

Profile Page



Name : Dr Sadhika Khullar

Designation : Assistant Professor

Department : Chemistry

Qualification : PhD Chemistry (Indian Institute of Science Education and Research Mohali)
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Research Interests :

Multifunctional Porous Materials (Metal Organic Frameworks and Covalent Organic Frameworks) and Coordination Polymers for Energy, Environment and Catalysis applications

Other Profile Links :

Google Scholar Link :

Dr. Sadhika Khullar [Click Here](#)

Journal Publications :

Year	Journal	Publication
2020	Chemical Communications	Sadhika Khullar* and Sanjay K Mandal*, Modulation of hydrophilicity inside the cavity of molecular rectangles self-assembled under ambient conditions
2020	Synthetic Communications	Shiwani Berry , Shamsher S. Bari , Pooja Yadav , Ankita Garg , Sadhika Khullar , Sanjay K. Mandal & Aman Bhalla, Stereoselective synthesis of trans-3-functionalized-4-pyrazolo[5,1-b]thiazole-3-carboxylate substituted γ -lactams: Potential synthons for diverse biologically active agents
2019	Journal of Chemical Sciences	Sapna Sethi*, Balbir Singh Kaith, Mandeep Kaur, Neeraj Sharma and Sadhika Khullar*, A hydrogel based on dialdehyde carboxymethyl cellulose–gelatin and its utilization as a bio adsorbent
2019	Inorganica Chimica Acta	Sadhika Khullar*, Smriti Thakur and Sanjay K Mandal*, Synthesis and structural characterization of Zn(II) and Cd(II) ion directed coordination networks and their template-free fabrication to metal oxide nanomaterials

2019	Dalton Transactions	Datta Markad, Sadhika Khullar and Sanjay K Mandal, Novel primary amide-based cationic metal complexes: green synthesis, crystal structures, Hirshfeld surface analysis and solvent-free cyanosilylation reaction
2019	Journal of Biomaterials Science, Polymer Edition, https://doi.org/10.1080/09205063.2019.1659710	Sapna Sethi*, B S Kaith, Mandeep Kaur, Neeraj Sharma and Sadhika Khullar*, Study of a Cross-Linked Hydrogel of Karaya Gum and Starch as a Controlled Drug Delivery System
2019	ACS Omega	Sadhika Khullar*, Sandhya Singh, Prasenjit Das and Sanjay K Mandal*, Luminescent Lanthanide-Based Probes for the Detection of Nitroaromatic Compounds in Water
2019	Environmental Research	Regeneration, degradation, and toxicity effect of MOFs: Opportunities and challenges, Pawan Kumar, Bhaskar Ananda, Yiu Fai Tsang, Ki-Hyun Kim, Sadhika Khullar, BoWang, https://doi.org/10.1016/j.envres.2019.05.019
2019	Tetrahedron, https://doi.org/10.1016/j.tet.2019.07.001	PreetySaini, S.S.Bari, Subash C.Sahoo, SadhikaKhullar, Sanjay K.Mandal and Aman Bhalla, Stereoselective synthesis and characterization of novel trans-4-(thiophenyl)pyrazolyl-?-lactams and their C–3 functionalization
2018	Dalton Transactions	P. Laha, U. De, F. Chandra, N.Dehury, S.Khullar, H. Sik Kim and S. Patra, "Alkyl chain-modified cyclometalated iridium complexes as tunable anticancer and imaging agents"
2018	Organic and Biomolecular Chemistry, 16, 3220-3228	S. Kumari, S. M. Abdul Shakoor, S.Khullar, S. K. Mandal and R.Sakhuja, "An unprecedented tandem synthesis of fluorescent coumarin-fused pyrimidines via copper-catalyzed cross-dehydrogenative C (sp ³)–N bond coupling"
2018	Tetrahedron , 78, 4400-4408	A. Kumari, S.S.Bari, G. Modi, S. Berry, S.Khullar, S. K. Mandal, A. Bhalla, "Comprehensive study towards the desulfonylation/desulfinylation of cis-3-functionalized 3-phenylsulfonyl/sulfinyl-?-lactams to access novel cis-3-monosubstituted-?-lactams"
2018	New Journal of Chemistry, 42, 6315-6321	G.Singh, S.Girdhar, A. Singh, A. Saroa, J. S. Lakhi, S.Khullar and S. K. Mandal, "Selective mercury ion recognition using a methyl red (MR) based silatrane sensor"
2018	ACS Omega, 3, 11062-11070	N. Kumar, S.Khullar and S. K. Mandal, "Encapsulation of a Water Octamer Chain in a Chiral 2D Sheetlike Supramolecular Coordination Network Composed of Dinickel–Dicarboxylate Subunits"
2018	ACS Appl. Nano Mater, 1, 5226–5236	D. Markad, S. Khullar and S. K. Mandal, "Engineering a Nanoscale Primary Amide-Functionalized 2D Coordination Polymer as an Efficient and Recyclable Heterogeneous Catalyst for the Knoevenagel Condensation Reaction"
2018	Chem. Eur. J., 24, 6418-6425	N. Patel, M. Arfeen, R. Sood, S. Khullar, A. K. Chakraborti, S. K. Mandal and P. V. Bharatam, "Can Remote N-Heterocyclic Carbenes Coordinate with Main Group Elements? Synthesis, Structure and Quantum Chemical Analysis of N ⁺ Centre Complexes"
2017	Chemistry Select, 2, 11677-11685	F. Baig, S. Khullar, S. K. Mandal and M. Sarkar, "Coordination Polymers Comprised of an Exo Bifunctional Schiff Base Ligand and Succinate Dianion: Critical Analysis of Factors Affecting the Structures and Framework Dimensionality"
2017	Chem. Asian J., 12, 3061- 3068	S. M. A. Shakoor, D. S. Agarwal, S. Khullar, S. K. Mandal and R. Sakhuja, "Solvent-Driven Iodine-Mediated Oxidative Strategies for the 12. Synthesis of Bis(imidazo[1,2-a]pyridin-3-yl)sulfanes and Disulfanes"

2017	Cryst. Growth and Des, 17, 2386-2405	K. Chadha, M. Karan, Y. Bhalla, R. Chadha, S.Khullar, S.Mandal, and K. Vasisht, "Cocrystals of Hesperetin: Structural, Pharmacokinetic, and Pharmacodynamic Evaluation"
2017	Cryst. Growth and Des, 17, 1589-1599	S. G. Khare, S. K. Jena, S. T. Sangamwar, S.Khullar, and S. K. Mandal, "Multicomponent Pharmaceutical Adducts of α -Eprosartan: Physicochemical Properties and Pharmacokinetic Study"
2016	Cryst. Growth and Des., 16, 4960-4967	R. Chadha, P. Singh, S. Khullar, S. K. Mandal, "Ciprofloxacin Hippurate Salt: Crystallization Tactics, Structural Aspects, and Biopharmaceutical Performance"
2016	ChemistrySelect, 1, 6641 – 6648	K. Suman, S. Khullar, S. K. Mandal and M. Sarkar, "Role of Anions in Assembling the Coordination Polymers of Bis-pyridyl-alkanediamides"
2016	J. Org. Chem, 81, 12340-12349	S. M. A. Shakoor, S. Kumari, S. Khullar and S. K. Mandal, "Ruthenium(II)-Catalyzed Regioselective Ortho Amidation of Imidazo Heterocycles with Isocyanates"
2016	J. Org. Chem, 81, 7574-7583	S. S. Chourasiya, D. Kathuria, S. S. Nikam, A. Ramakrishnan, S. Khullar, S. K. Mandal, A. K. Chakraborti, P. V. Bharatam, "Azine-Hydrazone Tautomerism of Guanylhyazones: Evidence for the Preference Toward the Azine Tautomer"
2016	Chem. Eur. J., 22, 1088-1096	P. V. Bharatam, M. Arfeen, N. Patel, P. Jain, S. Bhatia, A. K. Chakraborti, S. Khullar, V. Gupta, S. K. Mandal, "Design, Synthesis, and Structural Analysis of Divalent Ni Compounds and Identification of a New Electron-Donating Ligand"
2016	Pharma. Dev. Tech, 5, 611-618	A. Saini, R. Chadha, A. Gupta, P. Singh, S. Bhandari, S. Khullar, S. Mandal, D. S. Jain, "New conformational polymorph of hydrochlorothiazide with improved solubility"
2016	Tetrahedron Letters, 57, 2822-2828	A. Bhalla, S. S. Bari, J. Bhalla, S. Khullar, S. Mandal, "Facile synthesis of novel halogenated 4-pyrazolylspirocyclic- β -lactams: versatile heterocyclic synthons"
2016	Tetrahedron Letters, 57, 1758-1762	K. Vashist, M. Dhobi, S. Khullar, S. K. Mandal, M. Karan, "Norneolignans from the roots of Clitoria ternatea L"
2015	Dalton Trans, 44, 16778-16784	V. Gupta, S. Khullar, S. Kumar and S. K. Mandal, "Construction of a robust pillared-layer framework based on the rare paddlewheel subunit [MnII2(η -O2CR)4L2]: synthesis, crystal structure and magnetic properties"
2015	Dalton Trans, 44, 1520-1525	N. Kumar, S. Khullar and S. K. Mandal, "Solvent effect on neutral chiral supramolecular assemblies and their distinct receptor behaviour towards anions"
2015	Dalton Trans, 44, 1203-1210	S. Khullar and S K Mandal, "Ancillary ligand assisted self-assembly of coordination architectures of Mn(II): the effect of the N-alkyl group on a tridentate ligand"
2015	J. Chem. Sciences, 127, 679-685	G. J. P. Singh, A. Saroa, S. Khullar and S. K. Mandal, "Schiff bases of N-(2-aminoethyl)-3-aminopropyltrimethoxysilane and its silatranes: Synthesis and characterization"
2014	Journal of Photochemistry and Photobiology A: Chemistry, 278, 31-38	R. C. Kamboj, P. Jindal, D. Kumar, S.Khullar, S. K. Mandal, "Synthesis of Some Benzofurooxepines' Derivatives via [3 + 2] Cycloaddition of Epoxide with Tethered Alkyne: A Photochemical Approach "
2014	Pharm Res, 31, 2479-89	R. Chadha, S.Bhandari, S.Khullar, S. K. Mandal, "Characterization and evaluation of multi-component crystals of hydrochlorothiazide"
2014	Crystal Growth & Design, 2014, 14, 12, 6433-6444	Sadhika Khullar and Sanjay K Mandal, Effect of Spacer Atoms in the Dicarboxylate Linkers on the Formation of Coordination Architectures—Molecular Rectangles vs 1D Coordination Polymers: Synthesis, Crystal Structures, Vapor/Gas Adsorption Studies, and Magnetic Properties

2013	Crystal Growth & Design, 2013, 13, 7, 3116-3125	Sadhika Khullar and Sanjay K Mandal, Structural Diversity of Mn(II) Complexes with Acetylene Dicarboxylate and Hexadentate Ancillary Ligands under Ambient Conditions: Effect of Methylene Chain Length on Coordination Architectures
2013	Crystal Growth & Design, 2013, 13, 2, 858-870	Renu Chadha, Anupam Saini, Sadhika Khullar, Dharamvir Singh Jain, Sanjay K. Mandal, T. N. Guru Row, Crystal Structures and Physicochemical Properties of Four New Lamotrigine Multicomponent Forms
2012	Crystal Growth & Design, 2012, 12, 11, 5329-5337	Sadhika Khullar and Sanjay K Mandal, Supramolecular Assemblies of Dimanganese Subunits and Water Clusters Organized by Strong Hydrogen Bonding Interactions: Single Crystal to Single Crystal Transformation by Thermal De-/Rehydration Processes

Conference Publications :

Year	Conference	Publication
2022	Advanced Functional Materials: Future Perspectives (August 6-8, 2022)	Sakshi and Sadhika Khullar, Synthesis and Characterization of a Cd(II) complex: Anion interaction and Fabrication of Cadmium oxide nanoparticles
2022	Advanced Functional Materials: Future Perspectives (August 6-8, 2022)	Ritika Jaryal, Sadhika Khullar and Rakesh Kumar, Effect of solvent and acid on the morphology of the γ -ketoenamine-linked covalent organic frameworks (COFs)

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
Book Chapter	Porous Nanomaterials for CO ₂ Remediation for a Sustainable Environment	Springer	Sakshi and Sadhika Khullar	978-3-030-69023-6	2023
Book Chapter	Biopolymeric Nanohydrogels As Devices for Controlled and Targeted Delivery of Drugs	Springer	Sapna Sethi, Medha, Swati Thakur, Anjali Singh, B. S. Kaith, and Sadhika Khullar	978-3-030-69023-6	2023
Book Chapter	Metal- and Carbon-Based Nano-Frameworks as Catalysts for Supercapacitance and Fuel Industry	Springer	Ritika Jaryal, Rakesh Kumar, and Sadhika Khullar	978-3-030-69023-6	2022
Book Chapter	Natural Polymer-Based Nanocomposite Hydrogels as Environmental Remediation Devices	Springer	Sapna Sethi, Anjali Singh, Medha, Swati Thakur, B. S. Kaith, and Sadhika Khullar	978-3-030-69023-6	2022

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI	YSS	ENGINEERING METAL ORGANIC FRAMEWORKS AND COORDINATION POLYMERS FOR CHIRAL CATALYSIS AND SENSORS	SERB-DST	2016	2019	Rs. 11,28,000	Completed	NA

Events Organized :

Category	Type	Title	Venue	From	To	Designation
Conference	International	Chemical Constellation Cheminar - 2019	Dr B R Ambedkar National Institute of Technology Jalandhar, Jalandhar, Punjab-India	12-10-19	13-10-19	Organizing Secretary
STC	National	Intellectual Property Rights	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	07-09-2020	11-09-2020	Coordinator
STC	National	Chemistry for Engineering Applications	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	14-09-2020	18-09-2020	Coordinator
STC	National	Research Communication	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	25-09-2020	29-09-2020	Coordinator
Conference	National	Sustainable Environment: Challenges and Opportunities	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	08-09-2021	09-09-2021	Organizing Secretary
STC	National	Design Thinking	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	27-09-2021	01-10-2021	Coordinator
Conference	International	Advanced Functional Materials: Future Perspectives	NIT Jalandhar	06-08-2022	08-08-2022	Organizing Secretary
Workshop	National	Learning the Technology and Applications of DST Sponsored Advanced Instruments	NIT Jalandhar	19-09-2022	25-09-2022	Organizing Secretary

Professional Affiliations :

Designation	Organization
Life Member	Indian Chemical Society
Life Member	The Indian Science Congress Association
Life Member	Indian Crystallographic Association

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Janak	CPs for water splitting reactions	Ongoing	2022	NA
Sakshi	Porous Materials	Ongoing	2019	NA

PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Abhay (20311101)	Design and Development of Lead (II) based Coordination Polymers as Electrocatalysts for Oxygen Evolution Reaction	Completed	2022	NA
Nitika Garg (20311118)	Temperature Dependent formation of Mesoporous Zn(II), Cu(II) and Ni(II) based Coordination Polymers: Dye Adsorption, CO ₂ uptake and Solvent Encapsulation	Completed	2022	NA
Chahat Dhir (19311115)	pi-electron rich Chiral Ligands derived from L-Serine and their Metal Complexes – Synthesis, Characterization and Applications	Completed	2021	NA
Mohit Singh (19311126)	Sulphonate based Coordination polymers as Proton Conducting materials	Completed	2021	NA
Lakshay Rathore (19311123)	pi-electron rich Chiral Ligands derived from L-Cysteine and their Metal Complexes	Completed	2021	NA
Haneesh Saini (18311108)	Transition Metal based Coordination Architectures comprised of a Primary Amide Ligand and a Thiolsubstituted Dicarboxylic Acid: Synthesis, Characterization and Sensing Properties	Completed	2020	NA
Janak (18311110)	Synthesis and Characterization of Coordination Polymers of Pb(II) with ancillary ligands and dicarboxylates Linkers: Role as an Electrocatalyst	Completed	2020	NA

Admin. Responsibilities :

Position Held	Organization	From	To
Faculty Incharge	Fine Arts Society	03-03-2020	till date