

- program), SERB, India
- 2011 – now Regular reviewer for journals published by ACS, Wiley, RSC, Nature Publishing Gr., etc.
- 2021 – now Guest Editor of 1 special issue ([Metal-Free Room-Temperature Phosphorescence](#), *Frontiers in Chemistry*)
- 2013 – now Regular reviewer for SERB and other national funding agencies

• □ **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 2020 – Life member of Chemical Research Society (CRSI) of India
- 2020 – Life member of Materials Research Society (MRSI) of India
- 2012 – Member of American Chemical Society (ACS), Royal Society of Chemistry (RSC)

• □ **MAJOR COLLABORATIONS**

Prof. R. S. Tomar, Dr. A. Chande, Department of Biological Sciences, IISER Bhopal

Prof. K. Kailasam, Institute of Nano Science and Technology (INST), Mohali

Dr. Venkata Krishnan, Indian Institute of Technology Mandi

□ **COMPLETE LIST OF PUBLICATIONS IN STANDARD REFEREED JOURNALS:**

57. A. Giri, Y. Khakre, G. Shreeraj, T. K. Dutta, S. Kundu, A. Patra,* The Order-disorder Conundrum: A Trade-off Between Crystalline and Amorphous Porous Organic Polymers for Task-specific Applications, *J. Mater. Chem. A* **2022**, *10*, 17077-17121. [Link](#)
56. A. Giri, S. Biswas, M. W. Hussain, T. K. Dutta, A. Patra,* Nanostructured Hypercrosslinked Porous Organic Polymers: Morphological Evolution and Rapid Separation of Polar Organic Micropollutants, *ACS Appl. Mater. Interfaces* **2022**, *14*, 7369-7381 (*highlighted in [The Better India](#), [The Telegraph](#), [Vigyan Prasar](#), [India Today](#), [NDTV](#), [The Hindustan Times](#) and [The Hindu](#), featured in [Sansad TV in Science Monitor](#) and [Gyan Vigyan](#) episodes). [Link](#)*
55. S. Kundu*, S. Das, S. Jaiswal, A. Patra,* Molecular to Supramolecular Self-Assembled Luminogens for Tracking the Intracellular Organelle Dynamics, *ACS Appl. Bio Mater.* **2022**, *5*, 3623–3648. (*Invited review*)
54. A. Giri, A. Patra,* Porous Organic Polymers: Promising Testbed for Heterogeneous Reactive Oxygen Species Mediated Photocatalysis and Nonredox CO₂ Fixation, *Chem. Rec.* **2022**, e202200071. (*Invited Personal Accounts*)
53. S. Kundu, S. Das, A. Dutta, A. Patra,* Three in One: Stimuli-Responsive Fluorescence, Solid-State Emission, and Dual-Organelle Imaging Using a Pyrene-Benzophenone Derivative, *J. Phys. Chem. B* **2022**, *126*, 691-701. [Link](#)
52. S. Jaiswal, S. Das, S. Kundu, I. Rawal, P. Anand, A. Patra,* Progress and Perspective: Fluorescent to Long-lived Emissive Multifunctional Probes for Intracellular Sensing and Imaging, *J. Mater. Chem. C* **2022**, *10*, 6141-6195. (*Invited Review*)
51. S. Kundu, B. Sk, N. Saha, T. K. Dutta, S. Das, R. S. Tomar,* A. Patra,* Unraveling Molecular Assembly and Tracking Lipid Droplets Dynamics using Fluorescent Phenanthroimidazole Derivatives, *ChemRxiv.* **2022** *Preprint*.
50. B. Sk, M. Sarkar, K. Singh, A. Sengupta, A. Patra,* UV to NIR Multistate Electrochromism and Electrofluorochromism in Dibenzophenazine-arylamine Derivatives, *Chem. Commun.* **2021**, *57*, 13590-13593. [Link](#)
49. D. K. Chauhan, V. R. Battula, A. Giri, A. Patra, K. Kailasam,* Photocatalytic Valorization of Furfural to Value-added Chemicals via Mesoporous Carbon Nitride: A Possibility through Metal-free Pathway. *Catal. Sci. Technol.* **2022**, *12*, 144-153. [Link](#)
48. S. Das, S. Kundu, B. Sk, M. Sarkar, A. Patra,* Red Thermally Activated Delayed Fluorescence in Dibenzopyridoquinoxaline-Based Nanoaggregates. *Organic Materials* **2021**, *3*, 477-487. [Link](#)
47. Jumana. H. M, A. Giri,* S. Kundu,* V. Kumar, B. Sk, A. Patra, Pyrene-cyanostyrene-pyridine Triad: Multi-stimuli Responsive Fluorescent Emitter and Mitochondrial Imaging, *Chem. Phys. Impact* **2021**, *3* 100036 (*Invited Article*).
46. M. Sarkar, T. K. Dutta, A. Patra,* Two-dimensional Covalent Organic Frameworks for Electrochromic Switching, *Chem. Asian. J.* **2021**, *16*, 3055-3067 (*Invited Minireview*).
45. S. Kundu, B. Behera, A. Giri, N. Saha, A. Patra,* N,N'-Bicarbazole-Benzothiadiazole-based Conjugated Porous Organic Polymer for Reactive Oxygen Species Generation in Live Cells, *Chem. Commun.* **2021**, *57*, 6875-6878. [Link](#)
44. N. Sharma, S. Kumar, V. R. Battula, A. Kumari, A. Giri, A. Patra, K. Kailasam,* Tailored Heptazine-based Porous Polymeric Network as Versatile Heterogeneous Photocatalyst, *Chem. Eur. J.* **2021**, *27*, 10649-10656. [Link](#)
43. A. Giri, N. N. Patil, A. Patra,* Porous Noria Polymer: A Cage-to-Network Approach toward a Robust Catalyst for CO₂ Fixation and Nitroarene Reduction, *Chem. Commun.* **2021**, *57*, 4404-4407. [Link](#)
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41. S. Jaiswal, J. Pathak, S. Kundu, A. Patra,* One-pot Phosphine-free Route for Single-component White Light Emitting CdSe_xS_y Alloy Nanocrystals, *ACS Sustain. Chem. Eng.* **2021**, *9*, 5613-5622. [Link](#)
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38. A. Giri*, A. Sahoo, T. K. Dutta, A. Patra,* Cavitand and Molecular Cage-Based Porous Organic Polymers, *ACS Omega* **2020**, *5*, 28413-28424 ([Invited Minireview](#)).
37. B. Sk, S. Sharma, A. James, S. Kundu, A. Patra,* N-rich Electron Acceptors: Triplet Harvesting in Multichromophoric Pyridoquinoxaline and Pyridopyrazine-based Organic Emitters, *J. Mater. Chem. C* **2020**, *8*, 12943-12950. [Link](#)
36. M. W. Hussain, V. Bhardwaj, A. Giri, A. Chande,* A. Patra,* Multifunctional Ionic Porous Frameworks for CO₂ Conversion and Combating Microbes, *Chem. Sci.* **2020**, *11*, 7910-7920. [Link](#)
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34. V. Kumar,* S. Kundu, B. Sk, A. Patra, Naked-eye Colorimetric Sensor for Methanol and 'Turn-on' Fluorescence Detection of Al³⁺, *New J. Chem.* **2019**, *43*, 18582-18589. [Link](#)
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21. A. Deshmukh, S. Bandyopadhyay, A. James, A. Patra,* Trace Level Detection of Nitroanilines by a Solution Processable Fluorescent Porous Organic Polymer, *J. Mater. Chem. C* **2016**, *6*, 3775-3780 [*received more than 75 citations* (80, [Google Scholar](#) as on 08.05.22)]. [Link](#)
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19. S. Bandyopadhyay, R. Métivier, P. Pallavi, E. Preis, K. Nakatani, K. Landfester, A. Patra,* U. Scherf, Conjugated Polymer Nanoparticle-Triplet Emitter Hybrids in Aqueous Dispersion: Fabrication and Fluorescence Quenching Behavior, *Macromol. Rapid Commun.* **2016**, *37*, 271-277. [Link](#)
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16. F. G. Erko, J. Berthet, A. Patra, R. Guillot, K. Nakatani, R. Métivier, S. Delbaere,* Spectral, Conformational and Photochemical Analyses of Photochromic Dithienylethene: cis-1,2-Dicyano-1,2-bis(2,4,5-trimethyl-3-thienyl)ethene Revisited, *Eur. J. Org. Chem.* **2013**, *34*, 7809-7814.
15. A. Patra,* U. Scherf,* Fluorescent Microporous Organic Polymers: Potential Testbed for Optical Applications, *Chem. Eur. J.*, **2012**, *18*, 10074-10080.

14. **A. Patra,*** R. Métivier,* F. Brisset, K. Nakatani, Photochromic One-Dimensional Nanostructures Based on Dithienylethene: Fabrication by Light Induced Precipitation and Reversible Transformation in the Nanoparticle State, *Chem. Commun.*, **2012**, 48, 2489-2491 (*inside cover page*).
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12. L. Liu, **A. Patra**, U. Scherf, T. Kissel,* Polyfluorene Nanoparticles Coated with Folate-Conjugated Triblock Co-polymer: Effective Agents for Targeted Cell Imaging, *Macromol. Biosci.*, **2012**, 12, 1384-1390.
11. **A. Patra,*** J. Koenen, U. Scherf, Fluorescent Nanoparticles Based on Microporous Organic Polymer Network: Fabrication and Efficient Energy Transfer to Surface-bound Dyes, *Chem. Commun.*, **2011**, 47, 9612-9614.
10. **A. Patra**, R. Métivier, J. Piard, K. Nakatani,* SHG-Active Molecular Nanorods with Intermediate Photochromic Properties Compared to Solution and Bulk Solid States, *Chem. Commun.*, **2010**, 46, 6385-6387.
9. A. Spangenberg, J. A. P. Perez, **A. Patra**, J. Piard, A. Brosseau, R. Métivier* K. Nakatani,* Probing Photochromic Properties by Correlation of UV-Visible and Infra-Red Absorption Spectroscopy: A Case Study with *Cis*-1,2-dicyano-1,2-bis(2,4,5-trimethyl-3-thienyl)ethene, *Photochem. Photobiol. Sci.*, **2010**, 9, 188-193.

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8. **A. Patra,*** Ch. G. Chandaluri, T. P. Radhakrishnan,* Optical Materials Based on Molecular Nanoparticles, *Nanoscale*, **2012**, 4, 343-359 (*Review article*).
7. Ch. G. Chandaluri, **A. Patra**, T. P. Radhakrishnan,* Polyelectrolyte-Assisted Formation of Molecular Nanoparticles Exhibiting Strongly Enhanced Fluorescence, *Chem. Eur. J.*, **2010**, 16, 8699-8706.
6. **A. Patra**, T. P. Radhakrishnan,* Molecular Materials with Contrasting Optical Responses from a Single Pot Reaction and Fluorescence Switching in a Carbon Acid, *Chem. Eur. J.*, **2009**, 15, 2792-2800.
5. **A. Patra**, N. Venkatram, D. N. Rao, T. P. Radhakrishnan,* Optical Limiting in Organic Molecular Nano/microcrystals: Nonlinear Optical Effects Dependent on Size Distribution, *J. Phys. Chem. C*, **2008**, 112, 16269-16274.
4. **A. Patra**, K. Rajesh, T. P. Radhakrishnan,* Optical Materials Based on Molecular Nano/microcrystals and Ultrathin Films, *Bull. Mater. Sci.*, **2008**, 31, 421-427.
3. **A. Patra**, N. Hebalkar, B. Sreedhar, T. P. Radhakrishnan,* Formation and Growth of Molecular Nanocrystals Probed by their Optical Properties, *J. Phys. Chem. C*, **2007**, 111, 16184-16191.
2. **A. Patra**, S. P. Anthony, T. P. Radhakrishnan,* Tris(4-cyanophenyl)amine: Simple Synthesis via Self-assembly and Strong Fluorescence in Solution, Nano/microcrystals and Solid, *Adv. Funct. Mater.*, **2007**, 17, 2077-2084.
1. **A. Patra**, N. Hebalkar, B. Sreedhar, M. Sarkar, A. Samanta, T. P. Radhakrishnan,* Tuning the Size and Optical Properties in Molecular Nano/microcrystals: Manifestation of Hierarchical Interactions, *Small*, **2006**, 2, 650-659.

LIST OF PATENTS:

1. A. Patra, A. Chande, M. W. Hussain, V. Bhardwaj, Nanoporous Organic Framework of Metal Chelated Triaminoguanidinium, Complete specifications for patent (IPR) submitted on 19.03.2019, Application No. 201921010663.
2. A. Patra, B. Sk, M. Sarkar, S. Kundu, Dibenzopyridoquinoxaline based Derivatives, Complete specifications for patent (IPR) submitted on 11.10.2019, Application No. 201921041228.

BOOK CHAPTER:

1. Fundamental mechanisms and requirements of energy storage materials (Chapter 2), S. Sarkar,* T. K. Dutta, A. Sah, A. Patra,* book titled Polymer Blend Nanocomposites for Energy Storage Applications, edited by S. Thomas, Ajitha A R, M. Jaroszewski, to be published by Elsevier, 2022.

LIST OF PROJECTS IMPLEMENTED/ APPROVED:

- 8. Project title:** Long-lived mechanoluminescent molecules to upconversion hybrid composites: emerging materials for information encryption and photocatalysis, Funding agency: **CEFIPRA**, Approved
- 7. Project title:** Redox-Active Porous Organic Polymers for Energy Storage and Conversion (File No.: CRG/2021/008526-G), Funding agency: **SERB**; Duration: 20.12.2021 – 19.12.2024
- 6. Project title:** Cavitand-based Porous Organic Polymer to Molecular Nanocage: Catalysts for Metal-free CO₂ Conversion (File No.: MHRD STARS/APR2019/CS/560/FS), Funding agency: **MHRD-STARS**; Duration: 15.05.2020 – 15.05.2023
- 5. Project title:** Centre for Sustainable Treatment, Reuse and Management for Efficient, Affordable and Synergistic solutions for Water [File No.: DST/TM/WTI/WIC/2K17/82(G)], Funding agency: **DST**; Duration: 11.10.2018 – 11.10.2023
- 4. Project title:** Multifunctional Conjugated Porous Organic Polymers: Emerging Materials for Light Harvesting, Photocatalysis and Energy Storage (File No.: EMR/2017/000233), Funding agency: **DST-SERB**; Duration: 19.03.2018 – 19.06.2021 (*Completed*)
- 3. Project title:** Stimuli-responsive Multifunctional Polymeric Micelles: Potential Scaffold for Drug Loading, Sensing and Light Harvesting (File No.: 01(2878)/17/EMR-II), Funding agency: **CSIR**; Duration: 19.05.2017 – 19.05.2020 (*Completed*)
- 2. Project title:** Exploration of Novel Aggregation Induced Emissive Molecules, Polymers and Nanoassemblies (File No.: 37(2)/14/06/2016-BRNS/37020), Funding agency: **DAE-BRNS**; Duration: 08.08.2016 – 08.08.2019 (*Completed*)
- 1. Project title:** Fluorescent Microporous Organic Polymers: Fabrication and Tuning the Optical Properties (File No.: SB/FT/CS-081/2013), Funding agency: **DST-Fast Track**; Duration: 30.05.2014 – 30.05.2017 (*Completed*)
