



INDRANIL CHAKRABORTY, PH.D.

Address: 740 SW 109th Avenue, Apartment 1205, Miami, Florida 33174

Phone: 915.244.3786 | Email: indranilc74@gmail.com

QUALIFICATIONS PROFILE

Skilled at integrating strategic methods, courses, techniques, and presentations in teaching to ensure optimal learning and research. Armed with adeptness in hydrothermal/solvothermal and critical X-ray structures and diffraction techniques. Known for proven work ethic in utilizing strong team-oriented approach in preparation and implementation of instrument usage, laboratory methods development, and chemistry techniques. Known for outstanding work ethic, interpersonal, and communication capabilities effective in building and maintaining positive relationships with all levels of professionals.

AREAS OF EXPERTISE

Individualized and Virtual Instruction | Project Management | Scientific Research and Publication
Laboratory Procedure Implementation | Synthetic and Design Strategy Development | Team and Student Coordination

EDUCATION

Doctor of Philosophy in Inorganic Chemistry

Indian Association for the Cultivation of Science, Department of Inorganic Chemistry | Kolkata, WB, India

Master of Science in Inorganic and Industrial Chemistry

Vidyasagar University | Midnapore, WB, India

TEACHING EXPERIENCE

FLORIDA INTERNATIONAL UNIVERSITY | MIAMI, FL, USA

Assistant Teaching Professor and in-charge of X-ray Diffraction Facility | 2021–Present

Courses Taught in the department of Chemistry and Biochemistry at FIU

“Survey of Chemistry” (CHM1033) (over 120 non-science majors)

“Advanced Inorganic Chemistry” (CHM4611)

“Graduate Inorganic Chemistry” (CHM5620)

“Fundamentals of Inorganic Chemistry” (CHM3610)

Inorganic Chemistry Laboratory (CHM3610L)

“General Chemistry II” (CHM1046)

“Chemistry and Society” (CHM1020)

Organized theoretical and hands on training for single crystal X-ray diffraction technique in the department of Chemistry and Biochemistry

RESEARCH EXPERIENCE

UNIVERSITY OF CALIFORNIA, SANTA CRUZ | SANTA CRUZ, CA, USA

X-ray Diffraction Facility Manager | 2013-2017

- Organized and conducted workshops and training to multiple graduate and undergraduate students regarding proper operation of X-ray diffractometer, as well as solution and refinement of single crystal X-ray structures for small molecules
- Completed assignment in a small molecule X-ray crystallography and synchrotron beam line facility within the advanced light source (ALS) in Lawrence Berkeley National Laboratory in Berkeley, California

UNIVERSITY OF CALIFORNIA, SANTA CRUZ | SANTA CRUZ, CA, USA

Senior Research Specialist | 2019–2020

Exhibited expertise in developing the following organic compounds:

- New organo-antimony-based compounds solving the inefficacy of traditional therapeutics against acute leishmaniasis
- Organo-arsenic-based compounds using multi-step organic synthesis to serve as possible chemotherapeutic agents against certain hematological malignancies, including acute promyelocytic leukemia (APL)

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- Studied organo-arsenic compounds in identifying their capacity to induce cellular differentiation in cultured NB4 (human promyelocytic leukemia) and HL60 (a human Caucasian promyelocytic leukemia) cells

FLORIDA INTERNATIONAL UNIVERSITY | MIAMI, FL, USA

Research Assistant Professor I 2017–2019

- Steered efforts in the development of synthetic and design strategy to create a new low valent group 7 metal carbonyl complexes for intracellular nitric oxide (NO) sensing through fluorescence turn-on or turn-off events
- Demonstrated knowledge and skills in designing and synthesizing new silver(I)pyrazolate complexes to evaluate their antibacterial efficacy for Gram-negative nosocomial pathogen, such as *Pseudomonas aeruginosa*, various 4-substituted, and 3,5- substituted pyrazoles are synthesized (through multi-step organic synthesis) which use as a chelator in project
- Facilitated in-depth study and examination on a series of silver(I)pyrazolate complexes using appropriate chemical functionalization
- Built a synthetic method in accessing to a family of dimeric oxorhenium(V) complexes as potential agents for positron emission tomography (PET) and single photon emission computed tomography (SPECT) imaging of brain

UNIVERSITY OF CALIFORNIA, SANTA CRUZ | SANTA CRUZ, CA, USA

Research Specialist I 2013–2017

- Applied appropriate and target-specific approach in generating biocompatible transition metal-based prodrugs for photochemotherapy against certain cisplatin resistant malignant cells, including triple negative MDA-MB-231 breast cancer cells through design and synthesis of appropriate organic ligands
- Took charge of designing and synthesizing various organic molecules as ligands to create suitable photo-active metal carbonyl complexes allowing CO release triggered with lights of varied wavelengths
- Produced new biocompatible silver(I) complexes incorporating nontoxic organic ligands, while analyzing their antibacterial efficacy against a variety of Gram-negative and Gram-positive pathogens, such as *Pseudomonas aeruginosa* and *Staphylococcus aureus*
- Made significant contribution on creating new pyrazinamide coordinated gold(I) complexes and assessing their bactericidal effects towards *Mycobacterium smegmatis* and *Mycobacterium tuberculosis*
- Generated a synthetic strategy for accessing novel materials as drug delivery systems (DDS) for efficient and site-specific drug delivery which involved encapsulation of a photoactive metal carbonyl prodrug within mesoporous MCM-41 silica nanomaterials and chemically grafting another photoactive metal carbonyl system to highly biocompatible, carboxymethyl chitosan

UNIVERSITY OF TEXAS, EL PASO | EL PASO, TX, USA

Postdoctoral Research Associate I 2012–2013

- Conceptualized and tested a proton coupled electron transfer (PCET) studies comprising metal-metal multiply bonded tungsten complexes for catalytic processes in relation to environmental remediation
- Used effective methods in developing synthesis of complexes with ultra-short metal-metal bond through implementation of stepwise synthesis of di-tungsten and di-molybdenum complexes with sterically perplexing amidinate ligands
- Formulated new organic molecules for stabilizing the metal-metal multiple bonds

HARVARD UNIVERSITY | CAMBRIDGE, MA, USA

Postdoctoral Research Associate I 2010

- Planned molybdenum-copper heterometallic model complexes in duplicating molybdenum containing carbon monoxide dehydrogenase (CODH) metalloenzyme

Earlier Position Held:

UNIVERSITY OF PUERTO RICO | SAN JUAN, PUERTO RICO

Postdoctoral Research Associate

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE | KOLKATA, WB, INDIA

Postdoctoral Research Associate /PhD Student



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PROFESSIONAL AFFILIATIONS

American Chemical Society
Royal Society of Chemistry (MRSC)
Indian Association for the Cultivation of Science
American Crystallographic Association
European Crystallographic Association

AWARDS

Travel Award for participation in American Crystallographic Association (ACA) Meeting in Toronto
Gold Medal in Master of Science Chemistry Examination
Biswanath De Endowment Medal in Master of Science Chemistry Examination
Sucharita Basu Endowment Medal for top one among all Master of Arts and Master of Science candidates
Qualified for Graduate Aptitude Test in Engineering (GATE) Examination
Visiting Researcher at University of Wisconsin-Madison

ACTIVITIES

Guest Editor, Special Issue of Solid-state Chemistry Journal: Crystals (MDPI AG Publication)
Editorial Advisory Board Member, Two International Peer-reviewed Journals: Crystals and Sci (MDPI AG Publication)
Trainer, STEM Undergraduate and Graduate Students regarding research presentation in various national conferences *Active Reviewer*, Several International Chemistry Journals (American Chemical Society, Royal Society of Chemistry, Wiley-VCH, Elsevier, Springer, and MDPI AG)

TECHNICAL SKILLS

Techniques	Single Crystal X-ray/Powder X-ray Diffraction Mossbauer Spectroscopy Fluorescence Spectroscopy Nuclear Magnetic Resonance and Electron Paramagnetic Resonance (NMR and EPR) Spectroscopy Gas Chromatography Mass Spectrometry (GC/MS) Fourier-Transform Infrared (FT-IR) Spectroscopy Ultraviolet-Visible-NearIR Spectroscopy (UV-Vis-NIR) Mass Spectroscopic Techniques (MALDI and ESI) Electrochemical Techniques (Cyclic Voltammetry, Bulk Electrolysis, and Spectroelectrochemistry) PC GAMES and ORCA (DFT and TDDFT Calculations) Schlenk lines Inert Atmosphere Glove Box Bruker Apex2 and Rigaku single crystal X-ray Diffractometers
Software	ChemDraw ChemSketch SigmaPlot Mestrenova SHELXTL SHELXL PLATON Olex2 Mercury CrystalMaker Diamond ORTEP-3 PubCIF Encifer SciFinder Conquest iVision ImageJ

DISSERTATION

Chakraborty, I. (2004). *Synthesis structure and reactivity of some new rhenium chelates*. (Unpublished doctoral dissertation). Indian Association for the Cultivation of Science. Kolkata, India.

PRESENTATIONS

Chakraborty, I. (2003). *Modern trends in inorganic chemistry (MTIC)*. Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Calcutta, India.

Chakraborty, I. (2004). *One day colloquium on inorganic chemistry*. Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Calcutta, India.

Chakraborty, I. (2008a). *PR-LSAMP second trans disciplinary research conference on nanotechnology with emphasis in biology and electronics*. NASA, University of Puerto Rico, San Juan, Puerto Rico.

Chakraborty, I. (2008b). *235th National Meeting of American Chemical Society*. New Orleans, LA.

Chakraborty, I. (2009a). *Gordon Research Conference on Bioinorganic Chemistry*. Ventura, CA.

Chakraborty, I. (2009b). *Zing Coordination Chemistry Conference*, Antigua, West Indies.



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Chakraborty, I. (2014a). *ACS National Meeting of American Chemical Society*. San Francisco, CA.

Chakraborty, I. (2014b). *Bunnett symposium*. Department of Chemistry and Biochemistry, University of California Santa Cruz, Santa Cruz, CA.

Chakraborty, I. (2016a). *American Crystallography Association (ACA) summer school on crystallography*. University of Notre Dame, Notre Dame, IN.

Chakraborty, I. (2016b). *Bruker users meeting*. University of North Florida, Jacksonville, FL.

Chakraborty, I. (2016d). *Bunnett symposium*. Department of Chemistry and Biochemistry, University of California Santa Cruz, Santa Cruz, CA.

Chakraborty, I. (2018a). *American Crystallography Association (ACA) Meeting*. Toronto, Canada.

Chakraborty, I. (2018b). *University of South Florida and NSF Small Molecular Crystallography School*.

Tampa, FL Chakraborty, I. (2019). *American Chemical Society (ACS) National Meeting*. Orlando, FL.

PATENTS

1) Raptis, R. G., Chakraborty, I., and Kandel, S. US Patent No 11,160,829 Washington, DC: U.S. Patent and Trademark Office.

2) Raptis, R. G., Chakraborty, I., and Kandel, S. US Patent No 10,828,327 Washington, DC: U.S. Patent and Trademark Office.

3) Raptis, R. G., Chakraborty, I., and Kandel, S. US Patent No 11,779,598 Washington, DC: U.S. Patent and Trademark Office.

JOURNAL ARTICLES

77) Mandal, S; Garu, P.; Chawdhury, G.; Mondal, A.; **Chakraborty, I.**; Chattopadhyay, S. The first examples of dirhenium(III,II) paramagnetic complexes with bridging diphenylphosphinomethane and 2-mercaptopyridine ligands: A collective experimental and theoretical studies, *J. Mol Structure*, **2025**, doi: 10.1016/j.molstruc.2024.140363

76) Shi, Z, Li, F., **Chakraborty, I.**, Chen, Z., Raptis, R. G. Trinuclear and Cyclometallated Organometallic Dinuclear Pt- Pyrazolato Complexes: A Combined Experimental and Theoretical Study. *Chemistry*, **2023**, 5, 187-200

75) Hasan, A., Varna, D., **Chakraborty, I.**, Angaridis, P. A., Raptis, R. G. Synthesis, structure and antibacterial properties of a mononuclear Ag(I) complex, [Ag(OBz)(PTA)₂] (OBz = benzoate, PTA = 1, 3, 5-triaza-7-phosphadamantane). *Results in Chemistry*. **2022** DOI: 10.1016/j.rechem.2022.100580 (as a corresponding author)

74) **Chakraborty, I** and Mascharak P. K., Photoactive Manganese Carbonyl Complexes with fac-{Mn(CO)₃} moiety: Design, Applications, and Potential as Prodrugs in COTherapy. *Advances in Inorganic Chemistry*. **2022** (Book Chapter). ISSN 0898- 8838, DOI: 10.1016/bs.adioch.2022.04.003 (In Press)

73) Hernandez, A., **Chakraborty, I.**, Ortega, G., Dares, C. J. Crystal Structure of a Trigonal Polymorph of aquadioxobis pentane_{2,4}-dione-k₂-O,O')-uranium (VI). *Acta Cryst*. **2022**, E78, 40-43.

72) Belov, D. S., Fenoll, D. A., **Chakraborty, I.**, Solans-Monfort, X., Bukhryakov, K. V. Synthesis of Vanadium Oxo Alkylidene Complex and Its Reactivity in Ring-Closing Olefin Metathesis Reactions. *Organometallics*. **2021**, 40, 2939-2944.

71) Stenger-Smith, J., **Chakraborty, I.**, Ouattara, R., Sameera, W. M., Rue, K., and Mascharak, P. COrelease from Mn (I)-based photoCORIMs with single photons in the phototherapeutic region. *Chemical Communications*. **2021**; 57(9):1101-1104.

70) Rue, K. L., McLachlan, J. R., Cazzaniga, J. A., **Chakraborty, I.**, Dares, C. J., and Raptis, R. G. Redox-active dinuclear oxorhenium(V)pyrazolate complexes. *Inorganica Chimica Acta*. **2021**; 516:120126

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- 69) Stenger-Smith, J., Kamariza, M., **Chakraborty, I.**, Ouattara, R., Bertozzi, C. R., and Mascharak, P. K. Enhanced bactericidal effects of pyrazinamide toward mycobacterium smegmatis and mycobacterium tuberculosis upon conjugation to a {Au (I)- triphenylphosphine} Moiety. *ACS Omega*, **2020**; 5(12):6826-6833.
- 68) Fasiku, A. O., Fortunato, M. T., **Chakraborty, I.**, and Kavallieratos K. Mercury (II) sensing via cyclization of a dithioamide into a benzimidazole derivative: A structural and spectroscopic study. *Inorganica Chimica Acta*, **2020**; 510:119680.
- 67) **Chakraborty, I.**, Pinto, M., Stenger-Smith, J., Martinez-Gonzalez, J., and Mascharak, P. K. Synthesis, structures and antibacterial properties of Cu (II) and Ag (I) complexes derived from 2, 6-bis (benzothiazole)-pyridine. *Polyhedron*, **2019**; 172, 1-7.
- 66) Islam, A., Mandal, S., Carrington, S. J., **Chakraborty, I.**, and Chattopadhyay, S. Pyridine-2-carboxylato chelated acylrhodium (III) organometallics: Spectroscopic, structural and theoretical studies. *Polyhedron*, **2019**; 172, 15-21.
- 65) Lazarou, K. A., **Chakraborty, I.**, and Raptis, R. G. Re-investigation of an octanuclear iron-oxo complex supported by 4-tbutyl-pyrazolido ligands. *Polyhedron*, **2019**; 171, 41-45.
- 64) Lazarou, K. A., González-Nieves, K., **Chakraborty, I.**, and Raptis, R. G. Spontaneous resolution by crystallization of an octanuclear iron (III) complex using only racemic reagents. *Angewandte Chemie International Edition*, **2019**; 58(22), 7324-7328
- 63) Pinto, M. N., **Chakraborty, I.**, Jimenez, J., Murphy, K., Wenger, J., and Mascharak, P. K. Therapeutic potential of two visible light responsive luminescent photoCORMs: Enhanced cellular internalization driven by lipophilicity. *Inorganic Chemistry*, **2019**; 58(21), 14522-14531.
- 62) Schultz-Simonton, W., Skelly, P., **Chakraborty, I.**, Mascharak, P., and Braslau, R. Synthesis, structure, and fluorescence behavior of profluorescent 8-amino BODIPY nitroxides. *European Journal of Organic Chemistry*, **2019**; (7), 1583-1587.
- 61) Shi, K., Mathivathanan, L., Boudalis, A. K., Turek, P., **Chakraborty, I.**, and Raptis, R. G. Nitrite reduction by trinuclear copper pyrazolate complexes: An example of a catalytic, synthetic polynuclear no releasing system. *Inorganic Chemistry*, **2019**; 58(11), 7537-7544.
- 60) Soe, E., Kim, J. S., **Chakraborty, I.**, and Oliver, S. R. (2019). Synthesis and characterization of two cationic silver quinoxaline coordination polymers. *European Journal of Inorganic Chemistry*, **2019**, 16, 2175-2181.
- 59) Colinas, I. R., Rojas-Andrade, M. D., **Chakraborty, I.**, and Oliver, S. R. Two structurally diverse Zn-based coordination polymers with excellent antibacterial activity. *CrystEngComm*, **2018**; 20(24), 3353-3362.
- 58) Das, S., Parga, K., **Chakraborty, I.**, Tinoco, A. D., Delgado, Y., López, P. M., ... and Klostergaard, J. Magnetic resonance imaging contrast enhancement in vitro and in vivo by octanuclear iron-oxo cluster-based agents. *Journal of Inorganic Biochemistry*, **2018**; 186, 176-186.
- 57) Jimenez, J., **Chakraborty, I.**, Dominguez, A., Martinez-Gonzalez, J., Sameera, W. C., and Mascharak, P. K. A luminescent manganese photoCORM for CO delivery to cellular targets under the control of visible light. *Inorganic Chemistry*, **2018**; 57(4), 1766-1773.
- 56) Kandel, S., Stenger-Smith, J., **Chakraborty, I.**, and Raptis, R. G. Syntheses and X-ray crystal structures of a family of dinuclear silver (I) pyrazolates: Assessment of their antibacterial efficacy against *P. aeruginosa* with a soft tissue and skin infection model. *Polyhedron*, **2018**; 154, 390-397.
- 55) Pinto, M. N., Martinez-Gonzalez, J., **Chakraborty, I.**, and Mascharak, P. K. Incorporation of a theranostic “two-tone” luminescent silver complex into biocompatible agar hydrogel composite for the eradication of ESKAPE pathogens in a skin and soft tissue infection model. *Inorganic Chemistry*, **2018**; 57(11), 6692-6701.
- 54) Stenger-Smith, J., **Chakraborty, I.**, and Mascharak, P. K. Cationic Au (I) complexes with aryl-benzothiazoles and their antibacterial activity. *Journal of Inorganic Biochemistry*, **2018**, 185, 80-85.

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- 53) Stenger-Smith, J., **Chakraborty, I.**, Sameera, W. M. C., and Mascharak, P. K. Antimicrobial silver (I) complexes derived from aryl-benzothiazoles as turn-on sensors: Syntheses, properties and density functional studies. *Inorganica Chimica Acta*, **2018**; 471, 326-335.
- 52) Truong, P. T., Broering, E. P., Dzul, S. P., **Chakraborty, I.**, Stemmler, T. L., and Harrop, T. C. Simultaneous nitrosylation and N-nitrosation of a Ni-thiolate model complex of Ni-containing SOD. *Chemical Science*, **2018**; 9(45), 8567-8574.
- 51) **Chakraborty, I.**, Carrington, S. J., Roseman, G., and Mascharak, P. K. Synthesis, structures, and CO release capacity of a family of water-soluble photoCORMs: assessment of the biocompatibility and their phototoxicity toward human breast cancer cells. *Inorganic Chemistry*, **2017**; 56(3), 1534-1545.
- 50) **Chakraborty, I.**, Jimenez, J., and Mascharak, P. K. CO-Induced apoptotic death of colorectal cancer cells by a luminescent photoCORM grafted on biocompatible carboxymethyl chitosan. *Chemical Communications*, **2017**; 53(40), 5519-5522.
- 49) **Chakraborty, I.**, Jimenez, J., Sameera, W. M. C., Kato, M., and Mascharak, P. K. Luminescent Re (I) carbonyl complexes as trackable photoCORMs for CO delivery to cellular targets. *Inorganic Chemistry*, **2017**; 56(5), 2863-2873.
- 48) **Chakraborty, I.**, Tena, J., and Mascharak, P. K. Photoactive rhenium carbonyl complexes of N, N, S-donor ligands: Contrast in binding modes based on flexibility of ligand frames and nature of ancillary ligands. *Inorganica Chimica Acta*, **2017**; 467, 358-363.
- 47) Govor, E. V., Al-Ameed, K., **Chakraborty, I.**, Coste, C. S., Govor, O., Sanakis, Y., ... and Raptis, R. G. A redox-induced spin-state cascade in a mixed-valent Fe³ (μ_3 -O) triangle. *Angewandte Chemie International Edition*, **2017**; 56(2), 582-586.
- 46) Jimenez, J., **Chakraborty, I.**, Del Cid, A. M., and Mascharak, P. K. Five- and six-coordinated silver (I) complexes derived from 2, 6-(pyridyl) iminodiadamantanes: Sustained release of bioactive silver toward bacterial eradication. *Inorganic Chemistry*, **2017**; 56(9), 4784-4787.
- 45) Jimenez, J., **Chakraborty, I.**, Rojas-Andrade, M., and Mascharak, P. K. Silver complexes of ligands derived from adamantylamines: Water-soluble silver-donating compounds with antibacterial properties. *Journal of Inorganic Biochemistry*, **2017**, 168, 13-17.
- 44) Pinto, M. N., **Chakraborty, I.**, Sandoval, C., and Mascharak, P. K. Eradication of HT-29 colorectal adenocarcinoma cells by controlled photorelease of CO from a CO-releasing polymer (photoCORP-1) triggered by visible light through an optical fiber-based device. *Journal of Controlled Release*, **2017**; 264, 192-202.
- 43) Pinto, M. N., **Chakraborty, I.**, Schultz-Simonton, W., Rojas-Andrade, M., Braslau, R., and Mascharak, P. K. Tracking silver delivery to bacteria using turn-on fluorescence. *Chemical Communications*, **2017**; 53(9), 1459-1462.
- 42) Pinto, M., **Chakraborty, I.**, Martinez-Gonzalez, J., and Mascharak, P. Synthesis and structures of photoactive rhenium carbonyl complexes derived from 2-(pyridin-2-yl)-1, 3-benzothiazole, 2-(quinolin-2-yl)-1, 3-benzothiazole and 1, 10-phenanthroline. *Acta Crystallographica Section C: Structural Chemistry*, **2017**; 73(11), 923-929.
- 41) Stenger-Smith, J., **Chakraborty, I.**, Carrington, S., and Mascharak, P. Synthesis and structures of photoactive manganese-carbonyl complexes derived from 2-(pyridin-2-yl)-1, 3-benzothiazole and 2-(quinolin-2-yl)-1, 3-benzothiazole. *Acta Crystallographica Section C: Structural Chemistry*, **2017**; 73(4), 357-361.
- 40) Carrington, S. J., **Chakraborty, I.**, Bernard, J. M., and Mascharak, P. K. A theranostic two-tone luminescent photoCORM derived from Fe (I) and (2-pyridyl)-benzothiazole: trackable CO delivery to malignant cells. *Inorganic Chemistry*, **2016**; 55(16), 7852-7858.
- 39) **Chakraborty, I.**, and Mascharak, P. K. Mesoporous silica materials and nanoparticles as carriers for controlled and site-specific delivery of gaseous signaling molecules. *Microporous and Mesoporous Materials*, **2016**; 234, 409-419.
- 38) Jimenez, J., **Chakraborty, I.**, and Mascharak, P. Synthesis and crystal structure of tricarbonylchlorido {1-[(pyridin-2-yl)methylidene] amino} adamantane} rhenium (I). *Acta Crystallographica Section E: Crystallographic Communications*, **2016**; 72(9), 1276-1279.

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- 37) Jimenez, J., **Chakraborty, I.**, Carrington, S. J., and Mascharak, P. K. Light-triggered CO delivery by a water-soluble and biocompatible manganese photoCORM. *Dalton Transactions*, **2016**; 45(33), 13204-13213.
- 36) Pinto, M., **Chakraborty, I.**, and Mascharak, P. Synthesis and crystal structure of bis (1-[[quinolin-8-yl] imino] methyl) pyrene- κ^2 N, N') silver (I) trifluoromethanesulfonate. *Acta Crystallographica Section E: Crystallographic Communications*, **2016**; 72(10), 1495-1498.
- 35) Carrington, S. J., **Chakraborty, I.**, and Mascharak, P. K. Exceptionally rapid CO release from a manganese (I) tricarbonyl complex derived from bis (4-chloro-phenylimino) acenaphthene upon exposure to visible light. *Dalton Transactions*, **2015**; 44(31), 13828-13834.
- 34) **Chakraborty, I.**, Carrington, S. J., Hauser, J., Oliver, S. R., and Mascharak, P. K. Rapid eradication of human breast cancer cells through trackable light-triggered CO delivery by mesoporous silica nanoparticles packed with a designed photoCORM. *Chemistry of Materials*, **2015**; 27(24), 8387-8397.
- 33) Deboer, T. R., **Chakraborty, I.**, and Mascharak, P. K. Design and construction of a silver (I)-loaded cellulose-based wound dressing: Trackable and sustained release of silver for controlled therapeutic delivery to wound sites. *Journal of Materials Science: Materials in Medicine*, **2015**; 26(10), 243.
- 32) Jimenez, J., **Chakraborty, I.**, and Mascharak, P. Synthesis and structures of ruthenium di- and tricarbonyl complexes derived from 4, 5-diazafluoren-9-one. *Acta Crystallographica Section C: Structural Chemistry*, **2015**; 71(11), 965-968.
- 31) Jimenez, J., **Chakraborty, I.**, and Mascharak, P. K. Synthesis and assessment of CO-release capacity of manganese carbonyl complexes derived from rigid α -diimine ligands of varied complexity. *European Journal of Inorganic Chemistry*, **2015**; 30, 5021-5026.
- 30) Carrington, S. J., **Chakraborty, I.**, Bernard, J. M., and Mascharak, P. K. Synthesis and characterization of a "turn-on" photoCORM for trackable CO delivery to biological targets. *ACS medicinal chemistry letters*, **2014**; 5(12), 1324-1328.
- 29) **Chakraborty, I.**, Carrington, S. J., and Mascharak, P. K. Design strategies to improve the sensitivity of photoactive metal carbonyl complexes (photoCORMs) to visible light and their potential as CO-donors to biological targets. *Accounts of Chemical Research*, **2014**; 47(8), 2603-2611.
- 28) **Chakraborty, I.**, Carrington, S. J., and Mascharak, P. K. Photodelivery of CO by designed photoCORMs: Correlation between absorption in the visible region and metal-CO bond labilization in carbonyl complexes. *ChemMedChem*, **2014**; 9(6), 1266-1274. *Special Issue on Metals in Medicine*.
- 27) DeBoer, T. R., **Chakraborty, I.**, Olmstead, M. M., and Mascharak, P. K. Supramolecular Assembly of Ag (I) Centers: Diverse topologies directed by anionic interactions. *Crystal Growth & Design*, **2014**; 14(10), 4901-4905.
- 26) Carrington, S. J., **Chakraborty, I.**, Alvarado, J. R., and Mascharak, P. K. Differences in the CO photolability of cis- and trans-[RuCl₂(azpy)(CO)₂] complexes: Effect of metal-to-ligand back-bonding. *Inorganica Chimica Acta*, **2013**; 407, 121-125.
- 25) Carrington, S. J., **Chakraborty, I.**, and Mascharak, P. K. Rapid CO release from a Mn (I) carbonyl complex derived from azopyridine upon exposure to visible light and its phototoxicity toward malignant cells. *Chemical Communications*, **2013**; 49(96), 11254-11256.
- 24) Gonzalez, M. A., Carrington, S. J., **Chakraborty, I.**, Olmstead, M. M., and Mascharak, P. K. Photoactivity of mono- and dicarbonyl complexes of ruthenium (II) bearing an N, N, S-donor ligand: Role of ancillary ligands on the capacity of CO photorelease. *Inorganic Chemistry*, **2013**; 52(19), 11320-11331.
- 23) Das, S., **Chakraborty, I.**, Skachkov, D., Ahmadi, M., Ishikawa, Y., Baran, P., and Raptis, R. G. Water-Soluble Derivatives of Octanuclear Iron-Oxido-Pyrazolato Complexes—an Experimental and Computational Study. *European Journal of Inorganic Chemistry*, **2012**; 23, 3704-3711.
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