Dr. Manju Sheokand



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Personal Information

Name	Dr. Manju Sheokand
Date of Birth	14th January 1993
Nationality	Indian

Current Position

September 2025- Current	**Assistant Professor of Instruction** **Department of Chemistry and Biochemistry,** **Texas State University, San Marcos, TX, USA**

Formal Education

May 2024 – August 2025	**Postdoctoral Fellow**
Research Advisor	Prof. Jennifer Irvin/ Prof. Sean Kerwin Professor, Department of Chemistry and Biochemistry, Texas State University, San Marcos

PhD (2023) Thesis Title:	Organic Chemistry (Doctorate) Design and Synthesis of Phenothiazine and Phenothiazine Sulfone Derivatives
PhD Supervisor:	Dr. Rajneesh Misra Professor, Department of Chemistry, Indian Institute of Technology Indore, India
MSc (2016)	Organic Chemistry (65.5%) Department of Chemistry, P.G.G.C, SEC-11, Chandigarh (PU)
B. Sc. (2014)	Chemistry, Physics, Mathematics (63.2 %) P.G.G.C.G, SEC-11, Chandigarh (PU)

Awards/Fellowships/Scholarships Held

- **Senior Research Fellowship**, Council of Scientific andIndustrial Research, New Delhi, 2019-2022
- **Junior Research Fellowship**, Council of Scientific andIndustrial Research, 2017-2019
- Qualified GATE 2014 (Chemistry)
- CSIR NET-JRF (AIR-49)

Experimental, Analytical and Instrument Handling Skills

➢ Synthesis Skills

- Multistep synthesis of organic molecules
- Synthesis and characterization of organic molecules via various coupling reactions (Suzuki cross coupling, and Sonogashira cross coupling reactions.
- Bromination, alkylation, arylation of conjugated derivatives.
- Amination of halogenated molecules via Buchwald-Hartwig coupling.
- Oxidation of sulfur containing derivatives with the help of oxidizing agents like H2O2 and m-CPBA.
- Modification of PAN fibre.
- Polymerization

➢ Purification Skills

- Column chromatography and crystallization techniques

➢ Analysis Skills

- ^{1}H, and ^{13}C NMR spectroscopy, 2D-HSQC NMR spectroscopy, Mass spectrometry, High-performance liquid chromatography (HPLC) and Elemental Analysis (CHNS), GC-MS.
- Single crystal X-ray crystallography (SCXRD), Mounting and diffraction of crystals (in brief)
- Powder X-ray diffraction (XRD)
- Solid-state and liquid state UV-vis absorption spectroscopy and fluorescence spectroscopy
- Thermo gravimetric analysis (TGA) and DSC.
- Electrochemical techniques: Cyclic voltammetry (CV) of organic and inorganic materials
- Scanning Electron Microscopy (SEM)
- FT-IR, GC, GC-MS

➢ Instrument Handling Skills

- Agilent Technologies (Oxford Diffraction) Super Nova CCD for Crystal diffraction (in brief)
- BRUKER Daltronics Micro-TOF-Q II for LCMS
- Varian Cary 100 Bio UV-Visible spectrophotometer and Perkin Elmer Lamda 1050 for UV-Vis analysis
- CHI620D for cyclic voltammetry
- Mettler Toledo TGA/DSC 1 for Thermo gravimetric analysis.
- Electro-spinner
- Software Handling Skills: Microsoft Office, Origin 8.5, ACD and Mastronova (NMR), ChemDrawUltra, Mendeley, CASA,) Gaussian 09, Putty, Mercury.

Skills and Abilities

- Problem-solving and critical thinking aptitude.
- Multifaceted and goal-driven professional with hands-onexperience in laboratory and research work.
- Excellent communication and presentation skills, the capacity to work both independently and as part of a cross-functional team.

List of Publications

1. Huang, P.,[$] **Manju**,[$] Kazim, S., Sivakumar, G., Salado, M., Misra, R., & Ahmad, S.(2020). Pyridine bridging diphenylamine-carbazole with linking topology as rational hole transporter for perovskite solar cells fabrication. *ACS applied materials & interfaces*, 12(20), 22881-22890 (https://dx.doi.org/10.1021/acsami.0c03584). [IF= 10.38]

2. Lee, D. Y., Sivakumar, G., **Manju,** Misra, R., & Seok, S. I. Carbazole-based Spiro [fluorene-9, 9′-xanthene] as an efficient hole-transporting material for perovskite solar cells. *ACS applied materials & interfaces*, 12(25), 28246-28252 (https://dx.doi.org/10.1021/acsami.0c06318). [IF= 10.38]

3. Huang, P.,[$] **Manju**,[$] Kazim, S., Lezama, L., Misra, R., & Ahmad, S. Leverage of pyridine isomer on phenothiazine core: organic semiconductors as selective layers in perovskite solar cells. *ACS Applied Materials & Interfaces*, 14(4), 5729-5739 (https://doi.org/10.1021/acsami.1c21996). [IF= 10.38]

4. Huang, P., **Manju**, Kazim, S., Lezama, L., Misra, R., & Ahmad, S. Tailoring of a phenothiazine core for electrical conductivity and thermal stability: hole-selective layers in perovskite solar cells. *ACS Applied Materials & Interfaces*, 13(28), 33311-33320 (https://doi.org/10.1021/acsami.1c08470). [IF= 10.38]

5. **Sheokand, M.**, Rout, Y., & Misra, R. Recent development of pyridine based charge transporting materials for organic light-emitting diodes and perovskite solar cells. *Journal of Materials Chemistry C*, 10(18), 6992-7017 (10.1039/d2tc00387b). [IF= 8.06]

6. **Sheokand, M.**, Mencaroni, L., Ekbote, A., Bianconi, T., Mancuso, M. A., Elisei, F., ... & Misra, R. (2023). Enabling Peculiar Photophysics and Mechanochromic Luminescence by Introducing Bromine in Push–Pull Pyridine Derivatives. *J. Phys. Chem. C,* 127, 4176−4187 (10.1021/acs.jpcc.2c07355). [IF= 4.17]

7. **Sheokand, M.,** Alsaleh, A. Z., D'Souza, F., & Misra, R. (2023). Excitation Wavelength-Dependent Charge Stabilization in Highly Interacting Phenothiazine Sulfone-Derived Donor–Acceptor Constructs. *The Journal of Physical Chemistry B*, (10.1021/acs.jpcb.2c08472) [IF= 3.46]

8. Chiara Montanari,[1,$] Tommaso Bianconi,[1, $] **Manju Sheokand**,[2$] Giulia Cavalletti,[1] Titouan Teunens,[3,4] Jérôme Cornil,[4] Rajneesh Misra,[2,*] Benedetta Carlotti[1,*] , Enabling Red Thermally Activated Delayed Fluorescence by Increasing the Push-Pull Strength in Naphthalimide-Phenothiazine Derivatives**,** *Journal of Materials Chemistry C, (Just Accepted)*

9. **Sheokand, M.**, Nikhil Ji Tiwari and Rajneesh Misra[*,a], (2023). Near-IR absorbing 1,1,4,4-

tetracyanobutadiene-functionalized Phenothiazine Sulfones. *Organic & Biomolecular Chemistry*. (doi.org/10.1039/D3OB00361B**).** [IF= 3.89]

10. Peng Huang, **Manju Sheokand**, David Payno, Samrana Kazim, Luis Lezama, Rajneesh Misra, and Shahzada Ahmad, Molecular Tailoring of Pyridine Core-Based Hole Selective Layer for Efficient and Stable $Cs_2AgBiBr_6$ Perovskite Solar Cells, *ACS Applied Energy Materials.*

11. Manju Sheokand and Rajneesh Misra[*,a], Excited state studies of multi-modular phenothiazine derivatives with change in the oxidation state of sulfur atom from +2 to +6 state in thiazine ring.

Conferences/ Workshops

- Oral Presentation: Manju, Role of Pyridine based positional isomers as effective hole-transporting materials in the Perovskite solar cells, *MRSI Conclave,* 2021.
- Participated in International conference on Emerging Trends in Chemistry" IIT Indore on 12-15 July , 2019

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