


Name of the Teaching Staff	Dr. V. MADHU			
Designation	Associate Professor			
School / Division	SSAM / Physical Sciences			
Date of Joining the Institution	14th June, 2012			
Qualification with Class / Grade	UG	PG	Ph.D.	
	First Class	First Class	NA	
Area of Specialization	Inorganic Chemistry, Supramolecular Chemistry, Optoelectronic Materials and Catalysis for Sustainable Development			
Research Interests	<ul style="list-style-type: none"> - Optoelectronic Materials - Catalysis/Green Chemistry - Supramolecular Chemistry - Single crystal analysis - Multifunctional Organic and Inorganic materials - Forensic Chemistry and Applications 			
Subjects Teaching	Under Graduate		Post Graduate	
	<ul style="list-style-type: none"> • Applied Chemistry • Engineering Chemistry • Applied Chemistry- Laboratory • Instrumental Techniques in Chemistry • Inorganic Chemistry for Forensic Science • Environmental Studies • Chemistry for Computer Science and Engineering • Fundamentals of Forensic Science • Forensic Chemistry Lab • Inorganic Chemistry Laboratory • Forensic Science Laboratory • Recent Trends in Forensic Science 		<ul style="list-style-type: none"> • Analytical Chemistry • Inorganic Chemistry • Main group Chemistry • Molecular spectroscopy • Physical Chemistry- Laboratory • Principles of Molecular Spectroscopy • Spectroscopic Methods for Structural Elucidation • Coordination Chemistry of Transition Elements • Chemistry of Non-Transition Elements 	
Total Experience in Years	Teaching	Industry	Research	
	13 Years	6 months	21 Years	
Papers Published	National	1	International	43
Papers Presented in Conference	National	20	International	15
Conferences / Symposiums / Seminars / Workshops Participated	National	40	International	12
FDP / STTP / MDP / Summer / Winter School attended	<ol style="list-style-type: none"> 1. Five day Mission 10X Faculty Empowerment Workshop organized by Wipro Technologies on “High Impact teaching skills”, July 12 – 16, 2011 2. Two days Mission10X Advanced Workshop organized by Wipro 			

	Technologies, 2011			
	3. Faculty Induction Programme held at Karunya University, Coimbatore during June 14 – 20, 2012 .			
	4. Faculty Pedagogy Programme held at Karunya University, Coimbatore during June 22 – 28, 2012			
	5. Short Term Course on “Current Scenario in Nano & Functional Materials (Nano-FM 2017)” which held at Department of Chemical Engineering, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu, India during March 1-7, 2017 .			
	6. Five day online FDP on Outcome Based Education - A Paradigm Shift , June 4 - 11, 2020 organized by IQAC, Christ College of Science and Management, Malur, Karnataka.			
	7. Dr. V. Madhu , Attended in AICTE-ATAL-FDP on " Green Technology & Sustainability in Chemistry" organized by Department of Chemistry, Adhiyamaan College of Engineering, Hosur during 2 nd August 2021 – 6 th August 2021 .			
	8. Dr. V. Madhu , Attended in AICTE-ATAL-FDP on " Smart Materials in Chemistry' organized by Department of Chemistry, Adhiyamaan College of Engineering, Hosur during 14 th November-25 th November 2022 .			
M.Phil. / Ph.D. Guide ship	Field		University	
	1. Chemistry 2. Forensic Science		Karunya Institute of Technology and Sciences (Deemed to be University)	
Ph.D. Projects Guided	Ph.D.s	2	Project at Master's Level	30
Professional Memberships	<ul style="list-style-type: none"> • Member in American Chemical Society (ACS) • Member of Israel Chemical Society (ICS) • Member of <u>National Environmental Science Academy (NESA)</u> • <u>Member of Materials Research Society of India (MRSI)</u> • Member of Luminescence Society of India (LSI) • Member of Chemical Research Society of India (CRSI) • Member of Institution Innovation Council, Ministry of Human Resource Development (MHRD). 			
Consultancy Activities	<ul style="list-style-type: none"> • NMR, Mass and IR spectral analysis • UV-Vis-NIR absorption spectral analysis • Single crystal X-ray structure analysis 			
Awards & Honours	<ul style="list-style-type: none"> • C V Raman International Fellowship for African Researchers (Indian Host)-2023 and 2024, FICCI and Department of Science & Technology, Government of India. • Achiever Award 2021 by Karunya university • IUCr Bursary Award-2017 • Achiever Award 2017 by Karunya university • UGC research award 2014-16 • Achiever Award 2013 by Karunya university • DST Fast track for Young Scientist • Best Poster Award-International Conference On Biological Inorganic Chemistry-2013 • Postdoctoral Research Fellowship, Weizmann Institute of Science, Israel (2007). • Senior Research Fellowship (SRF) in Chemistry, Council of Scientific and Industrial Research (CSIR), Government of India, (2005). • Junior Research Fellowship (JRF) Chemistry, Council of Scientific and Industrial Research (CSIR), Government of India, (2003). • Qualified Joint CSIR-UGC-JRF-NET conducted by Council of 			

	<p>Scientific and Industrial Research (CSIR), Government of India, (2003).</p> <ul style="list-style-type: none"> • Graduate Aptitude Test in Engineering (GATE 2002), Government of India. • Graduate Aptitude Test in Engineering (GATE 2001), Government of India.
Grants Fetched	<ol style="list-style-type: none"> 1. Project Title: “<i>Extending π-Conjugation of Metal Bis-dithiolene with Organic Backbones: NIR Absorbing Hybrid Materials for Optoelectronic Applications</i>” (2017-2020); Funding Agency: DST-SERB, Govt. of India, New Delhi Rs. 38, 28, 760/- (Completed) 2. Project Title: <i>Investigation of new bimetallic catalysts for O₂ and CO₂ activation with enchanting catalytic properties: Green Chemistry Approach</i> (2012-2015); Funding Agency: DST-SERB, Govt. of India, New Delhi Rs. 25,30,000 (Completed) 3. UGC research award Project Title: <i>Design of Binuclear haem and Non-haem Based Transition Metal Catalysts: Synthesis, Characterization and Oxidation Catalysis through Dioxygen Activation</i> (2014-16); Funding Agency: UGC, Govt. of India, New Delhi, Rs. 1,10,000/- (Ongoing) 4. Project Title: <i>Synthesis and Characterization of Organic-Inorganic Hybrid Perovskite Materials for Photodetector Applications</i> ((2022-25), Funding Agency: UGC-DAE Consortium for Scientific Research, Govt. of India. Rs. 17,745,19 (Completed) 5. <i>Second International Conference on Frontiers in Chemical Sciences (ICFCS-2023)</i>, Held at Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore during 26-27th October 2023. Funding Agency: CSIR, Govt. of India, New Delhi Rs. 50, 000/- 6. <i>First International Conference on Frontiers in Chemical Sciences (ICFCS-2020)</i>, Held at Department of Chemistry, Karunya Institute of Technology and Sciences, Coimbatore during 4-5th March 2020. Funding Agency: DST-SERB, Govt. of India, New Delhi Rs. 1, 00, 000/- 7. Science Academies' Lecture Workshop On <i>Recent Advances in Chemical Sciences (RACS-15)</i>, February 18th & 19th, 2015, held at Karunya Institute of Technology and Sciences (Deemed to be University); Funding Agency: National Science Academies (IASc, INSA and NASI), Rs. 1, 40, 500/-
Interaction with Professional Institutions	<ul style="list-style-type: none"> • Weizmann Institute of Science, Israel • Temple University, USA • Centre national de la Recherche Scientifique (CNRS), France • Indian Institute of Science, • University of Hyderabad, • National Chemical Laboratory-Pune • IITs, IISERs
Educational Details	<p>B.Sc. – Govt. Arts College, Krishnagiri (University of Madras)</p> <p>M.Sc. – School of Chemistry, University of Madras, Guindy Campus, Chennai-600025</p> <p>Ph.D. - School of Chemistry, University of Hyderabad, Hyderabad</p>
Experience	<p>2007 – 2010 Postdoctoral Research Fellow (Catalysis) With Prof. Ronny Neumann, Head, Department of Organic Chemistry, Weizmann Institute of Science, 76100 Rehovot, Israel.</p> <p>2010 –2012 Assistant Professor Department of Chemistry, Jayam College of Engineering and Technology,</p>

	<p>2012 –2020</p> <p>2020 –Present</p>	<p>Nallanur, Dharmapuri-636 813 Tamil Nadu, India Assistant Professor Department of Applied Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore-641114</p> <p>Associate Professor Department of Applied Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore-641114</p>
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Contact Details	<p>Room No. SHF-208 Division of Physical Sciences School of Science, Arts and Media (SSAM) Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore, Tamilnadu India - 641 114 Mobile: 9600691317 E-mail: madhu@karunya.edu vmadhuu1@gmail.com</p>
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Papers Published

1. J. Issac, S. Ravi, K. Chidambaranathan, S. Karthikeyan, M. Pannipara, A. G. Al-Sehemi, S. P. Anthony and **V. Madhu***, Multi-stimuli fluorescence responsive TPA/TPE-Imidazo[1,2-a]pyridine π -conjugated donor-acceptor derivatives and effect of donor structure, *Cryst. Growth Des.*, **2024**, 24, 3388–3398.
2. R. Kumar, A. K. Srivastava, P. Nagarasu, **V. Madhu*** and E. Balaraman*, General and expedient amination of alcohols catalysed by a single-cite (NN)Co(II)-bidentate complex under solventless conditions, *Catal. Sci. Technol.*, **2024**, 14, 98-109.
3. S. Ravi, P. Priyadharshini, S. Karthikeyan, M. Pannipara, A. G. Al-Sehemi, **V. Madhu**, D. Moon and S. P. Anthony, Anthracene-naphthylacetonitrile fluorescence isomers and Cl/H substituent dependent molecular packing, solid-state fluorescence and mechanofluorochromism, *CrystEngComm*, **2023**, 25, 6303 - 6309.
4. P. Gayathri, S. Ravi, S. Karthikeyan, M. Pannipara, A. G. Al-Sehemi, **V. Madhu**, D. Moon, S. P. Anthony, Naphthylacetonitrile isomerism and donor conformational flexibility controlled molecular self-assembly and solid-state fluorescence properties, *J. Lumin.*, **2023**, 264, 120173.
5. A. I. Almansour, M. F. Alkaltham, N. Arumugam, S. M. Soliman, **V. Madhu**, S. I. Alaqeel, N. Dege, P. Karuppiah, K. Perumal, Stereo and regioselective synthesis, structural elucidation and antibacterial activity of novel spiropyrrolidine embedded with two units of oxindoles, *J. Mol. Struct.*, **2023**, 1294, 136496.
6. V. J. Tamilpriyai, P. Nagarasu, K. S. Dharshini, P. Dhanaraj, A. Veerappan, D. Moon, S. P. Anthony and **V. Madhu***, Halo-bridged Cu(II) complexes with pyridine-pyrazole ligands: Influence of halogen and ligand lipophilicity on antimicrobial activity, *J. Mol. Struct.*, **2023**, 1294, 136414.
7. D. K. Sivadas, S. Ravi, P. Nagarasu, D. Johnson, V. Thiruvengatam, S. P. Anthony and **V. Madhu***, Fluorophore unit controlled photoswitching of hydrazone derivatives: Reversible and irreversible off-on/dual-color fluorescence photoswitches, *Mol. Syst. Des. Eng.*, **2023**, 8, 1462-1469
8. D. K. Sivadas, P. Gayathri, S. Ravi, S. Karthikeyan, M. Pannipara, A. G. Al-Sehemi, D. Moon,

- S. P. Anthony and **V. Madhu,*** Distinct fluorescence state, mechanofluorochromism of terpyridine conjugated fluorophores and the reusable sensing of nitroaromatics in aqueous medium, *New J. Chem.*, **2023**, 47, 12770-12778
9. K. P. Jose, S. Ravi, D. K. Sivadas, S. P. Anthony, **V. Madhu,*** Fluorometric Detection of Methanol by Using Triphenylamine Fluorophore Tethered Terpyridine Probe, *ChemistrySelect*, **2023**, 8, e202204978.
 10. P. Nagarasu, P. Gayathri, S. Niranjana Sri, N. Saisubramanian, P. Dhanaraj, D. Moon, S. P. Anthony and **V. Madhu*** Synthesis, Antibiofilm activity and molecular docking study of new water-soluble copper(II)-pincer complexes, *Inorg. Chem. Commun.*, **2022**, 139, 109316.
 11. P. Gayathri, K. Kanagajothi, P. Nag, N. Anand, V. S. Reddy, D. Moon, S. P. Anthony and **V. Madhu***, Symmetrical and unsymmetrical thiazole based ESIPT derivatives: Highly selective fluorescence sensing of Cu²⁺ and structure controlled reversible mechanofluorochromism, *CrystEngComm*, **2021**, 23, 6769-6777.
 12. P. Nagarasu, A. Kundu, V. Thiruvengatam, P. Raghavaiah, S. P. Anthony and **V. Madhu***, Investigating structure-fluorescence properties of imidazole fused tetraphenylethylene AIEgens: Reversible mechanofluorochromism and polymer matrix controlled fluorescence tuning, *CrystEngComm*, **2021**, 23, 5403 – 5410.
 13. J. Rana, P. Nagarasu, M. Subramanian, A. Mondal, **V. Madhu,*** and Ekambaram Balaraman, Manganese-Catalyzed C(α)-Alkylation of Oxindoles with Secondary 2 Alcohols via Borrowing Hydrogen, *Organometallics*, **2021**, 40, 627–634.
 14. **V. Madhu**, S. Mani, Enhanced microwave and photocatalytic decomposition of synthetic lignin wastewater by TiO₂ nanoparticles coated on activated carbon, *Materials Today: Proceedings*, **2021**, 47, 800-806.
 15. J. Pitchaimani, S. T. R. J. Rajkumar, S. M. Mahalingam, S. P. Anthony, D. Moon, **V. Madhu,*** Coordination diversity in transition metal complexes with 4-aminoantipyridine tethered bis(imino)pyridine ligand: structures, superoxide dismutase and anticancer properties, *J. Coord. Chem.*, **2020**, 73, 3174-3185.
 16. P. Nagarasu, A. Kundu, J. Pitchaimani, S.P. Anthony, D. Moon and **V. Madhu,*** Structure controlled solvatochromism and halochromic fluorescence switching of 2,2'-bipyridine based donor-acceptor derivatives, *New J. Chem.*, **2020**, 44, 14421-14428.
 17. **V. Madhu***, A. K. Kanakati and S. K. Das, Serendipitous isolation of triazinone based air stable organic radical: synthesis, crystal structure and computation, *New J. Chem.*, **2020**, 44, 10781-10785.
 18. J. Pitchaimani, A. Kundu, S. P. Anthony, D. Moon, and **V. Madhu*** Assessing the Facile Synthetic Route for Direct Access of Perylenediimide Single Crystals at High-yield via In-situ Crystallization, *ChemistrySelect*, **2020**, 5, 2070 –2074.
 19. J. Pitchaimani, S. Karthikeyan, N. Lakshminarasimhan, S. P. Anthony, D. Moon and **V. Madhu***, Reversible Thermochromism of Nickel(II) Complexes and Single- Crystal-to-Single-Crystal Transformation, *ACS Omega* **2019**, 4, 13756-13761.
 20. J. Pitchaimani, N. Gunasekaran, S. P. Anthony, D. Moon and **V. Madhu***, Hydrogenation of nitroaromatics to anilines catalyzed by air stable arene ruthenium(II)-NNN pincer complexes, *Appl. Organomet. Chem.*, **2019**, 33, e4689.
 21. S. P. Midya, J. Rana, J. Pitchaimani, A. Nandakumar, **V. Madhu*** and E. Balaraman, Ni-catalyzed α -alkylation of unactivated amides and esters with alcohols via hydrogen auto-transfer strategy, *ChemSusChem*, **2018**, 11, 3911-3916.

22. S. P. Midya, J. Pitchaimani, V. G. Landge, **V. Madhu*** and E. Balaraman, Direct access to N-alkylated amines and imines via acceptorless dehydrogenative coupling catalyzed by a cobalt(II)-NNN pincer complex, *Catal. Sci. Technol.*, **2018**, *8*, 3469-3473.
23. S. Sowmiya, V. V. Kumar, J. Pitchaimani, **V. Madhu***, R. Thiagarajan, N. Sai Subramanian, S. P. Anthony, Self-assembly of water soluble perylene tetracarboxylic acid with metal cations: Selective fluorescence sensing of Cu²⁺ and Pb²⁺ ions in paper strips, zebrafish and yeast, *J. of Luminescence*, **2018**, *203*, 42-49.
24. V. G. Landge, J. Pitchaimani, S. P. Midya, M. Subaramanian, **V. Madhu*** and E. Balaraman, Phosphine-free cobalt pincer complex catalyzed Z-selective semi-hydrogenation of unbiased alkynes, *Catal. Sci. Technol.*, **2018**, *8*, 428-433.
25. A. M Khenkin, **V. Madhu**, L. JW Shimon, M. A Cranswick, J. EMN Klein, L. Que, R. Neumann, Hydrogen-Atom Transfer Oxidation with H₂O₂ Catalyzed by [Fe^{II} (1, 2-bis (2, 2'-bipyridyl-6-yl) ethane (H₂O)₂)]²⁺: Likely Involvement of a (μ-Hydroxo)(μ-1, 2-peroxo) diiron (III) Intermediate, *Israel J. Chem.*, **2017**, *57*, 990-998.
26. J. Pitchaimani, A. Kundu, S. Karthick, S. P. Anthony, D. Moon and **V. Madhu**, A Crab Claw Shaped Molecular Receptor for Selective Recognition of Picric Acid: Supramolecular Self-Assembly Mediated Aggregation Induced Emission and Colorimetric Change, *CrystEngComm*, **2017**, *19*, 3557-3561.
27. I. K. Naik, R. Sarkar, **V. Madhu**, R. Bolligarla, R. Kishore and S. K. Das, An Organic Receptor Isolated in an Unusual Intermediate Conformation: Computation, Crystallography and Hirshfeld Surface Analysis, *J. Phys. Chem. A*, **2017**, *121*, 3274-3286.
28. P. S. Hariharan, J. Pitchaimani, **V. Madhu***, S. P. Anthony, A halochromic stimuli-responsive reversible fluorescence switching 3, 4, 9, 10-perylene tetracarboxylic acid dye for fabricating rewritable platform, *Optical Materials*, **2017**, *53*-57.
29. A. Kundu, J. Pitchaimani, **V. Madhu***, P. Sakthivel, R. Ganesamoorthy and S. P. Anthony, Bay functionalized Perylenediimide with pyridine positional isomers: NIR absorption and selective colorimetric/fluorescent sensing of Fe³⁺ and Al³⁺ ions, *Journal of Fluorescence*, **2017**, *27*, 491-500.
30. J. Pitchaimani, M. R. Charan Raja, S. Sujatha, S. K. Mahapatra, D. Moon, S. P. Anthony and **V. Madhu***, Synthesis of Arene Ruthenium (II) Complexes with Chalcone, Aminoantipyrine and Aminopyrimidine Based Ligands and Preliminary Evaluation of Anti-leukemia Activity, *RSC Advances* **2016**, *6*, 90982-90999.
31. **V. Madhu**, R. Bolligarla, I. K. Naik, Raju Mekala and S. K. Das, A {Cu₄I₄} Cluster Supported on a Metal-dithiolate Complex Anion Causes its Conformational Change Leading to a Doubly-bridged Curved Coordination Polymer and its Reactivity, *Eur. J. Inorg. Chem.* **2016**, 4257-4264.
32. P. S. Hariharan, J. Pitchaimani, **V. Madhu***, S. Philip Anthony, Perylenediimide Based Fluorescent Dyes for Selective Sensing of Nitroaromatic Compounds: Selective Sensing in Aqueous Medium Across Wide pH Range, *Journal of Fluorescence*, **2016**, *26*, 395-401.
33. **V. Madhu**, S. Supriya, K. Ravada and S. K. Das, Mechanical motion in the solid state and molecular recognition: reversible cis-trans transformation of an organic receptor in a solid-liquid crystalline state reaction triggered by anion exchange, *CrystEngComm*, **2015**, *17*, 3219-3223.
34. **V. Madhu** and S. K. Das, Diverse Supramolecular Architectures Having Well-Defined Void

Spaces Formed from a Pseudorotaxane Cation: Influential Role of Metal Dithiolate Coordination Complex Anions, *Cryst. Growth Des.* **2014**, *14*, 2343–2356.

35. **V. Madhu**, Y. Diskin-Posner, R. Neumann, Copper(I) Complexes of Bipyridine and Terpyridine with Fluorous Tails and the Formation of Crystalline Materials with Fluorous Layers, *Eur. J. Inorg. Chem.* **2011**, 1792–1796.
36. K. Livanov, **V. Madhu**, E. Balaraman, L. J. W. Shimon, Y. Diskin-Posner, R. Neumann, Photocatalytic Splitting of CS₂ to S₈ and a Carbon_Sulfur Polymer Catalyzed by a Bimetallic Ruthenium(II) Compound with a Tertiary Amine Binding Site: Toward Photocatalytic Splitting of CO₂? *Inorg. Chem.* **2011**, *50*, 11273-11275.
37. **V. Madhu** and S. K. Das, Neutral coordination polymers based on a metal–mono(dithiolene) complex: synthesis, crystal structure and supramolecular chemistry of [Zn(dmit)(4,4'-bpy)]_n, [Zn(dmit)(4,4'-bpe)]_n and [Zn(dmit)(bix)]_n (4,4'-bpy = 4,4'-bipyridine, 4,4'-bpe = *trans*-1,2-bis(4-pyridyl)ethene, bix = 1,4-bis(imidazole-1-ylmethyl)-benzene, *J. Chem. Soc. Dalton Trans.*, **2011**, *40*, 12901-12908.
38. **V. Madhu**, E. Balaraman, L. J. W. Shimon, Y. Diskin-Posner, G. Leitus, and R. Neumann, Structural Diversity in Manganese, Iron and Cobalt Complexes of the Ditopic 1,2-Bis(2,2'-bipyridyl-6-yl)ethyne Ligand and Observation of Epoxidation and Catalase Activity of Manganese Compounds, *J. Chem. Soc. Dalton Trans.*, **2010**, *39*, 7266-7275.
39. **V. Madhu** and S. K. Das, New Series of Asymmetrically Substituted Bis(1,2-dithiolato)-Nickel(III) Complexes Exhibiting Near IR Absorption and Structural Diversity, *Inorg. Chem.* **2008**, *47*, 5055-5070.
40. **V. Madhu** and S. K. Das, A New Approach to Functionalize an Organic Compound through the Influence of Metal Bis(dithiolene) Complexes Leading to Ion-Pair Compounds Exhibiting Strong Emission at Room Temperature in the Visible Region, *Inorg. Chem.* **2006**, *45*, 10037–10039.
41. **V. Madhu** and S. K. Das, N–H···S Hydrogen Bonds in a New Family of Ion-Pair Complexes Between Cationic Nickel Tetraazabicyclononane and Anionic Metal Dithiolates: Synthesis, Characterization and Properties of [Ni(C₉H₂₂N₆)] [M(mnt)₂] (MII = Cu, Ni, Pd), *Eur. J. Inorg. Chem.* **2006**, 1505–1514.
42. **V. Madhu** and S. K. Das, One Pot Synthesis of a Mn(III)–Cu(II)–Mn(III) Trinuclear Heterometallic Compound Formed by Mn···S–Cu–S···Mn Supramolecular Interactions: Crystal Structure of [Mn^{III}(salph)(H₂O)]₂{Cu^{II}(mnt)₂}.4DMF, *J. Chem. Sci.*, **2006**, *118*, 611–617.
43. **V. Madhu** and S. K. Das, Supramolecular p–p Assembly of a Neutral [Cu(salen)] Complex via the Templating Effect of an Ionic Inorganic Complex Na₂[Cu(mnt)₂] Forming a Framework type Material having Well-Defined Channels, *Inorg. Chem. Commun.*, **2005**, *8*, 1097–1100.
44. **V. Madhu** and S. K. Das, Near-IR Absorption due to Supramolecular Electronic Interaction in an Extended 3D Hydrogen-Bonding Network Material: Synthesis, Crystal Structure and Properties of [4,4'-H₂bpy][Cu(mnt)₂], *Polyhedron*, **2004**, *23*, 1235–1242.

Papers Presented in Conference

1. **V. Madhu**, Participated in the one day seminar on “ACS on Campus” Organized by American Chemical Society on 10th August 2020.
2. **V. Madhu**, Participated in the one day DST and ACS workshop, Organized by American Chemical Society and Department of Science and Technology, India on 28th July 2020.

3. **V. Madhu**, Participated and presented his work as oral in the Virtual 2nd International Conference on *Crystal Engineering: From Molecule to Crystal*, Organized by Royal Society of Chemistry and IISER, kolkata during, 19 – 20 June 2020.
4. **V. Madhu**, Participated in the *International Webinar on Soil Spectroscopy: An Emerging Technique for Rapid Soil Health Assessment Jointly organized by ICAR-Indian Institute of Soil Science, Bhopal & World Agroforestry (ICRAF)*, Nairobi on 01 October 2020
5. **V. Madhu**, Participated in the National webinar on *Forensic Science: Careers and future prospects* organized by Department of Applied Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore, Tamil Nadu, India on 27-05-2020.
6. **V. Madhu**, Participated in the Indo-UK Virtual Conference ‘*Current Innovations and the Future of Therapeutic Developments*’ CIFTD-2020, organized by Centre for Biomaterials Cellular & Molecular Theranostics (CBCMT) at Vellore Institute of Technology (VIT), Vellore, India and Swansea University, United Kingdom during 1st-3rd June, 2020.
7. **V. Madhu**, Attended the 1st Virtual International Symposium on *C-H Activation* organized by Prof. Dr. Lutz Ackermann, Universität Göttingen, Germany, from July 27th to July 30th, 2020.
8. **V. Madhu**, Participated in the One day international seminar on “*Curriculum Design and Instructional Materials Development*” Organized by Karunya Competency Development Center (KCDC) and NITTTR, chennai held at Karunya Institute of Technology and Sciences, Coimbatore on 6th January 2018.
9. **V. Madhu** and S. K. Das, *Coordination Polymers Based on a Metal(dithiolene) Complexes: Syntheses, Structures, and Properties*, Poster presentation at the International conference on Emerging Trends in Chemical Sciences (IETC-2013), Organized by Chemistry Division, School of Advanced Sciences, VIT, Vellore.,5-7, December **2013**.
10. **V. Madhu**, *Synthesis, Characterization and Structural diversity of Manganese Complexes of Ditopic 1,2-bis(2,2'-bipyridyl-6-yl)ethyne Ligand: Epoxidation and Catalase Activity Studies*. Poster presentation at the “*International Conference on Biological Inorganic Chemistry (ICBIC-2013)*”, which was held in Periyar University, Salem, 20-22 February 2013.
11. **V. Madhu**, Participated in the one day National level technical seminar on “*X-Ray photoelectron spectroscopy for nanomaterials characterization*” Organized by Department of Chemistry, Department of ECE and Department of Nanoscience and technology, Karunya Institute of Technology and Sciences, Coimbatore on 19th February **2019**.
12. **V. Madhu**, Participated in the One day national seminar on “*Crystallography-an outreach programme by International Union of Crystallography-2017 (IUCr-2017)*” Organized by Department of Science and Humanities, Karunya University, Coimbatore on 17th February 2017.
13. **V. Madhu**, Participated in the two-days national hands-on training workshop on “*UV-Visible and Fluorescence Spectroscopy (HUVF-2015)*” Organized by Department of Chemistry, School of Science and Humanities, Karunya University, Coimbatore during 30th-31st January **2015**.
14. **V. Madhu**, Participated in the two-day national workshop on “*Luminescence Materials Devices and Applications (LMDA-15)*” Organized by Luminescence Society of India and IGCAR, Kalpakkam, which held during 19th-20th August **2015**.
15. **V. Madhu**, Participated and poster presented in the 10th Mid-year *CRSI Symposium in Chemistry (CRSI Mid-2015)* which held at NIT Trichy during 23rd- 25th July **2015**.

16. **V. Madhu**, Participated in National Conference on “*Innovations In Chemistry-Health and Energy (i-Chem-He 2014)*” Organized by Department of Chemistry, Karunya University, Coimbatore held on 6-8th February 2014.
17. G. Durga Prasad, **V. Madhu** and S. K. Das* *Modeling the active sites of iron only hydrogenase: synthesis, crystal structures and properties of heterocyclic dithiolene based iron carbonyls, [Fe₂{μ₂-Pdt}(CO)₆] And [Fe₂{μ₂-Qdt}(CO)₆]* Poster presentation at the “Modern Trends in Inorganic Chemistry (MTIC-XII)” which was held in Indian Institute of Technology, Madras, India on December, **2007**.
18. **V. Madhu** and S. K. Das*, *Conformational change of an organic cation receptor by molecular recognition of an inorganic complex anion: A supramolecular influence of π - π interactions.* Oral and Poster presentation at the “Modern Trends in Inorganic Chemistry (MTIC-XI)” which was held in Indian Institute of Technology, Delhi, India on December, **2005**.
19. **V. Madhu** and S. K. Das*, *A New Family of Ion-Pair Charge-Transfer Complexes Between Anionic Metal Dithiolates (M(II) = Cu, Ni, Pd) and Cationic Nickel Tetraazabicyclononanes.* Poster presentation at the “Modern Trends in Inorganic Chemistry (MTIC-X)” which was held in Indian Institute of Technology, Bombay, India on December, **2003**.
20. **V. Madhu**, Participated in the One day workshop on “*Electrochemical Energy conversion systems*” Organized by Department of Chemistry, School of Sciences, Arts, Media and Management, Karunya Institute of Technology and Sciences, Coimbatore on 7th March 2019.
21. **V. Madhu**, Participated and Poster presented in the 24th congress and general assembly of the *International Union of Crystallography* held at Hyderabad International Convention Centre, Hyderabad during 21-28 August **2017**.
22. **V. Madhu**, *Development of materials for anticancer, catalysis and Optoelectronic applications.* Poster presentation at Academic research poster presentation meet, which held at Karunya University, Coimbatore on 29th September 2017.
23. **V. Madhu**, Participated in a faculty development programme on “*LMS-BASIC (MOODLE)*” Organized by Karunya Competency Development Center (KCDC), Karunya University, Coimbatore on 5th August 2016. 2018.
24. **V. Madhu**, Participated in a faculty development programme on “*Lecture Capturing*” Organized by Karunya Competency Development Center (KCDC), Karunya University, Coimbatore on 23rd August 2018.
25. **V. Madhu**, Participated in the workshop on “*Improving effectiveness of teaching and quality of education*” Organized by Department of Science and Humanities, Karunya University, Coimbatore on 23rd June 2016.
26. **V. Madhu**, Participated in the Industry-Academia workshop on “*Opportunities for Science postgraduates*” Organized by Department of Science and Humanities, Karunya University, Coimbatore on 28th September 2016.
27. **V. Madhu**, Participated in the one day workshop on “*Journalism writing*” Organized by Department of extension and continuing Education (DECE), Karunya University, Coimbatore held on 11th January 2014.
28. **V. Madhu**, Participated in the workshop on “*Nuclear Chemistry and Radioisotope Detection Techniques*”, Organized by Department of Chemistry and Department of Nanotechnology, Karunya University on 23-24th August 2013.

INVITED LECTURES DELIVERED:

1. **V. Madhu**, Delivered an Invited lecture on “*Exploring the Organic and Inorganic Smart*

Fluorescence Materials for Multifunctional Applications” at International Seminar on Luminescence Materials (ISLM-2-22), jointly organized by Department of Physics, All Saints’ College, Thiruvananthapuram, Luminescence Society of India, University of Kerala, Mahatma Gandhi College, and Sanatana Dharma College, Alappuzha, Kerla during 9-10th December, **2022**.

2. **V. Madhu**, Delivered an Invited lecture on “*Advanced Functional Organic and Inorganic Materials: Optoelectronic and Sustainable Catalysis Applications*” at International conference on “Innovative Green Materials for Sustainable Engineering” (IGMSE - 2023), organized by Department of Chemistry, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai during 27 & 28th February 2023.
3. **V. Madhu**, Delivered an Invited lecture on “*Organic and Inorganic Based Advanced Functional Materials for Multifunctional Applications*” at National conference on “Advanced Materials Strategic Application and Sustainable Future (AMSAS-2023), organized Department of Chemistry KPR Institute of Engineering and Technology, Coimbatore during 16 & 17th December 2022.
4. **Dr. V. Madhu**, Delivered an Invited lecture on “*Strategic plan and Validate the Ideation Process to Start-Ups*” at Saveetha School of Engineering, Saveetha University, Chennai on 29th December **2022**.
5. **V. Madhu**, Delivered an Invited lecture on “*Exploring the Organic and Inorganic Smart Fluorescence Materials for Multifunctional Applications*” at International Seminar on Luminescence Materials (ISLM-2-22), jointly organized by Department of Physics, All Saints’ College, Thiruvananthapuram, Luminescence Society of India, University of Kerala, Mahatma Gandhi College, and Sanatana Dharma College, Alappuzha, Kerla during 9-10th December, **2022**.
6. **Dr. V. Madhu**, Delivered an Invited lecture in AICTE-ATAL-FDP on " *Smart Materials in Chemistry*" organized by Department of Chemistry, Adhiyamaan College of Engineering, Hosur during 14th November-25th November **2022**.
7. **Dr. V. Madhu**, Participated and Delivered an Invited lecture in 7 Days Workshop on “*Single Crystal X-Ray Crystallography*” during 18th April to 24th April **2022** organized by IIT Gandhinagar, Gujarat.
8. **Dr. V. Madhu**, delivered a invited talk on “*one day seminar*” organized by Department of Chemistry, Pachamuthu College of Arts and Science for Women, Dharmapuri- 636701 on 9th, May, **2022**.
9. **Dr. V. Madhu**, Delivered an Invited lecture on “*Emerging Applications of Inorganic and Organic Materials in Sustainable Catalysis and Optoelectronics*” at 13th Annual Research Congress organized by Karpagam Academy of Higher Education, Coimbatore during 18th December **2021**.
10. **Dr. V. Madhu**, Delivered an Invited lecture in AICTE-ATAL-FDP on " *Green Technology & Sustainability in Chemistry*" organized by Department of Chemistry, Adhiyamaan College of Engineering, Hosur during 2nd August 2021 – 6th August **2021**.
11. **V. Madhu**, Delivered an Invited lecture on “*UV-Vis-NIR spectroscopy: From Materils Design to Optoelectronic Device Applications*” at Webinar, organized by PG & Research Department of Chemistry, Padmavani College of Arts and Science for women, Salem, during 13th, August, **2020**.
12. **V. Madhu**, Delivered an Invited lecture on *Non-precious Metal Complexes for Sustainable Catalysis, Optoelectronic and Biology Application*" in National level Webinar organized by PG and Research Department of Chemistry, Chikkanna Government Arts College, Tirupur on

7/29/2020.

13. **V. Madhu**, Delivered an Invited lecture on “*Transition Metal NNN-Pincer Complexes for Sustainable Catalysis*” at National Seminar, organized by Department of Chemistry, JP College of Arts and Science, Tenkasi on 5th August **2019**.
14. **V. Madhu**, Delivered an Invited lecture on “*NNN-Pincer Ligands Based Transition Metal Complexes and their Application*” at In-house symposium on Recent Advances in Chemistry-2019 (ISRAC-19), organized by Department of Chemistry, Karunya Institute of Technology and Sciences, Coimbatore on 16th March **2019**.
15. **V. Madhu**, Delivered an Invited lecture on “*NNN-Pincer Ligands Based Transition Metal Complexes: Application in Catalysis and Thermochromism*” at National seminar on Recent Advances in Chemistry (NSRAC-2019), organized by Department of Chemistry, Pondicherry University, Pondicherry during 4-5th March, **2019**.
16. **V. Madhu**, Delivered an Invited lecture on “*Development of Transition Metal Based Catalysts Towards Sustainable Development: Challenges and Applications*” at National level workshop on “ Environmental Friendly Catalytic Operations In Chemistry” organized by Department of Chemistry, E.R.K Arts and Science College, Dharmapuri on 30th January **2019**
17. **V. Madhu**, Delivered an Invited lecture on “*Supramolecular Interaction Directed Assembly of Molecules into 1D Functional Materials*” at 1st International Symposium on Main-group Molecules on Materials (MMM) held at Department of Inorganic and Physical Chemistry, IISc-Bangalore during 28th to 31st October **2018**.
18. **V. Madhu**, Delivered an Invited lecture on “*Challenges in Development of Transition Metal Complexes For Catalysis and Anti-cancer Applications*” at National conference on Catalysis and Sustainable Development (NCCSD-2018), organized by PG & Research Department of Chemistry, Padmavani College of Arts and Science for women, Salem, during 19, January, **2018**.
19. **V. Madhu**, Delivered an Invited lecture on “*Perylenediimide and Metal-Bis(dithiolene) Based Analogues for NIR Absorbing Application*” at International Conference on Molecular Spectroscopy (ICMS-2017) held at Mahatma Gandhi University, Kottayam, Kerala during 8-10th December **2017**.
20. **V. Madhu**, Delivered an Invited lecture on “*Arene-Ruthenium(II) Complexes: Impact of Chelating Ligand on Anticancer Activity*” at RSC symposium on Inorganic Chemical Biology (ICB-2017) Organized by the School of Chemistry, Madurai Kamaraj University, Madurai, during March 17-18, **2017**.
21. **V. Madhu**, Delivered an Invited lecture on “*Development of Perylene and Perylenediimide Derivatives for Opto-Electronic Applications*” at National Conference on 'Emerging Challenges in Material Science' (Spec-2017) held at Muthayammal College of Arts & Science, Rasipuram during January 27 to 28, **2017**.
22. **V. Madhu**, Delivered an Invited lecture on “*Sulphur Rich Metallopolymers and Perylenediimide Analogues for Conducting and Opto-Electronic Applications*” at International Conference on Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM-2016) held at Mahatma Gandhi University, Kottayam, Kerala during May 13 to 15, **2016**.
23. **V. Madhu**, Delivered a Special Invited lecture on “*Catalysts Role in Sustainable Development*” at Thiruvalluvar Govt. Arts College, Namakkal on 2nd January **2015**.
24. **V. Madhu**, Delivered a Special Invited lecture on “*Chemistry and Its Applications*” at Thiruvalluvar Govt. Arts College, Namakkal on 9, February **2013**.

25. **V. Madhu**, Delivered an Invited lecture on “*Synthesis, Characterization and Applications of Nano Materials*” at Vijay Vidyalyaya College of Arts and Science, Dharmapuri, on 7th September **2013**.
26. **V. Madhu**, Delivered a Special Invited lecture on “*Introduction and Job Opportunity of Chemistry*” in the DST-Inspire Internship Science Camp-2012 at Jayam College of Engineering and Technology on 25, August **2012**.

Workshop/seminar/conference organized:

1. Second International Conference on Frontiers in Chemical Sciences (ICFCS-2023), organized by Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore during 26-27th October 2023 (**Convener**)
2. First International Conference on Frontiers in Chemical Sciences (ICFCS-2020), organized by Department of Chemistry, Karunya Institute of Technology and Sciences, Coimbatore during 4-5th March 2020 (**Convener**)
3. In-house symposium on Recent Advances in Chemistry-2019 (ISRAC-19), organized by Department of Chemistry, Karunya Institute of Technology and Sciences, Coimbatore on 16th March **2019 (Coordinator)**
4. National Conference on Molecules and Materials for Sustainable Development (NCMM-18), 6th, April 2018, Division of Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), (**Convener**).
5. Hands on Training Workshop on “Molecular Spectroscopy” Division of Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), 11th January, 2018, (**Organizing Secretary**).
6. Mega School Students Carnival-18 Organized by Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore on 27th October 2018, (**Coordinator**).
7. One-Day National Seminar on Crystallography-an Outreach programme by International Union of Crystallography-2017 (IUCr-2017), February 17th, 2017, held at Karunya Institute of Technology and Sciences (Deemed to be University) (**Coordinator**).
8. National Symposium on Invention and Innovation for Sustainable Development (IISD-2016), February 19, 2016, held at Karunya Institute of Technology and Sciences (Deemed to be University), (**Convener**).
9. Science Academies' Lecture Workshop On *Recent Advances in Chemical Sciences (RACS-15)*, February 18th & 19th, 2015, held at Karunya Institute of Technology and Sciences (Deemed to be University) (**Coordinator**).
10. National Symposium on Invention and Innovation for Sustainable Development (IISD-2015), April 15, 2015, held at Karunya Institute of Technology and Sciences (Deemed to be University), (**Organizing Secretary**).
11. National Conference on “Innovations In Chemistry-Health and Energy (i-Chem-He 2014) Organized by Department of Chemistry, Karunya University, Coimbatore held on 6-8th February 2014, (**Member**).
12. National Symposium on Invention and Innovation for Sustainable Development (IISD-2014), March 24, 2014, held at Karunya University (**Organizing Secretary**).
13. National Conference on Molecules and Materials-Solving problems of mankind (NCMM-13)

Organized by Department of Chemistry, Karunya University, Coimbatore during 15th and 16th, February 2013, (**Conference facilitator**).

Books / Book Chapters

V. Madhu, Role of Catalysts in Sustainable Development; *Towards Invention and Innovation for Sustainable development*; IRIS publishers, **2014**, 127-131.

Research Group Members

1. Dr. J. Pitchaimani (Alumni)- Assistant Professor, Sairam Group of Institutions, Chennai
2. Dr. P. Nagarasu (Alumni)- Postdoctoral Fellow, Shandong University of Technology, China
3. Ms. M. J. Tamilpriyai
4. Mr. Jerome Issac
5. Ms. Deepanjaly. K. S
6. Ms. Chetna Ranjendra Tidke
7. Ms. Karolin P Jose
8. Mr. N. Chidambaranathan