

**A. Personal and Contact Information:**

**Name and Address:** Prof. Sanjib K. Patra, Department of Chemistry, IIT Kharagpur, Kharagpur 721302, WB, India

**Designation:** Professor

**E-mail ID and Contact:** [skpatra@chem.iitkgp.ac.in](mailto:skpatra@chem.iitkgp.ac.in); [sanjibpatra.iitk@gmail.com](mailto:sanjibpatra.iitk@gmail.com)

**Contact Number:** +91-3222-283338 (O); +91-3222-283338 (R); +91-9674704930 (Mob)

**Institution/Affiliation:** Indian Institute of Technology Kharagpur, India

**Office & Lab:** Room 503 (O) & 510 (Lab), Tower A, JCG-PCR Science Block

**Date of Birth:** 12<sup>th</sup> February, 1977

**Gender:** Male

**Category:** General

**Group Homepage:** <https://www.skplabiitkgp.com>; <https://www.iitkgp.ac.in/departement/CY/faculty/cy-skpatra>

**B. Academic Qualifications:**

Sl.	Degree	Institution	Year
1.	B.Sc., Chemistry (Hons)	Midnapore College, Vidyasagar University, WB, India	1999
2.	M. Sc.	BHU, Varanasi, India	2001
3.	Ph. D. in Chemistry	Department of Chemistry, IIT Kanpur, India	2007

Ph.D thesis detail: “*Reactivity Studies at Axial Sites of the  $[Ru_2(CO)_4]^{2+}$  Core: C–H Bond Activation, Water Cleavage and C–C Bond Formation*” under the supervision of Prof. Jitendra K. Bera, Department of Chemistry, IIT Kanpur.

**C. Work Experience:**

Sl.	Position & Organization	Nature of Job	Period
1.	Royal Society Postdoctoral Research Fellow, University of Bristol, UK	Postdoctoral research	2007-2008
2.	EPSRC Postdoctoral Research Assistant; University of Bristol, UK	Postdoctoral research	2008-2009
3.	Marie Curie Postdoctoral Research Fellow; University of Bristol, UK	Postdoctoral research	2009-2011
4.	Assistant Professor, IIT Kharagpur	Teaching and research	Dec 2011 to Feb 2018
5.	Associate Professor, IIT Kharagpur	Teaching and research	Feb 2018 to Feb 2026
6.	Professor, IIT Kharagpur	Teaching and research	Feb 2026 to Continuing

**D. Professional recognition/Award/Fellowship:**

Sl.	Name of Award	Awarding Agency	Year
1.	Royal Society International Incoming Postdoctoral Research Fellowship	Royal Society, UK	2007
2.	Marie Curie International Incoming Postdoctoral Research Fellowship	European Union	2009
3.	International Strategic Fund (Full Travel Grant) for academic visit at University of Bristol, UK	University of Bristol, UK	2019

**E. Sponsored Research (Completed):**

Sl	Project title	Sponsored By	From	To	Value (INR)
<b>As PI:</b>					
7.	Developing polypyridyl appended functional polymers to access selfhealing sidechain metallopolymers	SERB, New Delhi	03-01-2020	31-05-2023	31,72,400
6.	Developing luminescent p-type 1,2,3- triazole functionalized $\pi$ -conjugated polymers for detection of trace nitroaromatic explosives	ER& IPR, DRDO, New Delhi	12-12-2018	11-09-2022	41,25,000
5.	Design and synthesis of functionalized terpyridyl based ligands to access multiresponsive smart metallogels	CSIR, New Delhi	01-05-2019	31-01-2024	8,40,000
4.	Perylenebased supramolecular polymers: from controlled structure to controlled function	APEX Committee of SPARC, MHRD, New Delhi	15-03-2019	30-09-2023	65,42,060
3.	Synthesis and application of $\pi$ -conjugated polymers and nonfullerence electron acceptor materials for bulk heterojunction solar cells: towards cheap and efficient renewable energy sources	DST, New Delhi	20-07-2015	19-07-2018	48,66,000
2.	Synthesis and characterization of mainchain metal containing conjugated functional polymers for applications in alternative energy source	SERB, New Delhi	22-08-2013	21-08-2016	24,30,000
1.	Synthesis and application of $\pi$ -conjugated polymers for bulk heterojunction (BHJ) solar cells: towards cheap and efficient renewable energy sources	SRIC, IIT Kharagpur	29-04-2014	28-04-2017	25,00,000
<b>As Co-PI:</b>					
2.	Development of Metallocene Grade Linear Low Density Polyethylene (LLDPE): Catalyst, Process and Polymer	MHRD, New Delhi	15-02-2017	24-08-2023	8,26,00,000
1.	New polymers and polymer composites: design, synthesis and advanced applications	SRIC, IIT Kharagpur	01-05-2014	31-10-2017	2,50,00,000

**F. Research Interest:**

The area of my research is interdisciplinary in nature comprising the fields of synthetic inorganic, organometallic, catalysis and polymer chemistry. One of our research interest is synthesis and characterization of multifunctional organometallic complexes and polymers with special focus on conjugated metallopolymers, side-chain metallopolymers and their emerging applications, which is of intense scientific and technological interest. Our group is also involved in developing metallocene based catalysts for alkene polymerization. Developing transition metal catalysts for sustainable chemistry is one of our current research focus.

Currently, we are interested on the following topics:

- Design and synthesis of functional *wire* like organometallic conjugates
- Design of multifunctional terpyridyl conjugates

- (c) Developing multifunctional side-chain metallopolymers for its emerging application as smart materials
- (d) Genesis of functional self-assembled materials.
- (e) Developing metallocene based Group-4 catalysts for synthesis of LLDPE.
- (f) Designing monometallic and bimetallic transition metal complexes as sustainable photo/redox catalysts for useful transformation such as functionalization of atmospheric CO<sub>2</sub> and degradation of waster polymers to generate valuable feedstock.

### G. Teaching Interest:

While working as assistant and associate professor (Dec, 2011 to present) in department of Chemistry, IIT Kharagpur I have gained extensive teaching experiences both in theory and lab courses in various aspects of inorganic, organometallic, polymer and materials chemistry (core and elective UG/PG level courses).

#### ❖ *New courses developed (at IIT Kharagpur):*

- *Metallopolymers for Smart Applications* (PG/RS level Elective subject): Offered in every Spring semester
- *Metallocene and Metal-carbene based Organometallic Compounds as Industrially Important Advanced Polyolefin Catalysts* (Swayam-NPTEL course, 20 hrs): Running in every year from 2022.

### H. Guidance:

#### ❖ **Postdoc/RA Guidance:**

- Completed: 01
- Continuing: 01

#### ❖ **Ph. D. Guidance:**

- Completed: 05 (solely) + 02 (jointly)
- Continuing: 11 (solely) + 02 (jointly) [Two of them have submitted theses in February, 2026]

#### Completed PhD Theses:

- (i) Dr. Amit Sil (Current position: *Asst. Professor, IIT Mandi*): Synthesis and Characterization of Functional Polypyridyl Conjugates to Access NIR Absorbing Bimetallic Complexes, Sensory Applications and Soluble Emissive Polymers
- (ii) Dr. Sk. Najmul Islam (Current position: *Asst. Professor, Midnapore College, Autonomous*): Synthesis and Characterization of Fluorene Based  $\pi$ -Conjugated Oligomers and Polymers for Optoelectronic and Sensory Applications
- (iii) Dr. Sourav Saha Roy (Current position: *Research Manager-Analytical Research, Sun Pharmaceuticals Industries Ltd.*): Synthesis and Characterization of Organometallic Wire-like Bimetallic Complexes: Modulation of Electrochemical Communication between Two Redox Termini
- (iv) Dr. Apurba Maity (Current position: *Researcher, Surface Engineering Research Group, Tata Steel Limited*): Design, Synthesis and Characterization of Borondipyromethane (BODIPY) Based Conjugates to Access Organic Dye Laser, NIR Absorption and Sensory Applications
- (v) Dr. Dipanjan Giri (Current position: *Application Specialist, Malvern Panalytical Application Lab, Aimil Ltd*): Design, Synthesis and Characterization of  $\pi$ -Conjugated Homopolymers and A-alt-B type Copolymers for Applications in Chemosensing and Dye-Sensitized Solar Cells.

#### ❖ **M.Sc. project thesis (year-long) Guidance:**

- Completed: 27
- Continuing: 02

**I. Membership of Professional Bodies:**

- Chemical Research Society of India, CRSI (Life membership - LM 1494)
- The Society of Polymer Science, SPSI (Life membership - KHR 081)
- Member of Royal Society of Chemistry (MRSC)
- Fellow of Indian Chemical Society (FICS, Life membership - F/8222)
- Materials Research Society of India (Life membership - LMB 3126)
- The Indian Science Congress Association (Life membership - L39281)
- Member of Chirantan Rasayan Sanstha (CRS) (Life membership - 134)
- *Secretary* of The Society of Polymer Science, SPSI, Kharagpur Chapter (2023-2025)

**J. Editorial/Editorial Advisory Board Member:**

- Editorial Advisory Board (EAB) member of the "*Organometallics*" (American Chemical Society's publication): Jan, 2023 to Dec, 2025 (Three years)
- Early Career Researcher (ECR) Editorial Board Member of *Wiley Polymer Journals* (*Macromolecular family, Journal of Polymer Science, and Journal of Applied Polymer Science*): Jan, 2026 to Dec, 2028 (Three years)
- Editorial Board Member of *Scientific Reports* (*Springer Nature*): July, 2025 to continuing.

**K. Departmental Responsibilities:**

While working as assistant and associate professor, I was in various important departmental committees and academic responsibilities such as:

- Departmental Administrative Committee (DAC): 2 years
- Departmental Purchase Committee: 3 years
- Active member in creating infrastructure and *state-of-the-art* Chemistry Labs in new Chemistry building (PCR & JCG Science Block): 5 years
- Faculty Advisor (of 5-year Intg. and 2-year-lateral MSc students): 5 years
- Coordinator for 1<sup>st</sup> year Chemistry Theory and Lab: 2 years
- Research Scholar Coordinator: 2 years
- PG Committee/PhD Selection: 2 years
- Professor-in-Charge of MSc Organic/Inorganic Chemistry Teaching Lab: 6 years
- PIC of various important instrumental facilities such as SCXRD, LCMS, TD-GPC, NMR (500 MHz, 400 MHz), AFM, Rheometer *etc.*
- Member in Departmental Syllabus Committee for new BS-MS curriculum.
- Departmental Safety Advisor: 2 years
- Member of Departmental PG/PhD and Postdoc selection committee: 3 years (on going)
- Member of Departmental Outreach activity: 3 years (on going)
- Overall PIC of Departmental Instruments/Research facility: 3 years (on going)

**L. Institute Responsibilities:**

- Warden, MMM Hall: 01-01-2022 30-09-2025 (3 years & 9 months)
- Co-chairman, Spring Fest-2024
- Co-chairman, Spring Fest-2025
- Warden, Patel Hall: 31-10-2017 to 31-12-2019 (2 years)
- Assistant Warden, Patel Hall: 01-10-2014 to 30-10-2017 (3 years)

- Member of Various committees of Hall management Centre (2022-2025)
- Member of Convocation organizing team (2014, 2015, 2025)
- Co-PIC of FTIR (2023-2025)
- PIC of FTIR and FTIR-Microscopy facility, CRF (2025 to continuing)

#### M. Other Academic Responsibilities:

- Regular Reviewer of ACS, RSC, Elsevier, Springer and Wiley publications
- External PhD thesis examiner of various IITs, NITs, CSIR Labs, and Universities

#### N. Organizing Symposium and Institute Lectures (as Conveners/Coordinators):

- **Symposium (as Convener/Organizing Secretary):**

5. *National Science Day Celebration and Outreach Programme-2026*, Dept. of Chemistry, IIT Kharagpur, 28<sup>th</sup> Feb., 2026.
4. *Organizing Secretary: 21<sup>st</sup> Modern Trends in Inorganic Chemistry (MTIC-XX1)*, Symposium ID: IIT/CEP/CON/2023-2024/CY/143, IIT Kharagpur, Duration: 14–17 Dec., 2024, Participants-480.
3. *Convener: Functional Smart & Supramolecular Materials (FSSM-2020)*, Symposium ID: IIT/CEP/SYM/SYM/2019-2020/CY/131, Gargi Auditorium, IIT Kharagpur, Duration: 29-30 Jan, 2020, Participants-150, Organized under the aegis of SPARC, MHRD, India.
2. *Convener: Recent Advances in Functional Inorganic & Nanomaterials Chemistry (RAFINC-2017)*, Symposium ID: CEP/SIC/CONF-26/17-18/AC/53, One-day Symposium, 11<sup>th</sup> November, 2017, Gargi Auditorium, IIT Kharagpur.
1. *Convener: Sir J. C. Ghosh Memorial Lecture, 2013*, 20th September, 2013, Gargi Auditorium, IIT Kharagpur (Speaker: Prof. K. N. Ganesh).

- **Coordinator: Institute Lectures and Short course (under SPARC program)**

3. Speaker: Prof. Ian Manners, University of Victoria (Canada)  
Title of the talk: “*Functional Nanoscale and Hierarchical Materials by “Living” Crystallization-Driven Self-Assembly*”, Date and Venue: 3<sup>rd</sup> Feb, 2020, S. N. Bose Auditorium, IIT Kharagpur.
2. Speaker: Prof. Charl F. J. Faul of University of Bristol, UK  
Title of the talk: “*Trying to solving global problems, with a pinch of salt!*” Date and Venue: 5<sup>th</sup> Dec, 2019, S. N. Bose Auditorium, IIT Kharagpur.
1. Short Course: Prof. Charl F. J. Faul, University of Bristol, UK  
Topic: “*From Project to Publication*”. Date and Venue: 27-28 Jan, 2020 at Sir J. C. Ghosh Seminar Room, Dept. of Chemistry. Total participants: 90 (PhD./PDF/Master students).

- **Hosting International Faculty (under SPARC programme)**

1. Prof. Faul’s visit to IIT KGP: 20<sup>th</sup> Nov to 22<sup>nd</sup> Nov, 2022; 22<sup>nd</sup> Jan to 2<sup>nd</sup> Feb, 2020 and 2<sup>nd</sup> Dec to 6<sup>th</sup> Dec, 2019
2. Prof. Ian Manners’ visit to IIT KGP: 30<sup>th</sup> Jan to 5<sup>th</sup> Feb, 2020  
Prof. Charl F. J. Faul of University of Bristol, UK was the foreign PI, and Prof. Ian Manners (h-index = 125) of University of Victoria (Canada) was the foreign co-PI of the SPARC grant. The project was on the area of “*functional inorganic/organic materials*”.

- **Visiting abroad for Academic Visit (from IIT Kharagpur):**

Duration: 23<sup>rd</sup> July to 30<sup>th</sup> July, 2019; Visiting Institute: University of Bristol, UK.

Funding: *International Strategic Fund (Full Travel Grant)* by **University of Bristol** (UK) for academic visit.

**O. Patents Filed:**

1. Title: "A Simplified and Milder Methodology for the Selective Synthesis of Bay-substituted Dibrominated Perylene Diimide (PDI) To Access Functional PDI-conjugates" by Poulami Panja and Sanjib K. Patra. *Provisional Patent Application No.: 202431037274.*

**P. Publications in peer-reviewed international journals:**

- Published: 63 (from IIT Kharagpur: 41)
- Submitted/In revision: 4

**❖ From IIT Kharagpur:**

64. "Design and Synthesis of Titanium(IV) Complexes with Ethylene Bridged Fluorenyl-Phenoxyimine Ligands for Ethylene Polymerization: Effect of Ligand Architecture on Catalyst Activity Catalysis Today." Priyanka Ghar, Soumita Basu Mallick, Narendra Singh Choudhary, Suman Dolai, Narayan C. Pradhan\* and Sanjib K. Patra\*. *Catal. Today*, 2026, *In revision*.
63. "Titanium(IV) Complexes Featuring Fluorenyl-Tethered Oxazoline Ligands: Design, Synthesis and Catalytic Performance in Ethylene Polymerization." Priyanka Ghar, Soumita Basu Mallick, Narendra Singh Choudhary, Suman Dolai, Narayan Chandra Pradhan\* and Sanjib K. Patra\*. *J. Polym. Res.*, 2026, 33 (41), 1-16.
62. "Novel Bifluorene-bridged Ti(IV) Complex via Titanium-mediated in situ C-C Coupling: Expanding the Structural Landscape of Olefin Polymerization Catalysts." Soumita Basu Mallick, Suman Dolai, Priyanka Ghar, Narendra Singh Choudhary, Narayan C. Pradhan\* and Sanjib K. Patra\*. *Organometallics*, 2025, *In Press*. (**Highlighted as Front Cover**)
61. "Bench-stable Fe(III)-bimetallic photocatalyst for controlled polymerization of acrylates via LMCT excited state." Suman Dolai, Soumyajit Karmakar, Premnath Das, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Organometallics*, 2025, 44, 2481-2486. (**Highlighted as Front Cover**)
60. "Highly selective Cu<sup>2+</sup>-coordination triggered multi-stimuli responsive and functional metallogel of bis-terpyridyl based low molecular weight (LMW) gelator." Poulami Panja, Utsav Ghosh, Amit Sil and Sanjib K. Patra\*. *Dalton Trans.*, 2025, 54, 14687-14700. (**Highlighted as Back Cover**)
59. "Strategic synthesis of cyclopentadienyl-fluorenyl ansa-zirconocene(IV) complexes for borate-activated ethylene homo-polymerization and ethylene/1-hexene co-polymerization." Soumita Basu Mallick, Priyanka Ghar, Narendra Singh Choudhary, Suman Dolai, Narayan C. Pradhan\* and Sanjib K. Patra\*. *Macromol. Chem. Phys.*, 2025, 226, e00270.
58. "Redox-Assisted Controlled Radical Polymerization of Acrylates by Strategically Designed Ru(II)-Fe(II) Heterobimetallic Conjugate." Suman Dolai, Soumyajit Karmakar, Souvik Kundu, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Chem. Eur. J.*, 2025, 31, e01951. (**Highlighted as Cover Feature**)
57. "Unveiling versatile properties of a N,N'-bis(biphenyl)amino tailored stilbene-terpyridyl conjugate and its multifunctional role in fluorescence sensing." Amit Sil, Suman Dolai, Chhanda Mondal and Sanjib K. Patra\*. *Spectrochim. Acta, Part A*, 2025, 343, 126595.
56. "Design and Synthesis of Highly Luminescent BODIPY-Fluorene Based A-alt-B Type  $\pi$ -Conjugated Polymers for the Selective and Trace Detection of Nitroaromatics." Apurba Maity, Supriya Das, Sk Najmul Islam and Sanjib K. Patra\*. *Chem. Asian. J.*, 2025, 20, e202401528 (*Invited Article*).
55. "Hole and Electron Mobility in Sulfur- and BN-Functionalized Perylene Diimides: A Computational Study." Sanjukta Parida, Sanjib K. Patra\* and Sabyashachi Mishra\*. *J. Phys. Chem. C.*, 2025, 129, 10264.
54. "Depolymerization by transition metal complexes: strategic approaches to convert polymeric waste to feedstocks." Suman Dolai, Chinmoy K. Behera and Sanjib K. Patra\*. *Dalton Trans.* 2025, 54, 3977 (*Perspective, Invited Article*). *Selected as HOT Article; Selected under the Themed Collection of "2025 Frontier and Perspective articles"*.

53. "Diruthenium(II) Diacetylide Organometallic Complexes with Thienylethynyl Bridging Units: Syntheses, Characterization and Electrochemical Properties." Sourav Saha Roy, Supriya Das and Sanjib K. Patra\*. *J. Chem. Sci.*, 2025, 137, 19 (Invited Article).
52. "Structure-Spectroscopy Correlation in the Self-assembled Perylene-diimide based dimers via Inter-Chromophore Coupling." Sanjukta Parida, Sanjib K. Patra\* and Sabyashachi Mishra\*. *J. Phys. Chem. B.*, 2024, 128, 40, 9873.
51. "Design, synthesis and characterization of organometallic BODIPY-Ru(II) dyads: Redox and photophysical properties with singlet oxygen generation capability." Apurba Maity, Suman Dolai, Vipin Kumar Mishra, Sabyashachi Mishra, and Sanjib K. Patra\*. *Inorg. Chem.* 2024, 63, 4839-4854.
50. "Carbazole-alt-fluorene based  $\pi$ -conjugated Cu(II)-metallopolymer with pendent diketopyrrolopyrrole unit as highly selective and sensitive turn-on fluorescent probe for detection of amino acids." Dipanjan Giri, Chinmoy K. Behera, Sagar Kumar Raut, Sanjib K Patra. *Polymer* 2024, 296, 126751.
49. "A sequential Friedländer and anionic benzannulation strategy for the regiodefined assembly of unsymmetrical acridines." Suman Bhatta, Bidyut Kumar Senapati, Sanjib K. Patra\*, Samik Nanda\*. *Org. Biomol. Chem*, 2023, 21, 8727-8738.
48. "Design and synthesis of a push-pull arylene-vinylene terpyridyl conjugate: multifunctional behaviors exhibited by a single molecule". Amit Sil, Utsav Ghosh, Suman Dolai, Apurba Maity, Soumitra Manna and Sanjib K. Patra\*. *Mater. Adv.* 2022, 3, 5497-5503.
47. "Self-Assembling Behaviour of Perylene, Perylene Diimide, and Thionated Perylene Diimide Deciphered through Non-Covalent Interactions". Sanjukta Parida, Sanjib K. Patra\* and Sabyashachi Mishra\*. *ChemPhysChem.* 2022, 23, e202200361.
46. "Diketopyrrolopyrrole anchored carbazole-alt-thiophene based Fe<sup>3+</sup>-coordinated metallopolymer for the selective recognition of ATP". Dipanjan Giri, Sagar K. Raut, Chinmoy K. Behera and Sanjib K. Patra\*. *Polymer*, 2022, 253, 124951.
45. "Modulation of Electrochemical and Spectroscopic Properties in Ru(II)-Terpyridyl End-capped Homobimetallic Organometallic Complexes by Varying  $\pi$ -Conjugated Organic Spacers" Amit Sil, Sourav Saha Roy, Vipin K. Mishra, Sk. Najmul Islam, Sabyashachi Mishra\* and Sanjib K. Patra\*. *ChemistrySelect*, 2022, 7, e202200152.
44. "1,2,3-Triazolyl functionalized thiophene, carbazole and fluorene based A-alt-B type  $\pi$ -conjugated copolymers for sensitive and selective detection of aqueous and vapor phase nitroaromatics (NACs)". Dipanjan Giri and Sanjib K. Patra\*. *J. Mater. Chem. C*, 2020, 8, 14469-14480.
43. "Role of Substituents at 3-position of Thienylethynyl Spacer on Electronic Properties in Diruthenium(II) Organometallic Wire-like Complexes". Sourav Saha Roy, Sabyasachi Roy Chowdhury, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Chem. Asian. J.*, 2020, 15, 3304-3313.
42. "Design and Synthesis of Perfluoroalkyl Decorated BODIPY Dye for Random Laser Action in a Microfluidic Device". Apurba Maity, Anirban Sarkar, Shivakiran Bhaktha B. N.\* and Sanjib K. Patra\*. *New J. Chem.*, 2020, 40, 14650-14661.
41. "Diketopyrrolopyrrole/Perylene-diimide and Thiophene based D- $\pi$ -A Low Bandgap Polymer Sensitizers for Application in Dye Sensitized Solar Cells." Dipanjan Giri, Sagar K. Raut and Sanjib K. Patra\*. *Dyes Pigm.*, 2020, 174, 1080302.
40. "Effect of Therodynamic Glass Transition on Charge Transport Properties in a Benzodithieno-imidazole  $\pi$ -Conjugated polymer:Fullerene Blend". Abdullah Bin Rahaman, Dipanjan Giri, Atri Sarkar, Sanjib K. Patra\* and Debamalya Banerjee\*. *Mater. Res. Express*, 2019, 6, 115114.
39. "Synthesis and Characterization of Diferrocenyl Conjugates: Varying  $\pi$ -Conjugated Bridging Ligands and its Consequence on Electrochemical Communication". Sourav Saha Roy and Sanjib K. Patra\*. *Eur. J. Inorg. Chem.*, 2019, 2193-2201.
38. "A Water-soluble BODIPY Based 'OFF/ON' Fluorescence Probe for the Detection of Cd<sup>2+</sup> Ions with High Selectivity and Sensitivity". Apurba Maity, Utsav Ghosh, Dipanjan Giri, Devdeep Mukherjee, Tapas Kumar Maiti and Sanjib K. Patra\*. *Dalton Trans.*, 2019, 48, 2108-2117.

37. "Highly Emissive Fluorene and Thiophene Based  $\pi$ -Conjugated A-alt-B Copolymers: Synthesis, Characterization and Electroluminescence Properties". Sk Najmul Islam, Narendar Gogurla, Dipanjan Giri, Samit K. Ray\* and Sanjib K. Patra\*. *Journal of Luminescence*, 2019, 208, 509-518.
36. "Synthesis, Structure, Electrochemical and Spectroscopic Properties of Hetero-Bimetallic Ru(II)/Fe(II)-Alkynyl Organometallic Complexes". Amit Sil, Utsav Ghosh, Vipin Kumar Mishra, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Inorg. Chem.*, 2019, 58, 1155-1166.
35. "Diruthenium(II) capped oligothiophenylethynyl bridged highly soluble organometallic wires exhibiting long-range electronic coupling". Sourav Saha Roy, Amit Sil, Dipanjan Giri, Sabyasachi Roy Chowdhury, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Dalton Trans.*, 2018, 47, 14304-14317. (Selected for Themed Issue: "Molecular Metal-containing Soft Materials")
34. "Synthesis, structure, photophysical and electrochemical properties of Ru(II) complexes of arylene-vinylene terpyridyl conjugates". Amit Sil, Sabyasachi Roy Chowdhury, Sabyashachi Mishra\* and Sanjib K. Patra\*. *Dalton Trans.*, 2018, 47, 9877-9888.
33. "Poly(benzodithieno-imidazole-alt-carbazole) based  $\pi$ -conjugated copolymers: Highly selective and sensitive turn-off fluorescent probes for Hg<sup>2+</sup>". Dipanjan Giri, Arindam Bankura and Sanjib K. Patra\*. *Polymer*, 2018, 158, 338-353.
32. "Ruthenium(II) complexes of 4'-(aryl)-2,2':6,2"-terpyridyl ligands as simple catalysts for transfer hydrogenation of ketones". Apurba Maity, Amit Sil and Sanjib K. Patra\*. *Eur. J. Inorg. Chem.* 2018, 4063-4073.
31. "A Highly Selective, Sensitive and Reusable BODIPY Based 'OFF/ON' Fluorescence Chemosensor for the Detection of Hg<sup>2+</sup> Ions". Apurba Maity, Amit Sil, Subhra Nad and Sanjib K. Patra\*. *Sensors & Actuators: B. Chemical*, 2018, 255, 299-308.
30. "Synthesis and characterization of 1,2,3-triazole appended polythiophene based reusable fluorescent probes for the efficient detection of trace nitroaromatics". Dipanjan Giri, Sk Najmul Islam and Sanjib K. Patra\*. *Polymer*, 2018, 134, 242-253.
29. "Terpyridyl appended poly(metaphenylene-alt-fluorene)  $\pi$ -conjugated fluorescent polymers: Highly selective and sensitive turn off probes for the detection of Cu<sup>2+</sup>". Amit Sil, Sk Najmul Islam and Sanjib K. Patra\*. *Sensors & Actuators: B. Chemical*, 2018, 254, 618-628.
28. "Arylene-vinylene Terpyridine Conjugates: Highly Sensitive, Reusable and Simple Fluorescent Probes for the Detection of Nitroaromatics". Amit Sil, Dipanjan Giri and Sanjib K. Patra\*. *Journal of Materials Chemistry C*, 2017, 5, 11100-11110.
27. "A Mild Rhodium Catalyzed Direct Synthesis of Quinolones from Pyridones: Application in the Detection of Nitroaromatics". Aniruddha. Biswas, Dipanjan Giri, Debapratim. Das, A. Dey, Sanjib. K. Patra\* and Rajarshi Samanta\*. *Journal of Organic Chemistry*, 2017, 82, 10989-10996.
26. "Achieving Yellow Emission by Varying Donor/Acceptor Units in Rod-shaped Fluorenyl-alkynyl Based  $\pi$ -Conjugated Oligomers and Their Binuclear Gold(I) Alkynyl Complexes". Sk Najmul Islam, Amit Sil and Sanjib K. Patra\*. *Dalton Trans.*, 2017, 46, 5918-5929.
25. "Synthesis, Photophysical and Concentration Dependent Tunable Lasing Behavior of 2,6-Diacetylnyl Functionalized BODIPY Dyes". Apurba Maity, Anirban Sarkar, Amit Sil, Shivakiran Bhaktha B. N\*, and Sanjib K. Patra\*. *New Journal of Chemistry*, 2017, 41, 2296-2308.
24. "A phenylene-vinylene terpyridine conjugate fluorescent probe for distinguishing Cd<sup>2+</sup> from Zn<sup>2+</sup> with high sensitivity and selectivity". Amit Sil, Apurba Maity, Dipanjan Giri and Sanjib K Patra\*. *Sensors & Actuators: B. Chemical*, 2016, 226, 403-411. (IF=5.401)
23. "Benzodithieno-imidazole based  $\pi$ -conjugated fluorescent polymer probe for selective sensing of Cu<sup>2+</sup>". Dipanjan Giri and Sanjib K Patra\*. *RSC Advances*, 2015, 5, 79011-79021.

❖ **From University of Bristol, UK (Postdoctoral work):**

22. "Tetragonal and Helical Morphologies from Polyferrocenylsilane block Polyelectrolytes via Ionic Self-assembly" R. Ahmed, S. K. Patra, I. W. Hamley, I. Manners\*, C. F. J. Faul\*. *J. Am. Chem. Soc.*, 2013, 135, 2455-2458.

21. "Dimensional Control of Block Copolymer Nanofibers with a  $\pi$ -Conjugated Core: Crystallization-Driven Solution Self-Assembly of Amphiphilic Poly(3-hexylthiophene)-b-poly(2-vinylpyridine)" J. Gwyther, J. B. Gilroy, P. Rupar, D. J. Lunn, E. Kynaston, S. K. Patra, G. Whittell, M. A. Winnik\*, and I. Manners\*. *Chem. Eur. J.*, 2013, 19, 9186-9197.
20. "The Coordination and Polymerization of Cyclic 1,3-Dienes by Gold(I) Cations." R. A. Sanguramath, S. K. Patra, M. Green and C. A. Russell\*. *Chem. Commun.* 2012, 48, 1060-1062.
19. "Fiber-like Micelles via the Crystallization-Driven Solution Self-Assembly of Poly(3-hexylthiophene)-block-Poly(methylmethacrylate) Copolymers" J. B. Gilroy, D. J. Lunn, S. K. Patra, G. R. Whittell, M. A. Winnik\* and I. Manners\*. *Macromolecules*, 2012, 45, 5806-5815.
18. "Responsive Vesicles via the Self-Assembly of Crystalline-Coil Polyferrocenylsilanes-b-poly(ethylene oxide) Star Block Copolymers" F. H. Schacher, J. Elbert, S. K. Patra, S. F. M. Yusoff, M. A. Winnik\* and I. Manners\*. *Chem. Eur. J.*, 2012, 18, 517-525.
17. "Cylindrical Micelles of Controlled Length with a  $\pi$ -Conjugated Polythiophene Core via Crystallization-Driven Self-Assembly." S. K. Patra, R. Ahmed, G. R. Whittell, D. J. Lunn, E. L. Dunphy, M. A. Winnik and I. Manners\*. *J. Am. Chem. Soc.*, 2011, 133, 8842-8845.
16. "Main-Chain Heterobimetallic Block Copolymers: Synthesis and Self-Assembly of Polyferrocenylsilane-b-polycobaltoceniumethylene." J. B. Gilroy, S. K. Patra, J. M. Mitchels, M. A. Winnik\* and I. Manners\*. *Angew. Chem. Int. Ed.* 2011, 50, 5851-5855. (VIP Article).
15. "Hierarchical Organometallic Materials: Self-Assembly of Organic-Organometallic Polyferrocenylsilane Block Polyelectrolyte-Surfactant Complexes in Bulk and in Thin Films." R. Ahmed, S. K. Patra, L. Chabanne, C. J. Faul\* and I. Manners\*. *Macromolecules* 2011, 44, 9324-9334.
14. "Organic-Metalloblock Copolymers via Photocontrolled Living Anionic Ring-Opening Polymerization." L. Chabanne, I. Matas, S. K. Patra and I. Manners\*. *Polym. Chem.*, 2011, 2, 2651-2660.
13. "Photocontrolled Living Anionic Polymerization of Phosphorus-Bridged [1]Ferrocenophanes: A Route to Well-Defined Polyferrocenylphosphine (PFP) Homopolymers and Block Copolymers." S. K. Patra, G. R. Whittell, S. Nagiah, C.-L. Ho, W.-Y. Wong\* and I. Manners\*. *Chem. Eur. J.* 2010, 16, 3240-3250.
12. "Photocontrolled Living Anionic Polymerization of Silicon-Bridged [1]Ferrocenophanes with Fluorocarbon Substituents: Synthesis and Characterization of Fluorinated Polyferrocenylsilane (PFS) Homopolymers and Block Copolymers." G. S. Smith, S. K. Patra, L. Vanderark, S. Saithong J. P. H. Charmant and I. Manners\*. *Macromol. Chem. Phys.* 2010, 211, 303-312.
11. "Reactions of Amine- and Phosphine-borane Adducts with Frustrated Lewis Pair Combinations of Group 14 Triflates and Sterically Hindered Nitrogen Bases." G. R. Whittell, E. I. Balmond, A. P. M. Robertson, S. K. Patra, M. F. Haddow and I. Manners\*. *Eur. J. Inorg. Chem.* 2010, 3967-3975.

❖ **From IIT Kanpur (Doctoral work):**

10. "Mapping the Transformation [ $\text{Ru}^{\text{II}}(\text{CO})_3\text{Cl}_2$ ]<sub>2</sub> to [ $\text{Ru}^{\text{I}}_2(\text{CO})_4$ ]<sup>2+</sup>: Implications in Binuclear Water-Gas Shift Chemistry." M. Majumdar, A. Sinha, T. Ghatak, S. K. Patra, N. Sadhukhan, W. S. M. Rahaman and J. K. Bera\*. *Chem. Eur. J.* 2010, 16, 2574-2585.
9. "A Rare Unsupported Iridium(II) Dimer, [ $\text{IrCl}_2(\text{CO})_2$ ]<sub>2</sub>" S. K. Patra, S. M. W. Rahaman, M. Majumdar, A. Sinha and J. K. Bera\*. *Chem. Commun.* 2008, 22, 2511-2513 (Cover Article).
8. "Role of Axial Donors in the Ligand Isomerization Processes of Quadruply Bonded Dimolybdenum(II) Compounds." M. Majumdar, S. K. Patra, M. Kannan, K. R. Dunbar and J. K. Bera\*. *Inorg. Chem.* 2008, 47, 2212-2222. (IF=4.857, Citation 30)
7. "C-C Bond Forming Reaction Through Aldol-Type Addition Mediated by [ $\text{Ru}_2(\text{CO})_4$ ]<sup>2+</sup> Core." S. K. Patra and J. K. Bera. *Organometallics* 2007, 26, 2598-2603.
6. "Oxidative route to polyoxomolybdates from quadruply bonded [ $\text{Mo}^{\text{II}}\equiv\text{Mo}^{\text{II}}$ ] precursor: Structural characterization of a tetranuclear cluster [ $\text{Mo}_4\text{Cl}_5\text{O}_8(\text{pyNP})_2$ ] (pyNP = (2-(2-pyridyl)1,8-naphthyridine)." M. Majumdar, S. K. Patra and J. K. Bera\*. *Polyhedron* 2007, 26, 1597-1602.

5. "Effects of Axial Coordination on the Ru-Ru Single Bond in Diruthenium Paddlewheel Complexes." S. K. Patra, N. Sadhukhan and J. K. Bera\*. *Inorg. Chem.* 2006, 45, 4007-4015.
4. "Axial Interaction of the  $[\text{Ru}_2(\text{CO})_4]^{2+}$  Core with the Aryl C-H Bond: Route to Cyclometalated Compounds Involving Metal-Metal Bonded Diruthenium Unit." S. K. Patra and J. K. Bera\*. *Organometallics* 2006, 25, 6054-6060.
3. "Ligand Assisted Homolytic Cleavage of the Ru-Ru Single Bond in  $[\text{Ru}_2(\text{CO})_4]^{2+}$  Core and the Chemical Consequence." S. K. Patra, M. Majumdar and J. K. Bera\*. *J. Organomet. Chem.* 2006, 691, 4779-4787.
2. "Novel Heterobimetallic Metallamacrocycles Based on the 1,1'-Bis(1,8-naphthyrid-2-yl)ferrocene ( $\text{FcNP}_2$ ) Ligand: Structural Characterization of the Complexes  $[\{\text{M}(\text{FcNP}_2)\}_2]^{2+}$  ( $\text{M} = \text{Cu}^{\text{I}}, \text{Ag}^{\text{I}}$ ) and  $\{\text{MCl}_2(\text{FcNP}_2)\}_4$  ( $\text{M} = \text{Zn}^{\text{II}}, \text{Co}^{\text{II}}$ )." N. Sadhukhan, S. K. Patra, K. Sana and J. K. Bera\*. *Organometallics* 2006, 25, 2914-2916.
1. "Syntheses and Reactivity Studies of Solvated Diruthenium Acetonitrile Complexes." J. K. Bera\*, E. J. Schelter, S. K. Patra, J. Bacsá and K. R. Dunbar\*. *Dalton. Trans.* 2006. 4011-4019.

### Q. Selected Invited Talks/Oral Presentations (from 2018):

#### • In India:

15. "Ru(II)-Fe(II) heterobimetallic conjugates: unveiling redox-assisted catalysis for controlled polymerization". 22<sup>nd</sup> Modern Trends in Inorganic Chemistry (MTIC-XXII), Organized by University of Delhi, Delhi, December 18-21, 2025 (*Invited Talk*).
14. "From Awareness to Action: Our Modest Contribution to a Global Issue by Developing Sustainable Degradation Strategy of PET using Simple Air-Stable Ru(II) Catalysts". ANRF sponsored two-day national conference in Sustainable Chemistry: Bridging Innovation and Environmental Responsibility (SCBIER-2025), Organized by Mugberia Gangadhar Mahavidyalaya, Purba Medinipur, WB, December 4-5, 2025 (*Invited Talk*).
13. "Designing  $\pi$ -Conjugated Organometallic Conjugates for Photo/Redox Catalysis." 30th International Conference on Organometallic Chemistry (ICOMC 2024), Organized by IIT Kanpur, IIT Bombay and IISER Kolkata, Agra, India, July 14-18, 2024 (*Invited Talk*).
12. "Designing Cu(I/II) Complexes for Catalytic Fixation of CO<sub>2</sub>." CRS Symposium 2024- Rasayan 19: Science Beyond Boundary: Invention, Discovery, Innovation and Society, Organized by IISER Kolkata, July 29-31, 2024 (*Invited Talk*).
11. "Designing of  $\pi$ -Conjugated Organometallic Compounds with Targeted Optical/Electrochemical and Catalytic Properties". National Conference on Recent Trends in Chemical Sciences (RETICS-2024), Organized by School of Chemistry, Sambalpur University, March 1-3, 2024 (*Invited Talk*).
10. "Design and Development of  $\pi$ -Conjugated Polymers as Efficient Probes for Detection of Environmentally and Biologically Concerned Analytes". International Conference on Polymer Science and Technology (SPSI-MACRO-2023), Organized by Society of Polymer Science in India (SPSI) and IIT Guwahati, December 10-13, 2023 (*Invited Talk*).
9. Design and Synthesis of Arylene-vinylene Terpyridyl Conjugates as Multifunctional Molecular Materials". Exploring Molecules, Materials and Bio-materials for Sustainable Society (EMBSS-2022), Symposium organized by Midnapore College, April 11-13, 2022 (*Invited Talk*).
8. "Designing Multifunctional Arylene-vinylene Terpyridyl Conjugates for Detection of Environmentally Concerned Analytes." Recent Trends in Chemical Sciences 2021 (RTCS-2021), Environmental Section, 58th Annual Convention of Chemists, Indian Chemical Society (ICS), December 22-23, 2021 (*Invited Lecture*, online).
7. "Wire-like Transition Metal-Alkynyl Complexes: Design, Synthesis, Optical/Electrochemical Properties and Future Prospect". Refresher Course on Chemistry Organized by UGC - Human Resource Development Centre, University of Hyderabad, November 12, 2021 (*Invited Lecture*, online).
6. " $\pi$ -Conjugated Polymers as Efficient Probes for Detection of Nitroaromatics (NACs) Explosives". Advances in Polymer Science & Rubber Technology (APSRT 2019, International Conference), September 24-27, 2019, IIT Kharagpur (*Invited Talk*).

5. "Wire-like Ru(II)-Alkynyl Binuclear Complexes with  $\pi$ -Conjugated Backbone: Design, Synthesis, and Optical/Electrochemical Properties", Inorganic Chemistry Discussion Meeting, IISER Kolkata, January 15, 2020 (*Invited Talk*).
4. "Developing Luminescent p-type Triazole Functionalized  $\pi$ -Conjugated Polymers for Detection of Trace Nitroaromatics". 1st National Workshop on Explosives Detection (NWED-2018), December 14-15, 2018, HEMRL, Pune (*Invited Talk*).

• **Abroad:**

3. "Designing Cu(I/II) Complexes for catalytic Fixation of Atmospheric CO<sub>2</sub>" (*Oral Presentation*). 9th Asian Conference on Coordination Chemistry 2024 (ACCC-9), Chulalongkorn University & Suranaree University of Technology, Bangkok, Thailand, Feb 19-22, 2024 (*Oral Presentation*).
2. "Design and Synthesis of NIR Absorbing Wire-like Ru(II)-Alkynyl Binuclear Complexes Bridged by  $\pi$ -Conjugated Backbone". 7th Asian Conference on Coordination Chemistry 2019 (ACCC7 2019), Malaysian Institute of Chemistry, Kuala Lumpur, Malaysia, Oct 15-19, 2019 (*Oral Presentation*).
1. Wire-like Ru(II)-Alkynyl Organometallic Complexes with  $\pi$ -Conjugated Bridging Backbone: Design, Synthesis and Optical/Electrochemical Properties, University of Bristol, 29th July, 2019 (*Invited Talk*).