



Dr. Subhamay Pramanik

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Personal Profile	Date of birth	August 22, 1988
	Nationality	Indian
	Gender	Male
	Marital Status	Married (Spouse: Dr. Sandeep Kaur)
	Child	Daughter: Shanaya Pramanik

Research Experience and Skills

Strong experience in synthetic physical-organic and material chemistry; polymer upcycling; small molecule, COFs, and porous material syntheses; fluorescent molecules, nanoparticle synthesis; catalysis; single crystal development of organic and inorganic complexes; supramolecular and coordination chemistry. I have expertise in running NMR Spectroscopy (2D, multinuclear, DOSY), mass spectrometry (ESI, ASAP, OPSI, ICP-MS, ICP-OES, GC), UHPLC, UV-Vis, Fluorescence, Karl Fisher, FT-IR, DLS, TGA/DSC, SEM, P-XRD.

I have been trained in radiological work (radiological worker-II). I will be able to conduct lab work with radioisotopes.

Specialization in separations, characterization, and crystallization of rare earth elements (4f-block: Lanthanides), transition metals, anions (Phytate, Phosphate, Sulphate, Perrhenate), isomers, and environmental contaminants [Polyfluorinated Alkyl Substances (PFAS), Cyanide, H₂S, TNT, TNP].

Google Scholar Citation

*Link: <https://scholar.google.com/citations?user=t2ZB6eMAAAAJ&hl=en>
Citation: 659 (updated May 2024)
h-index: 14, i10 index: 15*

Web of Science

*Link: <http://www.webofscience.com/wos/author/record/F-4463-2019>
Peer Reviewer > 170 articles (Excellent Reviewer in 5 reviews)*

ORCID iD:

*Link: <https://orcid.org/0000-0003-4208-5826>
Peer Reviewer = 24 international journals; Editor: 2 journals*

Scopus Author ID:

Link: <https://www.scopus.com/authid/detail.uri?authorId=55549918000>

Research Experience

- Postdoctoral researcher at ORNL, USA: **2 years 1 month**. I also assisted an ORISE intern (2023) in accomplishing a novel solid-liquid separation of lanthanides.
- Postdoctoral researcher at Kansas University, USA: **4 years and 8 months**. I helped 2 undergraduates and 3 graduate students to accomplish their research projects.
- Ph.D. graduate at Guru Nanak Dev University, India: **5 years**. Assisted five M.Sc. students and four junior Ph.D. researchers in accomplishing their research project work.

Academic Profile	R&D Associate (Expected 06/01/2024)	Radiochemist, Synthetic Physical-Organic Chemist Group Leader: Shannon Mahurin, Nanomaterials Chemistry Group, Chemical Sciences Division (CSD), Oak Ridge National Laboratory (ORNL).
	Postdoctoral Research Associate (03/21/2022~Present)	Synthetic organic and separation chemist https://www.ornl.gov/staff-profile/subhamay-pramanik Supervisor: Ilja Popovs, Nanomaterials Chemistry Group, CSD, ORNL, USA.
	Postdoctoral Researcher (07/25/2017~03/20/2022)	Synthesis, Separation, and crystallization of anions Supervisor: Prof. Kristin Bowman-James, <i>Director Kansas NSF EPSCoR</i> , Member of AAAS, Department of Chemistry, University of Kansas, USA
	Part-time lecturer (01/2017~06/2017)	Part-time lecturer at the Department of Chemistry, Guru Nanak Dev University, Amritsar, Punjab, India.
	PhD in Chemistry (03/2012~03/2017)	Doctorate in Chemistry with NET CSIR-UGC Fellowship. Mentor: Prof. Manoj Kumar, Department of Chemistry, Guru Nanak Dev University, Amritsar, Punjab, India.
	PhD Course work (06/2012~12/2012)	Obtained CGPA 8.88 , Department of Chemistry, Guru Nanak Dev University, Amritsar, Punjab, India.
	UGC NET Fellowship	All India Rank 84 in Chemical Sciences.
	Master of Science in Chemistry (08/2009~08/2011; Degree awarded in 09/2016)	1st class with CGPA 7.16, Specialization in Organic Chemistry, Department of Chemistry, Shree Chaitanya College, <i>affiliated to</i> West Bengal State University, West Bengal, India.
	Bachelor of Science (Hons. Chemistry) (07/2006~07/2009)	1st class with marks 60.37% , Department of Chemistry, Asutosh College, <i>affiliated to</i> Calcutta University, West Bengal, India.
	10+2 (Science) (07/2005~06/2006)	1st division with marks: 86.60% , A. C. Institution, Malda, West Bengal Council of Higher Secondary Education, West Bengal, India.
	10th (07/2003~06/2004)	1st division with marks: 83.25% , Malda Zilla School, West Bengal Board of Secondary Education, West Bengal, India.

List of Publications

Articles under preparation at ORNL:

26. Observation of a promethium complex in solution. *Nature*, **2024**, (IF: 64.8) DOI: 10.1038/s41586-024-07267-62023-10-18660 (*Just accepted*).
25. Emerging Rare Earth Element Separation Technologies. *Eur. J. Inorg. Chem.* (under revision).
24. “Tetradentate Ligand’s Chameleon-like Behavior Offers Recognition of Specific Lanthanides (*under review*).
23. Supramolecular Complexation-enhanced CO₂ Chemisorption in Amine-derived Sorbents (*under review*).
22. Electrifying rare-earth separation by electroactive diglycolamide ligands.

Published articles: 21

Publishing Summary:

Nature (1); *Chem. Commun.* (6); *ACS Appl. Mater. Interfaces* (3); *ACS Catal.* (2); *New J. Chem.* (2); *Green Chem.* (1); *Chem. - Eur. J.* (1); *Anal. Chim. Acta* (1); *Dalton Trans.* (1); *Inorg. Chem.* (1); *Org. Biomol. Chem.* (1); *Eur. J. Inorg. Chem.* (1); *CrystEngComm.* (1).

(First author = 10)
(Co-Author = 11)

21. **Subhamay Pramanik**, Ryan M. Steinert, Victor W. Day, Katie R. Mitchell-Koch*, and Kristin Bowman-James*, Structural Insight on Supramolecular Polyion Salts: Inositol Hexaphosphate Enclosed in Cationic Macrocyclic Clusters. *Chem. - Eur. J.* (Wiley) **2023**, (IF: 5.02) DOI: 10.1002/chem.202301764.
20. **Subhamay Pramanik**, Pall Thordarson, Victor W. Day, and Kristin Bowman-James*, Oligomeric phosphate clusters in macrocyclic channels, *CrystEngComm.* (RSC) **2022**, 24, 8047-8051. (IF: 3.7) (Selected for *Back Cover*).
19. Sandeep Kaur, **Subhamay Pramanik**, Victor W. Day a and Kristin Bowman-James* Snapshots of “Crystalline” Salt-Water Solutions Inositol Hexaphosphate Conformers. *Dalton Trans.* (RSC) **2021**, 50, 480-484. (IF: 4.5).
18. Jessica A. Lohrman, **Subhamay Pramanik**, Sandeep Kaur, Hanumaiah Telikepalli, Victor W Day and Kristin Bowman-James, Hydrophilic and Hydrophobic Carboxamide Pincers as Anion Hosts. *Org. Biomol. Chem.* (RSC) **2021**, 19, 8516-8520. (IF: 3.8).
17. **Subhamay Pramanik**, Victor W. Day, and Kristin Bowman-James*, Supramolecular traps for highly phosphorylated inositol sources of phosphorus, *Chem. Commun.* (RSC) **2020**, 56, 3269-3272. (IF: 6.0).
16. Molly Reinmuth, **Subhamay Pramanik**, Justin T. Douglas, Victor W. Day, and Kristin Bowman-James*, Structural Impact of Chelation on Phytate, a Highly Phosphorylated Biomolecule, *Eur. J. Inorg. Chem.* (Wiley) **2019**, 2019, 1870-1874 (Selected for *Front Cover*, 2019, 2019, 1859 and *Cover Profile*, 2019, 2019, 1860) (IF: 2.5).
15. Jessica Lohrman, Erik A. Vázquez-Montelongo, **Subhamay Pramanik**, Victor W. Day, Mark A. Hix, Kristin Bowman-James*, and G. Andres Cisneros*, Characterizing

- Hydrogen-Bond Interactions in Pyrazinetetracarboxamide Complexes: Insights from Experimental and Quantum Topological Analyses, *Inorg. Chem. (ACS)* **2018**, *57*, 9775-9778. (IF: 5.4).
14. **Subhamay Pramanik**, Harnimarta Deol, Vandana Bhalla*, and Manoj Kumar*, AIEE Active Donor-Acceptor-Donor-Based Hexaphenylbenzene Probe for Recognition of Aliphatic and Aromatic Amines, *ACS Appl. Mater. Interfaces (ACS)* **2018**, *10*, 12112-12123. (IF: 10.3).
 13. **Subhamay Pramanik**, Vandana Bhalla*, and Manoj Kumar*, Hexaphenylbenzene Based Fluorescent Aggregates for Detection of Zinc and Phosphate Ions in Aqueous Media: Tunable Self-assembly Behavior and Construction of Logic Device, *New J. Chem. (RSC)* **2017**, *41*, 4806-4813. (IF: 3.9).
 12. Mandeep Kaur, **Subhamay Pramanik**, Manoj Kumar, and Vandana Bhalla*, Polythiophene-Encapsulated Bimetallic Au-Fe₃O₄ Nano-Hybrid Materials: A Potential Tandem Photocatalytic System for Nondirected C(sp²)-H Activation for the Synthesis of Quinoline Carboxylates, *ACS Catal. (ACS)* **2017**, *7*, 2007-2021. (IF: 13.7).
 11. **Subhamay Pramanik**, Manoj Kumar, Imran A. Khan, Vandana Bhalla*, Supramolecular ensemble of TICT-AIEE active pyrazine derivative and CuO NPs: a potential photocatalytic system for Sonogashira couplings, *ACS Catal. (ACS)* **2016**, *6*, 3771-3783. (IF: 13.7).
 10. Meenal Kataria, **Subhamay Pramanik**, Navleen Kaur, Manoj Kumar, Vandana Bhalla*, Ferromagnetic α -Fe₂O₃ NPs: a potential catalyst in Sonogashira-Hagihara cross coupling and hetero-Diels-Alder reactions, *Green Chem. (RSC)* **2016**, *18*, 1495-1505. (IF: 11.0).
 9. Harshveer Arora, **Subhamay Pramanik**, Manoj Kumar and Vandana Bhalla*, Not quenched aggregates of a triphenylene derivative for the sensitive detection of trinitrotoluene in aqueous medium, *New J. Chem. (RSC)* **2016**, *40*, 3187-3193. (IF: 3.5).
 8. **Subhamay Pramanik**, Vandana Bhalla*, Manoj Kumar*, Hexaphenylbenzene-Stabilized Luminescent Silver Nanoclusters: A Potential Catalytic System for the Cycloaddition of Terminal Alkynes with Isocyanides, *ACS Appl. Mater. Interfaces (ACS)* **2015**, *7*, 22786-22795. (IF: 10.3).
 7. **Subhamay Pramanik**, Vandana Bhalla*, Hwan Myung Kim, Hardev Singh, Hyo Won Lee, Manoj Kumar*, A hexaphenylbenzene based AIEE active two photon probe for the detection of hydrogen sulfide with tunable self-assembly in aqueous media and application in live cell imaging, *Chem. Commun. (RSC)* **2015**, *51*, 15570-15573. (IF: 6.0).
 6. Meenal Kataria, **Subhamay Pramanik**, Manoj Kumar, Vandana Bhalla*, One-pot multicomponent synthesis of tetrahydropyridines promoted by luminescent ZnO nanoparticles supported by the aggregates of 6,6-dicyanopentafulvene, *Chem. Commun. (RSC)* **2015**, *51*, 1483-1486. (IF: 6.0).

5. Preet Kamal Walia, **Subhamay Pramanik**, Vandana Bhalla*, Manoj Kumar*, Aggregates of a hetero-oligophenylene derivative as reactors for the generation of palladium nanoparticles: a potential catalyst in the Sonogashira coupling reaction under aerial conditions, *Chem. Commun. (RSC)* **2015**, *51*, 17253-17256. (IF: 6.0).
4. **Subhamay Pramanik**, Vandana Bhalla*, Manoj Kumar*, A hexaphenylbenzene based AIEE active probe for the preparation of ferromagnetic α -Fe₂O₃ nanoparticles: facile synthesis and catalytic applications, *Chem. Commun. (RSC)* **2014**, *50*, 13533-13536. (IF: 6.0).
3. **Subhamay Pramanik**, Vandana Bhalla*, Manoj Kumar*, Hexaphenylbenzene-Based Fluorescent Aggregates for Ratiometric Detection of Cyanide Ions at Nanomolar Level: Set-Reset Memorized Sequential Logic Device, *ACS Appl. Mater. Interfaces (ACS)* **2014**, *6*, 5930-5939 (IF: 10.3).
2. **Subhamay Pramanik**, Vandana Bhalla*, Manoj Kumar*, Mercury assisted fluorescent supramolecular assembly of hexaphenylbenzene derivative for femtogram detection of picric acid, *Anal. Chim. Acta (ScienceDirect)* **2013**, *793*, 99-106. (IF: 6.9).
1. Vandana Bhalla*, **Subhamay Pramanik**, Manoj Kumar*, Cyanide modulated fluorescent supramolecular assembly of a hexaphenylbenzene derivative for detection of trinitrotoluene at the attogram level, *Chem. Commun. (RSC)* **2013**, *49*, 895-897. (IF: 6.0).

Journal Editor

1. Co-editing the Research Topic "**Rising Stars in Catalytic Chemistry**" in *Frontiers in Chemistry* (IF: 5.2) with Dr. Zois Syrgiannis (Northwestern University), Dr. Ioannis Spanopoulos (University of South Florida) in 2024.
2. **Associate Editor of Catalytic Reactions and Chemistry** division in *Frontiers in Chemistry* (IF: 5.2). Details can be found at the following link: <https://www.frontiersin.org/journals/chemistry/sections/catalytic-reactions-and-chemistry#editorial-board>
3. **Editor of International Journal of Chemical Sciences** (IF: 1.6). Details can be found at the following link: <https://www.tsijournals.com/journals/international-journal-of-chemical-sciences-editors.html>
4. **Guest editor of 'Symmetry' (IF: 2.7) Symmetry**
Details can be found at the following link: https://www.mdpi.com/journal/symmetry/special_issues/Supramolecular_Chemistry_Fluorescence

Journal Reviewers

Serving as a reviewer for international journals
(1) *Sensor and Actuator B:Chemical* (IF: 9.2), (2) *International Journal of Molecular Sciences* (IF: 6.2), (3) *Chemical Communications* (IF: 6.0), (4) *Nanomaterials* (IF: 5.7), (5) *Frontiers in Chemistry* (IF: 5.5), (6) *Dyes and Pigments* (IF: 5.1), (7) *Molecules* (IF: 4.9), (8) *Dalton Transactions* (IF: 4.5), (9) *RSC Advances* (IF: 4.0), (10) *CrystEngComm* (IF: 3.7) et. cetera.
Details can be found at <http://www.webofscience.com/wos/author/record/F-4463-2019>

**Editorial
Board
Member:**

1. Photocatalysis and Related Photochemistry in *Frontiers in Chemistry* (IF: 5.5)
 2. *Supramolecular Chemistry* Section for *Frontiers in Chemistry* (IF: 5.5)
 3. *Heterogeneous Catalysis* section of *Frontiers in Catalysis*
 4. *American Journal of Applied Chemistry in SciencePG* (ISSN Online: 2330-8745)
 5. *Nano Progress journal* for Ariviyal Publishing (ISSN: 2582-1598)
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**Talks and
Conference
Presentations**

Invited Talk

1. Presented invited talk in the webinar at KMV International Series (Chemistry Chapter), entitled 'Supramolecular Chemistry and its Intriguing Potential Applications' organized by Dept. of Chemistry, Kanya Maha Vidyalaya, Jalandhar, India on 10th March 2022. Details can be found at the following link: <https://www.kmvjalandhar.ac.in/activities/international-series-kansa-university-usa/>

Oral paper presentation

1. Gave a talk at the 21st Symposium on Separation Science and Technology for Energy Applications, Knoxville, on October 23-26, 2023; PAPER TITLE: *Influence of Conformational Rigidity on Selective Separation of Rare Earth Elements*.
2. Presented a 2-minute flash talk as a finalist in Science in a Nutshell competition, ORNL, 2023; PAPER TITLE: *Electrifying rare-earth separation*.
3. Oral presentation in the ORPA research symposium 2023 held on May 18-19, 2023 at ORNL; PAPER TITLE: *Preorganized Ligands for Efficient Separation of Rare Earths*.
4. Oral presentation at ACS Spring 2021, USA, on April 5-30, 2021; PAPER TITLE: *Tunable macrocyclic hosts for phytate and more complex anions*.
5. Oral presentation at 2017 Midwest Regional Meeting, Kansas University, Lawrence, KS, USA on October 18-20, 2017; PAPER TITLE: *Supramolecular chemistry of phytate, myo-inositol hexakisphosphate*.
6. Oral presentation at XIth Junior National Organic Symposium Trust (J-NOST) Conference for Research Scholars, December 14th-17th, 2015, at National Institute of Science Education and Research (NISER), Bhubaneswar. PAPER TITLE: *Supramolecular Aggregates of AIEE Active Hexaphenylbenzene Derivatives: A Search for new functional nanomaterials*.

Poster presentation

7. Presented poster at the 9th annual Critical Materials Innovation Hub Meeting at Mines, April 9-10, 2024; PAPER TITLE: *Enhanced Critical Mineral Separation for Sustainable Extraction*.
8. Poster presentation at the 2024 Chemical Separations Conference GRC in Galveston, Texas, USA, on January 21-26, 2024; PAPER TITLE: *Influence of conformational rigidity on selective separation of specific lanthanides*.

9. Presented poster at ORNL-VU workshop on October 20, 2023; PAPER TITLE: Influence of conformational rigidity in ligand design for selective separation of REEs.
10. Poster presentation at 2022 Chemical Separations Conference GRC in Four Points Sheraton at Ventura, CA, USA from October 2nd-7th, 2022; PAPER TITLE: Design and Synthesis of Strong and Selective Ligands for Separation of Lanthanides.
11. Poster presentation at 257th ACS National Meeting, Orlando, FL, USA on March 31st-April 4th, 2019; PAPER TITLE: *Cages for capturing phytate and more complex anions.*
12. Poster presentation at 255th ACS National Meeting, New Orleans, LA, USA on March 18th-22nd, 2018; PAPER TITLE: *Supramolecular confinement of anions, from small to large, with molecular pincers.*
13. Poster presentation at "VIth National Symposium on Advances in Chemical Sciences", March 6th-7th, 2017, Department of Chemistry, UGC Centre for Advanced Studies, Guru Nanak Dev University, Amritsar.
14. Attended National Symposium on Recent Trends in Chemistry, January 27th, 2017, Department of Chemistry, UGC Centre for Advanced Studies, Guru Nanak Dev University, Amritsar.
15. Poster presentation at "Vth National Symposium on Advances in Chemical Sciences", February 2nd-3rd, 2016 at Department of Chemistry, UGC Centre for Advanced Studies-I, Guru Nanak Dev University, Amritsar organized by RSC, Cambridge, UK.
16. Poster presentation at 11th International IUPAC conference on "Polymer-Solvent Complexes and Intercalates (POLYSOVAT11)" January 27th-30th, 2016 at IACS, Kolkata. PAPER TITLE: *AIEE Active Supramolecular Aggregates of Hexaphenylbenzene Derivatives: A Search for new functional nanomaterials.*
17. Best poster award at International conference "Asian Network for Natural & Unnatural Materials-2015" March 1st-2nd, 2015 at Punjab University, Chandigarh; PAPER TITLE: *AIEE active Fluorescent aggregates of Hexaphenylbenzene derivatives: A search for new chemosensor.*
18. Poster presentation at International conference "1st Asian Conference on Chemosensors & Imaging Probes (Asian-ChIP 2015)" November 16th-18th, 2015, at Stanford Hotel, Seoul, South Korea. PAPER TITLE: *Supramolecular Aggregates of AIEE Active Hexaphenylbenzene Derivatives: A Search for New Chemosensor.*
19. Poster presentation 17th National Symposium in Chemistry (NSC-17) & 9th CRSI-RSC Symposium in Chemistry, February 6th-8th, 2015, at National Chemical Laboratory (NCL), Pune. PAPER TITLE: *Hexaphenylbenzene based AIEE active Fluorescent nanoaggregates: A search for new chemosensor.*
20. Attended conference "NMRS-2015", March 6th-9th, 2015, at the Department of Chemistry, UGC Centre for Advanced Studies, GNDU, Amritsar.
21. Poster presentation at "IVth National Symposium on Advances in Chemical Sciences to commemorate the National Science Day" February 27th-28th, 2014, at the Department of Chemistry, Guru Nanak Dev University, Amritsar.

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22. Poster presentation at International conference “International Conference on Nanoscience and Technology-2014” March 3rd-5th, 2014, at Punjab University, Chandigarh. PAPER TITLE: *Hexaphenylbenzene based fluorescent nanoaggregates: A search of new chemosensor for sensitive and visual detection of explosives.*
 23. Poster presentation at National Symposium on Recent Trends in Chemistry, March 28th, 2013, Department of Chemistry, UGC Centre for Advanced Studies, Guru Nanak Dev University, Amritsar.
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Activity and membership
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- **Wrote LDRD, 2023 funding as a PI** in INTERSECT project (technical rating: 4), not encouraged for this year, but highly appreciated for next year with some revision.
 - **Finalist, Science in a Nutshell competition**, ORNL, 2023.
 - American Chemical Society (ACS) since 2018.
 - Vice-President, Oak Ridge Postdoctoral Association (ORPA) from 2022-2023.
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Judge and symposium chair

- Serve as a Fall 2023 CCI/SULI Poster Competition judge.
 - Volunteer as a Judge for the GEM Tech Talk competition 2023 held at ORNL on July 18, 2023.
 - Serves as session chair in two sessions (Mechanical Engineering/Metallurgy and Computational Material Science) in the ORPA research symposium 2023 held on May 18-19, 2023.
 - Organized the ‘R U Feeling OK?’ event and invited ORNL wellness coordinator Kathryn Pittman and physiologist Dr. Pam Jones for ORNL employees to meditate and take a break from everyday stress. Please take a look at <https://lnkd.in/etQY-zZh>
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Awards

- **Top poster presentation award** at the 9th annual CMI hub Meeting at Mines, April 9-10, 2024 for PAPER TITLE: Enhanced Critical Mineral Separation for Sustainable Extraction. Link <https://mailchi.mp/119b9b1fcb3/critical-times-the-newsletter-of-the-critical-materials-institute-9366753?e=dc7c743ddb>
 - Winner of the “**Art of Science**” contest 2023 at ORNL.
 - **Overall best talk winner** ORPA research symposium 2023 (among 70 talks) for PAPER TITLE: “Preorganized Ligands for Efficient Separation of Rare Earths” held on May 18-19, 2023 at ORNL.
 - **Best Poster award** in the international conference “Asian Network for Natural & Unnatural Materials-2015” for PAPER TITLE: “*AIEE active Fluorescent aggregates of Hexaphenylbenzene derivatives: A search for new chemosensor*” held on March 1-2, 2015 at Punjab University, Chandigarh. Link <https://news.puchd.ac.in/show-news.php?id=646&title=ANNUM+3+concludes+at+PU>.
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Govt. Fellowship and

- CSIR-UGC Junior Research Fellowship in Chemical Sciences (All India Rank: 84).
- National Postdoctoral fellowship, July 2017 (PDF/2017/000771) from Science and Engineering Research Board (SERB), India, with funding INR 19,20,000 (~USD

Travel support	<p>23,800); however not pursued since I was offered a postdoctoral researcher position under NSF funding at Kansas University, USA.</p> <ul style="list-style-type: none">• International travel grant of Rs: 84000 (\$1170) (ITS/4537/2015-16) from SERB, India, to attend "1st Asian Conference on Chemosensors and Imaging Probes (Asian-ChIP 2015)" held on 16th-18th November 2015 at Stanford Hotel, Seoul, South Korea.
Research Expertise	<ul style="list-style-type: none">• Expertise in purifying organic products through silica-gel, alumina (basic and neutral), and ion exchange columns.• Regularly use benchtops, fume hoods, and glove boxes.• Experienced in handling all types of sensitive organic reactions such as Suzuki, Sonogashira couplings, Diels-Alder, C-H activation, Click, Condensation, Macrocyclic condensation (<i>via</i> amide/imine linkages), oxidation, reduction, reaction with amines (protection and deprotection), phosgene gas (NH₂ to -NCO conversion), n-BuLi, etc. (moisture sensitive, oxygen sensitive reactions and reactions at low or high temperature, use of Schlenk lines for inert condition).
Instrumentation and Software Experience	<ul style="list-style-type: none">• I have been trained using NMR (Bruker 400, 500, and 800 MHz), FT-IR, LC-MS, HPLC-MS, APCI-MS, and OPSI-MS spectrometers.• Experience in working with ICP-MS, ICP-OES, and Karl Fisher.• I also have hands-on experience using UV-visible fluorescence, time-resolved fluorescence spectrophotometer (TRF), cyclic voltammetry (CV), polarized optical microscope (POM), scanning electron microscope (SEM), transmission electron microscope (TEM), dynamic light scattering (DLS) instrument, and vibrating sample magnetometer (VSM).• Expertise in the characterization of nanomaterials, nanoparticles, or metal complexes by powder XRD, Small-angle X-ray scattering (SAXS), Brunauer-Emmett-Teller (BET) surface area analysis, Scanning electron microscope (SEM), transmission electron microscopy (TEM), X-ray photoelectron spectroscopy (XPS), and dynamic light scattering (DLS), Thermogravimetric analysis (TGA), Differential Scanning Calorimetry (DSC), Powder XRD.• Expertise in X-ray crystal structure analysis using Mercury and Olex2 software. Host-guest binding constant calculation by using the EQNMR2 program.• Experience operating preliminary theoretical calculations using the Gaussian-09 program (DFT).
