all other basic application software.

Awards and Fellowships

- Awarded **First Prize** for presenting the poster entitled "Synthesis and Characterization of 2,1,3-Benzothiadiazole Based Low Band Gap Conjugated Materials" during the **International Poster Session** at 25th Annual Meeting of **Polymer Processing Society (PPS-25)** held at Goa, India from March 1-5, 2009.
- For reasons of outstanding academic performance and for being among the **top 0.1 percent** of successful candidates of **All India Secondary School Examination 1997** in **Mathematics**.
- Awarded the certificate for obtaining **95 %** marks in the first level of **National Mathematics Olympiad Contest** for IX class, organized by Delhi Association of Mathematics Teachers.

- **HRD Scholarship:** Qualified the first phase of **examination for Shyama Prasad Mukherjee (SPM) fellowship** awarded by Council for Scientific and Industrial Research (CSIR), New Delhi, India.
- **HRD Scholarship:** Awarded **Junior Research fellowship (JRF)/ Senior Research fellowship (SRF)** by Council for Scientific and Industrial Research (CSIR), New Delhi, India.
- **HRD Scholarship:** Awarded certificate for qualifying **Graduate Aptitude Test in Engineering (GATE)** in chemistry.
- **Entrance exam for M.Sc. Chemistry, IIT Delhi:** Ranked **2nd** in the entrance exam for M.Sc. Chemistry at Indian Institute of Technology Delhi, New Delhi, India.
- **National Scholarships Scheme, Director of Education, Govt. of N. C. T. of Delhi :** Certificate of Merit awarded in recognition of the **high position secured** in the list of meritorious candidates qualifying for **awards from CBSE. S. S. Exam in 1997.** Certificate is awarded in lieu of **monetary scholarship** which would have been awarded had the income of parents been below the maximum limit laid down in the rules of the scheme.
- Awarded certificate of merit and prizes in school.

Organizational Responsibilities

- **Mess Convenor,** Hindu College Hostel, University of Delhi, New Delhi (July, 2002 - May, 2003)
- **Chief Organizing Officer for MEECA,** Hindu College annual festival (July, 2002 - Jun, 2003)
- **President,** Chemical Society "TATVA", Department of Chemistry, Hindu College, University of Delhi (July, 2002 - Jun, 2003)
- **Secretary,** Chemical Society "TATVA", Department of Chemistry, Hindu College, University of Delhi (July, 2001 - Jun, 2002)
- **Jt. Secretary,** Chemical Society "TATVA", Department of Chemistry, Hindu College, University of Delhi (July, 2000 - Jun, 2001)
- **Teaching and Mentoring ability** (July, 2006 - Present): Mentor M.Tech students during their project work, Conducted Polymer Chemistry lab for four years.

I, certify that the above mentioned information is true to the best of my knowledge.

PIYUSH ANANT