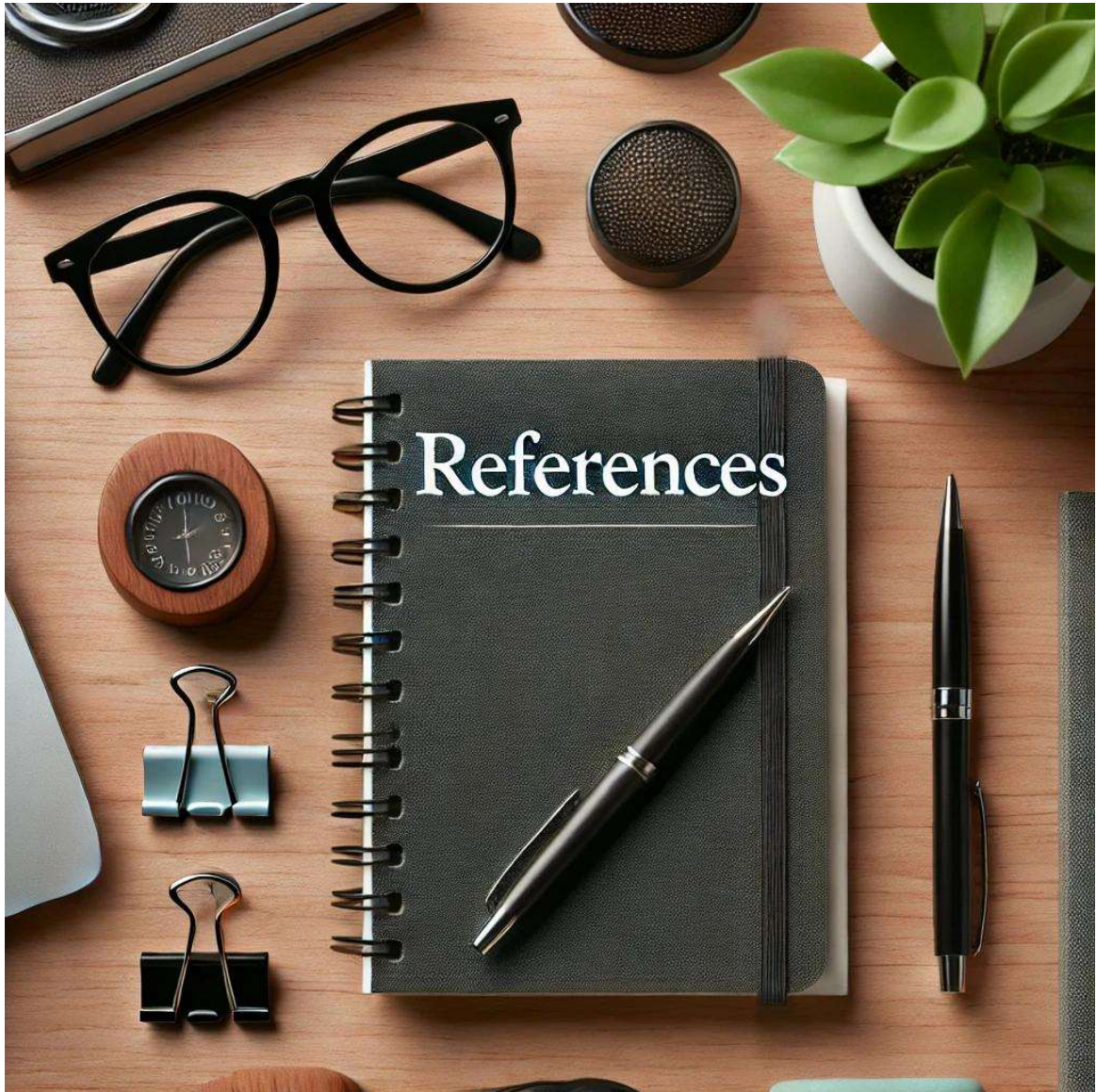


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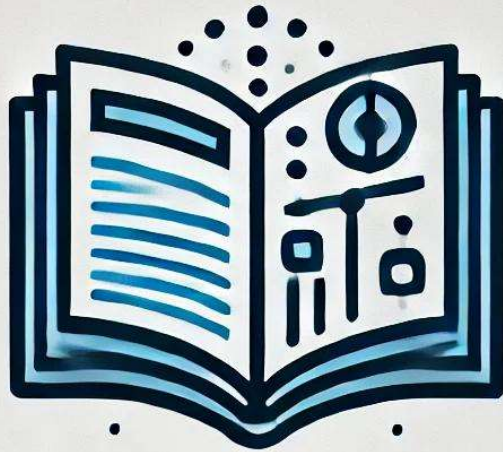
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# *Publications*

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**PUBLICATIONS**





## *List of Publications*

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1. **Shyam R**, Manaka T, Prakash R. Anisotropic charge transport study of highly oriented P4T2F-HD thin film fabricated at air–liquid interface through second harmonic generation (SHG) analysis. *RSC Applied Interfaces*. 2024.;  
<https://doi.org/10.1039/D4LF00206G>.
2. **Shyam R**, Manaka T, Prakash R. Fabrication of highly sensitive flexible phototransistors through a unidirectional floating film transfer method using P4T2F-HD thin films. *Journal of Materials Chemistry C*. 2024.;  
<https://doi.org/10.1039/D4TC02386B>
3. **Shyam R**, Aich PK, Pandey U, Pal BN, Prakash R. Fabrication of NIR sensitive-low operating voltage phototransistor with unidirectional organic polymer. *IEEE Sensors Journal*. 2024 Sep 2.  
<https://doi.org/10.1109/JSEN.2024.3448252>
4. **Shyam R**, Jana S, Manaka T, Prakash R. Template-Assisted Assembly of DPP-TTT over a Hydrophilic Liquid Subphase toward Enhanced Charge Transport in Organic Field-Effect Transistors. *ACS Applied Polymer Materials*. 2024 Jun 4.  
<https://doi.org/10.1021/acsapm.4c01012>
5. **Shyam R**, Manaka T, Prakash R. Enhancement of organic field-effect transistor performance via precision molecular alignment of a P4T2F-HD-based conjugated polymer. *Synthetic Metals*. 2024 Dec 1; 309:117754.  
<https://doi.org/10.1016/j.synthmet.2024.117754>
6. **Shyam R**, Sharma S, Pandey SS, Manaka T, Prakash R. Study on the charge transport behaviour of mxene-polymer nanocomposite-based self-assembled floating films at the air-liquid interface. *Materials Today Electronics*. 2024 Sep 1;9:100112.  
<https://doi.org/10.1016/j.electacta.2022.141436>
7. **Shyam R**, Jana S, Manaka T, Prakash R. Development of High-Performance flexible Photodetectors through band engineering and synergistic modulation in P3HT/C3N5 thin film. *Sensors and Actuators B: Chemical*. 2024 Nov 1;418:136190.  
<https://doi.org/10.1016/j.snb.2024.136190>

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8. **Shyam R**, Kumar A, Pal S, Prakash R. Investigation of palladium-doped 2D g-C<sub>3</sub>N<sub>5</sub> materials for enhanced electrocatalytic activity towards hydrogen evolution reaction. *Electrochimica Acta*. 2024 Aug 20; 496:144485.  
<https://doi.org/10.1016/j.electacta.2024.144485>
9. Rajpal; Ojha RP, Jana S, **Shyam R**, Prakash R. Isoniazid (Inh) a Tuberculosis Drug Detection Using Turn-Off Fluorescent [Ce (O-Van) 3 (H<sub>2</sub>O) 3] in Real Samples. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. 2025 Mar 14:126057. <https://doi.org/10.1016/j.saa.2025.126057>
10. S. Jana, S. Sharma, **Shyam R**, S. S. Pandey, S. P. Singh, R. Prakash\*, “Synergistic Integration of Dye Molecule and Semiconducting Polymer for Near Infrared Organic Phototransistors.” *Advanced Optical Materials*.:2402695  
<https://doi.org/10.1002/adom.202402695>
11. **Shyam R**, Manaka T, Prakash R, “Direct visualization of carrier motion in DPP-TTT blended organic thin film transistor by optical second harmonic generation”,” *ACS Applied Nano Materials*. (Communicated)
12. **Shyam R**, Sharma S, Pandey SS, Manaka T, Prakash R. “Self-assembled Mxene composite thin films enhanced organic thin film transistor performance”. (communicated)
13. **Shyam R**, Manaka T, Prakash R. “Technique-Driven Manipulation of Polymer Chain Orientation and Charge Transport in Thin Films: Anisotropic Transport Insights via Time-Resolved Second Harmonic Generation” (Communicated)
14. **Shyam R**, Jana S, Prakash R, “Study of intermolecular  $\pi$ -stacking of PBTTT C-14 Langmuir Schaefer film with the change of subphase surface pressure” (writing-Process)
15. Kumar A, Prakash R, **Shyam R**, Prakash R, “To study the effect of alkyl chain on super capacitive behavior of Co-polymer derived from aniline and thiophene using electrochemical and FTM technique” (writing-Process)

## *Conferences / Workshop Attended*

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## *Conference / Workshop Attended*

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### *Conferences*

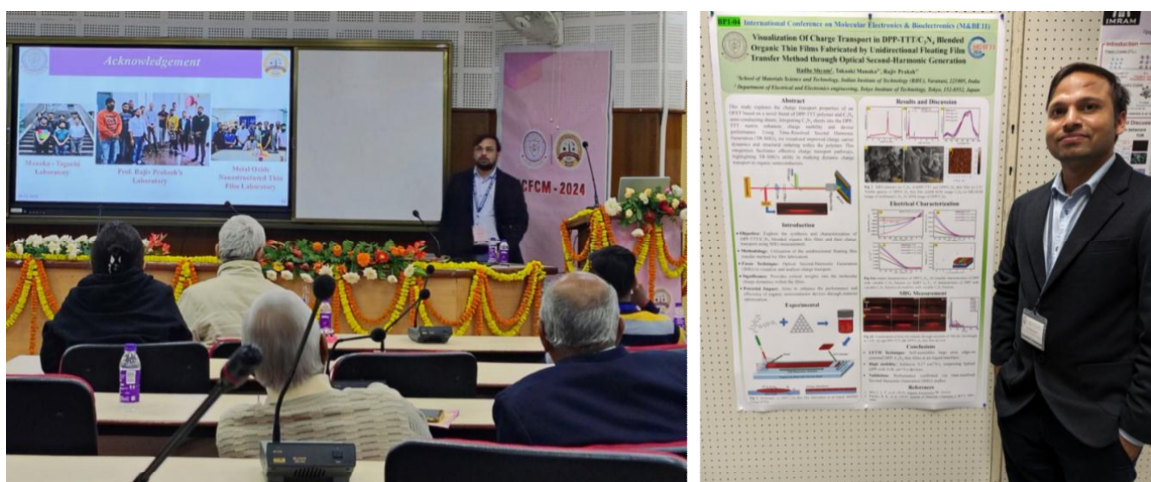
1. **Shyam R**, Pal BN, Manaka T, Prakash R, “Highly Oriented Organic Thin Film at Liquid-air interface for Electronic and Optoelectronic applications” at ICFCM-2024 held by Indian Institute of technology (BHU) Varanasi (ICCFM: International conference on Frontier of Ceramics Materials) “**Contributory Talk**”
2. **Shyam R**, Manaka T, Prakash R. “Visualization of Charge Transport in DPP-TTT/C<sub>3</sub>N<sub>4</sub> Blended Organic Thin Films Fabricated by Unidirectional Floating Film Transfer Method through Optical Second-Harmonic Generation”, M&BE-11, 2024. (M&BE- International Conference on Molecular Electronics & Bioelectronics) “**Poster Presentation**”
3. **Shyam R**, Manaka T, Pal BN, Prakash R, “Fabrication of MXene-Polymer nanocomposite thin film by floating film transfer method for high-performance devices applications”, 34<sup>th</sup> AGM-MRSI-2023 (AGM-MRSI- Annual general meeting of Materials research society of India) “**Poster Presentation**”
4. **Shyam R**, Aich PK, Pandey U, Pal BN, Prakash R., “Solution Processed Low Voltage Polymer Nanocomposite based Organic Field Effect Transistor,” AMBT-2023 (AMBT- International Conference on Advanced Materials for better tomorrow) “**Poster Presentation**”
5. **Shyam R**, Pal BN, Prakash R.\*, “fabrication of Mxene-polymer nanocomposite based thin films for organic electronics applications,” ACPF-2023. (ACPF-International Conference on Advances in core and frontier of physics) “**Contributory Talk**”
6. **Shyam R**, S. Jana, R. Prakash, “Synthesis of mxene nanoflakes for organic electronics applications,” ICNME, 2022, Tokyo, Japan. (ICNME-International conference on nanomolecular electronics) “**Poster Presentation**”
7. **Shyam R**, S. Mathur, V. Kumar “Development of device for recycling of polystyrene foam” APM, 2016, Bengaluru, India\_(APM- Advancement in Polymeric Materials) “**Poster Presentation**”

### *Workshop*

1. Workshop on embedded robotics workshop conducted by i3indya Technologies.
2. Workshop on energy conservation conducted by PCRA.

## *Conference / Workshop Attended*

3. Participated in 2 workshop programs on LaTeX organized by IEEE IAS student.
4. Webinar on Scientific writing by ACS Publications.
5. Webinar on Trends in Applied and Basic Polymer Research.



# *Research Visit*

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## *Research Visit*

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1. Research Visit to Department of Electrical and Electronics Engineering, Tokyo Institute of Technology, Tokyo, Japan. Tokyo Institute of Technology, Tokyo, Japan

**Duration:** 15-01-2024 to 30-06-2024, **Funding Agency:** **JSPS-KAKENHI**

**Project:** **Analysis of Device Operation of Organic Photosensors with Dispersed 2D Nanosheets; Project Supervisor: Prof. Takaaki Manaka**

2. Research Visit to Department of Electrical and Electronics Engineering, Tokyo Institute of Technology, Tokyo, Japan. Tokyo Institute of Technology, Tokyo, Japan

**Duration:** 04-04-2023 to 30-06-2023, **Funding Agency:** **JSPS-KAKENHI**

**Project:** **Charge Transport study of 2D materials and polymer nanocomposites for electronics applications; Project Supervisor: Prof. Takaaki Manaka**

3. Research Visit to Department of Electrical and Electronics Engineering, Tokyo Institute of Technology, Tokyo, Japan. Tokyo Institute of Technology, Tokyo, Japan

**Duration:** 03-11-2022 to 31-12-2022, **Funding Agency:** **JSPS-KAKENHI**

**Project:** **Orientation mechanism of Low band Gap Uniaxially-Oriented Polymer Semiconductor and its Carrier Transport Characteristics; Project Supervisor: Prof. Takaaki Manaka**

*Research Visit*

