

List of Publications (*List of papers, book chapters, patents granted*).

Sl No.	Authors	Title	References
138	Pallabi Mandal, Ratan Logdi, Subir Maji, <u>Swadhin K. Mandal</u> , Ashwani Tiwari	Quantum Chemical Insights of Mesoionic N-Heterocyclic Olefin Catalyzed S-Formylation of Thiols using CO ₂	<i>ACS Catal.</i> 2025 , <i>15</i> , 18688–18699
137	Biplab Gope, Nimisha Gautam, Satadru Dutta, Subir Maji, <u>Swadhin K. Mandal</u>	Coordination Chemistry of Phosphinidene Stabilized by Mesoionic N-heterocyclic Carbene and Catalysis	<i>Chem. Eur. J.</i> 2025 , <i>0</i> , e02402 (1 of 8)
136	Nimisha Gautam, Sreejyothi Prasanna, Kaushik Soni, Subhajit Chakraborty, Subir Maji, Kalishankar Bhattacharyya, <u>Swaihin K. Mandal</u>	aNHC Stabilised Low-Valent Phosphorus Compound: Exploring Dual Catalytic Activity via Nucleophilicity and P(I)/P(III) Redox Reactivity	<i>J. Am. Chem. Soc.</i> 2025 , <i>147</i> , 23001-23013
135	Subir Maji, Mandira Saha, Satyaki Sinha, Priyankar Majumder, and <u>Swadhin K. Mandal</u>	Metal-Free Catalytic N- Methylation of NH- Sulfoximines Using CO ₂	<i>Org. Lett.</i> 2025 , <i>27</i> , 4146–4151
134.	Paramita Datta, Subir Maji, Prativa Biswas, Divya Jain, Partha Protim Dey and <u>Swadhin K. Mandal</u>	Organophotocatalytic Redox-Neutral Strategy for Late-Stage Drug Functionalization with SO ₂ Gas	<i>Chem. Sci.</i> 2025 , <i>16</i> , 5064-5075

133.	Amit Biswas, Simon kolb, Sebastian H. Rottger, Arpan Das, Lukas J. Patalag, Partha P. Dey, Swagata Sil, Subir Maji, Soumi Chakrabarty, Oliver S. Wenger, Anup Bhunia, Daniel B. Werz and <u>Swadhin K. Mandal</u>	ABOIMPY Dye Enables Multi- Photoinduced Electron Transfer Catalysis: Reaching Super- Reducing Properties	<i>Angew. Chem. Int. Ed.</i> 2025, 64, e202416472
132.	Subir Maji, Biplab Gope, Madhur Sharma, Arpan Das, Anex Jose, Amit Biswas, Kalishankar Bhattacharyya and <u>Swadhin K. Mandal</u>	Independent LUMO Reactivity in Mesoionic N-Heterocyclic Thiones: Synthesis of a Stable Radical Anion	<i>Angew. Chem. Int. Ed.</i> 2025, 64, e202418673
131.	Sreejyothi P, Nimisha Gautam, Subir Maji, Kalishankar Bhattacharyya and <u>Swadhin K. Mandal</u>	Transition Metal-Mimicking Relay Catalysis by a Low-Valent Phosphorus Compound	<i>J. Am. Chem. Soc.</i> 2024, 146, 16743–16752
130.	Swagata Sil, Krishnapriya Anattil Unnikrishnan, Pallabi Mandal, Rositha Kuniyil and <u>Swadhin K. Mandal</u>	Cross-coupling between Aryl Halides and Aryl Alkynes Catalyzed by an Odd Alternant Hydrocarbon	<i>Chem. Eur. J.</i> 2024, e202400895
129.	Arpan Das, Sukanta Saha, Subir Maji, Pallavi Sarkar, Anex Jose, Madhur Mahesh Bhatt, Anup Bhunia, Arnab Dutta, Swapan K. Pati, <u>Swadhin K. Mandal</u>	Highly Stable Self- Regenerating Organic Multi- Redox Systems derived from Bicyclic (Alkyl)(amino)carbenes (BICAACs)	<i>Chem. Eur. J.</i> 2024, e202303411

128. Subir Maji, Arpan Das, Madhur Mahesh Bhatt and <u>Swadhin K. Mandal</u>	Metal-Free Organocatalytic S-Formylation of Thiols using CO₂	<i>Nature Catalysis</i> 2024, 7, 375-385
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127.	Paramita Datta, Debojyoti Roy, Divya Jain, Shiv. Kumar, Swagata Sil, Anup Bhunia, Jyotishman Dasgupta and <u>Swadhin K. Mandal</u>	Uncovering the On- pathway Reaction Intermediates for Metal- Free Atom Transfer Radical Addition to Olefins through Photogenerated Phenalenyl Radical Anion	<i>ACS Catalysis</i> 2024, 14, 3420-3433
126.	Shiv Kumar, Paramita Datta, Anup Bhanja and <u>Swadhin K. Mandal</u>	Denitrogenation of Tosylhydrazones: Synthesis of Aryl Alkyl Sulfones Catalyzed by Phenalenyl Based Molecule	<i>Catal. Sci. Technol.</i> 2024, 14, 174-182
125.	Nimisha Gautam, Ratan Logdi, Sreejyothi P, Antara Roy, Ashwani K. Tiwari and <u>Swadhin K. Mandal</u>	<i>Bicyclic (alkyl)(amino)carbene (BICAAC) in Dual Role: Activation of Primary Amides and CO₂ towards Catalytic N- Methylation</i>	<i>Chemical Science</i> 2023, 14, 5079-5086

124.	Paramita Datta, Tanmay Goswami, Noufal Kandoth, Ananya Banik, Jasimuddin Ahmed, Athul Santha Bhaskaran, Ramchandra Saha, Rositha Kuniyil, Hirendra N. Ghosh, <u>Swadhin Kumar</u> Mandal	<i>Generation of Photoinduced Phenalenyl-Based Radical: Towards Designing Reductive C-C Coupling Catalysis</i>	<i>ChemPhotoChem 2023, Just Accepted</i>
123.	Ananya Banik, Paramita Datta and <u>Swadhin K.</u> Mandal	<i>C-Alkylation by Phenalenyl-based Molecule via Borrowing Hydrogen Pathway</i>	<i>Organic Letters 2023, 25,8, 1305–1309</i>

122.	Amit Biswas, Anup Bhunia and <u>SwadhinK. Mandal</u>	<i>Mechanochemical Solid State Single Electron Transfer from Reduced Organic Hydrocarbon for Catalytic Aryl- halide Bond Activation</i>	<i>Chemical Science</i> 2023 , 14 , 2606-2615
121.	Soumi Chakraborty, Rounak Nath, AnujKumar Ray, Ankan Pauland <u>SwadhinK. Mandal</u>	<i>Metal-Ligand Cooperativity in Mn(I)-Catalyzed N-Formylation of SecondaryAmides and Lactams usingCO₂ at Room Temperature</i>	<i>Chem. Eur. J.</i> 2023 , 29 , e202202710(6 of 9)

120.	Swagata Sil, Athul Santha Bhaskaran, Soumi Chakraborty, Bhagat Singha, Rositha Kuniyil and Swadhin K. Mandal	<i>Reduced Phenalenyl Based Molecule as a Super Electron Donor for Radical Mediated C-N Coupling Catalysis at Room Temperature</i>	<i>J. Am. Chem. Soc.</i> 2022, 144, 49, 22611–22621
119.	Arpan Das, Pallavi Sarkar, Subir Maji, Swapan K. Pati and Swadhin K. Mandal	<i>Mesoionic N- Heterocyclic Imines as Super Nucleophiles in Catalytic Coupling of Amides by CO₂</i>	<i>Angew. Chem. Int. Ed.</i> 2022, 61, e202213614(1 of 10)

118.	Subir Maji, Pallavi Sarkar, Arpan Das, Swapan K. Pati and <u>Swadhin K. Mandal</u>	<i>Benzimidazolylidene Stabilized Borenum Ion for Catalytic Hydrogenation of N-heterocycles</i>	<i>Inorg. Chem.</i> 2022 , <i>61</i> , 36 , 14282–14287
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117.	Sreejyothi P, Pallavi Sarkar, Supriti Dutta, Arpan Das, Swapan K Pati and <u>Swadhin K Mandal</u>	<i>Regioselective ring-opening of epoxides towards Markovnikov alcohols: A metal-free catalytic approach using abnormal N-heterocyclic carbene</i>	<i>Chem. Commun.</i> , 2022, 58 , 9540-9543
116.	Jasimuddin Ahmed and <u>Swadhin K. Mandal</u>	<i>Phenalenyl Radical: Smallest Polycyclic Odd Alternant Hydrocarbon Present in the Graphene Sheet</i>	<i>Chemical Reviews</i> 2022, 122 , 13, 11369–11431
115.	Ananya Banik and <u>Swadhin K. Mandal</u>	<i>Tuning Redox States of Phenalenyl Based Molecule by Consecutive Reduction towards Transition Metal-Free Heck type C-C Cross-Coupling</i>	<i>ACS Catalysis</i> 2022, 12 , 5000-5012
114.	Nimisha Gautam, Ratan Logdi, Sreejyothi P, N. M. Rajendran, Ashwani K. Tiwari and <u>Swadhin K. Mandal</u>	<i>Bicyclic (alkyl)(amino)carbene (BICAAC) as a metal-free catalyst for reduction of nitriles to amines</i>	<i>Chem. Commun.</i> 2022, 58 , 3047-3050

113.	Soumi Chakraborty, ArpanDas , and <u>SwadhinK. Mandal</u>	<i>Redox-active Ligand BasedMn(I)-Catalyst for Hydrosilylative Ester Reduction</i>	<i>Chem. Commun.</i> 2021, 57, 12671- 12674
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112.	Subir Maji, ArpanDas and <u>Swadhin K. Mandal</u>	<i>Mesoionic N-heterocyclic Olefin Catalysed Reductive Functionalization of CO₂ for Consecutive N-Methylation of Amines</i>	<i>ChemicalScience, 2021,12,12174-12180</i>
111.	Arpan Das, Soumi Chakrabortyand <u>Swadhin K. Mandal</u>	<i>Abnormal N-heterocyclic Carbene Based Ni(II) π-allyl Complex towards Molecular Oxygen Activation</i>	<i>Chemistry—An Asian Journal, 2021, 16, 2257–2260</i>
110.	Sreejyothi P, Kalishankar Bhattacharyya, Shiv Kumar, Pradip Kumar Hota, Ayan Datta and <u>Swadhin K. Mandal</u>	<i>An NHC-stabilized phosphinidene for catalytic formylation: ADFT guided approach</i>	<i>Chem.-Eur.J 2021, 27, 11656 –11662</i>
109.	Ananya Banik, Jasimuddin Ahmed, SwagataSil, <u>Swadhin K. Mandal</u>	<i>Mimicking Transition Metals in Borrowing Hydrogen from Alcohols</i>	<i>ChemicalScience, 2021,12, 8353-8361</i>
108.	Bhagat Singh, Jasimuddin Ahmed, Amit Biswas, RupankarPaira, and <u>Swadhin K. Mandal</u>	<i>Reduced Phenalenyl in Catalytic Dehalogenative Deuteration and Hydrodehalogenationof Aryl Halides</i>	<i>J. Org. Chem 2021, 86, 10, 7242–7255</i>

107.	N. M. Rajendran, Nimisha Gautam, Jasimuddin Ahmed, Pallavi Sarkar, Arpan Das, Shubhajit Das, Swapan K. Pati, <u>Swadhin K. Mandal</u>	<i>Bicyclic(alkyl)(amino)carbene stabilized zinc(0) complex and its electron transfer reactivity</i>	<i>Chem. Commun.</i> <i>2021, 57, 5282-5285</i>
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	Sreejyothi, Swagata Sil, <u>Swadhin K. Mandal</u> Aniruddha Sengupta, ArindamSarkar	<i>Characterization, and Interaction with NuclearDNA</i>	
103.	Ravindra Dhar Dubey, Arindam Sarkar, Zheyu Shen, Vladimir I. Bregadze, Igor B. Sivaev, Anna A. Druzina, Olga B. Zhidkova, Akim V. Shmal'ko, Irina D. Kosenko, Prasannakumar Sreejyothi, <u>SwadhinMandal</u> ,NarayanS. Hosmane	<i>Effects of linkers on the Development of Liposomal Formulation of Cholesterol Conjugated cobalt bis(dicarbollides) for Boron Neutron Capture Therapy in Cancer</i>	<i>Journal of Pharmaceutical Sciences 2021, 110, 1365-1373</i>
102.	SreejyothiP and <u>SwadhinK Mandal</u>	<i>From CO₂ Activation to CatalyticReduction: A Metal- free Approach</i>	<i>ChemicalScience 2020 11, 10571 - 10593</i>
101.	Soumi Chakraborty, Jasimuddin Ahmed, ArpanDas and <u>Swadhin K Mandal</u>	<i>Designing Cr-catalyst Bearing a Redox Non-innocent Phenalenyl-Based Ligand towards Hydrosilylative CO₂ Functionalization</i>	<i>Chem. Commun. 2020 56, 13788-13791</i>
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	Ahmed, SreejyothiP. and <u>Swadhin K. Mandal</u>	<i>NHC based Potassium Complex: Integrating NucleophilicitywithLewis Acidic Activation</i>	
98.	SamareshChandra Sau, Pradip Kumar Hota, <u>Swadhin K. Mandal</u> ,MicheleSoleilhavoup and GuyBertrand	<i>Stable Abnormal N-Heterocyclic Carbenes and theirApplicationsin Catalysis</i>	<i>Chem.Soc.Rev.</i> 2020, 49, 1233-1252
97.	Zheyu Shen, Ting Liu, Zhen Yang, ZijianZhou, WeiTang, WenpeiFan, Yijing Liu, Jing Mu, Ling Li, Vladimir I Bregadze, <u>Swadhin K Mandal</u> , Anna A Druzina, ZhenniWei, Xiaozhong Qiu, Aiguo Wu, Xiaoyuan Chen	<i>Small-sized gadolinium oxide based nanoparticles for high-efficiency theranostics of orthotopic glioblastoma</i>	<i>Biomaterials</i>, 2020 119783.
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95.	Pradip Kumar Hota, Subir Maji,JasimuddinAhmed, N. M. Rajendran and <u>Swadhin K. Mandal</u>	<i>NHC-catalyzed Silylative Dehydration of Primary Amidesto Nitriles at Room Temperature</i>	<i>Chem. Commun.</i>, 2020, 56, 575-578
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92.	Govindarajan, R; Ahmed, Jasimuddin; Swain, Asim; <u>Swadhin K. Mandal</u>	<i>Transition Metal-Free Catalytic Carboalkoxylation of Styrenes at Room Temperature</i>	<i>J. Org. Chem.</i> 2019, 84, 13490-13502
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Book Chapter

Swadhin K. Mandal and Herbert W. Roesky “Designing Molecular Catalysts Based on Enhanced Lewis Acidity” *Adv. Cat.* **54**, 2011, 1- 61, Editors: Bruce C. Gates (Series Editor), Helmut Knoezinger (Series Editor), Friederike C. Jentoft (Series Editor), academic press.

Patents Granted

Patent Name	Patent Holders	Year	Indian Application/International Application No.	International ApplicationNo.
Abnormal N-heterocyclic Carbene Copper(1) Complexes, Synthesis and Applications Thereof	Mandal, S. K. and Sau, S. Ch.	2013	IndianPatent Application No. 1042/KOL/2013 (Filed on: 06/09/2013)	IndianPatent No. 338890; Granted on: 19/06/2020
LipidBasedPlatinum N- heterocyclic Compounds and Nanoparticles	Sarkar, A.; Mandal, S. K.	2014	US2016/0122377	US Patent No 10017531, Granted on 10 th July, 2018